R008406

Illinois EPA
Document Index Form

Batch ID: A000962

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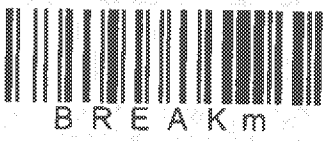

Bureau ID: 119813AAI **Illinois EPA ID:** 170000125683

Location Name: US Steel Granite City

Category: 03M

Document Date: 01/25/1996

Permit ID: 95010001

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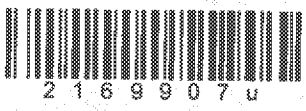

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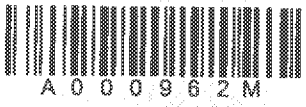

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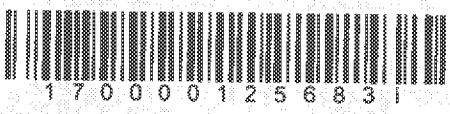

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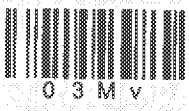

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Keyword:

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Batch ID: A000962

Doc ID: 2169892

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95010001

Permit Log:

Keyword:

FINAL

Comment:

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/782-2113

P. O. Box 19506, Springfield, IL 62794-9506

CONSTRUCTION PERMIT

IEPA-DIVISION OF CONSTRUCTION
RECEIVED
AUG 23 1995
REVIEWER

PERMITTEE

Granite City Division
of National Steel Corporation
Attn: Joseph S. Kocot
20th and State Street
Granite City, Illinois 62040

Application No.: 95010001 I.D. No.: 119813AAI
Applicant's Designation: Date Received: January 3, 1995
Subject: Production Increase
Date Issued: January 25, 1996
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in the allowable production rate of iron (from 2,372,500 to 3,165,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year) as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

1. Prior to issuance of this permit, a draft of this permit has undergone a public notice and comment period, and a public hearing was held.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOF's) shall not exceed 11,000 net tons per day, averaged over any calendar month, and;

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(23).

8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis.

9a. The Permittee shall determine the opacity from the openings BOF shop on at least a weekly basis. Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9 including the requirement that readings be taken by a certified observer.

d. These determinations shall be recorded in a log book, which at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.

10. The Permittee shall follow the BOF operating procedures and requirements specified in attachment A. These requirements are designed to ensure proper operation of the BOF control system. These procedures shall be posted in the BOF pulpit (a.k.a., control room).

11. Flame suppression shall be used and maintained during the entire tapping process.

12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency of the charging and primary hoods:

i. Set point requirements while only a single BOF vessel is in operation:

A. Minimum set point during charging process: 550,000 cfm;

B. Minimum set point during refining process: 650,000 cfm;

C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);

ii. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the set point shall be set to establish the total draft necessary to control the corresponding portion of the process which is occurring on each vessel during the overlap. For example, minimum set point while charging at one vessel and tapping at the other would be equal to that necessary to establish a flow of 700,000 cfm (i.e., 550,000 + 150,000).

iii. Overlapping operations of the BOF vessels is allowed only as specified in operating permit application number 72080043.

iv. The BOF capture system shall be operated at the above minimum set points until and unless the Agency approves a lower minimum set point based on a demonstration that a better level of particulate matter control will occur, except for purposes of emissions testing as related to the set point.

b. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use.

c. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

d. The stack gas flow meter shall be calibrated on at least a quarterly basis.

13a. Within 270 days of the date issued of this permit, the Permittee shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the various exhaust ventilation rates or levels of exhaust ventilation through the main downcommer duct of the ESP emissions capture and transport system.

b. The monitoring system shall be designed to be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated, tested and maintained to ensure accurate and useful data.

d. The Agency may allow an equivalent system or method instead of the above monitoring system provided the Permittee demonstrates, and the Agency approves, that such system or method will ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks in an equivalent manner, and that such system or method can be installed and operated within the time period required for the monitoring system as stated in this permit.

14a. The Permittee shall visually inspect at least monthly all visible BOF vessel enclosures, hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which includes the following:

a. Operating time of the BOF;

b. Operating time of the capture systems and performance parameters, including air flow and fan amperage through the fan motors, gas temperature at inlet to ESP, damper settings, and steam injection rate;

c. Operating time of the ESP and performance parameters, including voltage and amperage of each transformer/rectifier set, number of sections in use;

d. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

a. Natural Gas usage: 190 million ft^3 per month and 1,145 million ft3 per year;

b. Blast Furnace Gas (BFG) usage: 30,800 million ft3 per month and 185,030 million ft3 per year;

c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

a. The date (and time for the gate areas) each road or area was treated;

b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in conditions 2(b) and 6(b).

C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days

after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit.

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on 0.05846 mmft^3 BFG generated per net ton of hot metal produced.

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft^3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and

printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

STARTUP AND TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source, and supersede such conditions in cases where a conflict exists.

38. Operation at the increased production rates specified in this permit is allowed for 270 days from the date issued under this construction permit.

39a. The following tests shall be performed to demonstrate compliance with the conditions of this permit within 270 days from the date issued of this permit:

i. Blast Furnace testing: The emissions of particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides, and the opacity from the blast furnace casthouse stack shall be measured. These tests shall be designed to verify compliance with 35 Ill. Adm. Code 212.445 and the requirements of this permit;

ii. Hot Metal Desulfurization testing: The emissions of particulate matter from the desulfurization baghouse shall be measured. These tests shall be designed to verify compliance with the requirements of this permit and 35 Ill. Adm. Code 212.446(b)(2);

iii. BOF testing: The emissions of particulate matter, carbon monoxide, and lead from the BOF ESP stack, and the opacity from both the BOF ESP stack and BOF Shop shall be measured. These tests shall be designed to verify compliance with 35 Ill. Adm. Code 212.446, 212.458 and the requirements of this permit;

iv. Fuel Combustion Units testing: The emissions of particulate matter from a representative boiler while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

v. BFG generation testing: The amount of blast furnace gas generated ($mmft^3$) per ton of hot metal produced shall be determined. The Agency may waive this requirement for testing providing the Permittee submit a sufficient explanation of how BFG generation is determined with justification that such determination is appropriate for purposes of compliance determinations with this permit.

b. These tests shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close

to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5
Sulfur Dioxide	USEPA Method 6
Nitrogen Oxides	USEPA Method 7
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10
Lead	USEPA Method 12

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 60 days prior to the actual date of testing of the BOF, a written test plan shall be submitted to the Agency for review and approval. This plan shall be describe the specific procedures for testing the BOF, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion

accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate
- determined emission factor
- compliance demonstrated - Yes/No
- other pertinent information (e.g., for the BOF, pulpit set point for each process of the BOF cycle - charging, refining, and tapping);

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized and in no case later than upon the submittal of the operating permit application for this production increase.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Source Emission Test Specialist
Intercontinental Center
1701 1st Avenue
Maywood, Illinois 60153

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

REPORTING

40. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois EPA
Bureau of Air
Compliance Unit (#39)
P.O. Box 19276
Springfield, Illinois 62794-9276

41. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Iron and steel production (tons/month and tons/yr, each);

b. Natural gas and BFG usage (mmft3/month and mmft3/yr, each);

c. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF MAJOR SOURCE RULES

42a. As a consequence of the above conditions, this permit is issued based upon the following changes in emissions, as further described in Table 6, accompanying increased production as allowed by this permit:

i. The increases in emissions of lead and VOM are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration;

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is

not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	~ 52.0	238.8	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

* Significant Levels:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Explanatory Note:

PM	=	particulate matter = particulate;
PM-10	=	particulate matter less than or equal to 10 micrometers in size;
SO_2	=	sulfur dioxide;
NO_x	=	nitrogen oxides;
VOM	=	volatile organic material;
CO	=	carbon monoxide;
mm	=	million;
gr/dscf	=	grains per dry standard cubic foot;
acfm	=	actual cubic feet per minute;
mmcf	=	million cubic feet;
Mgal	=	thousands of gallons.

If you have any questions on this permit, please call Jim Ross at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JAR:jar

cc: IEPA, FOS Region 3

Permit Application #95010001

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping)- captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO_2	0.2006	422.0
NO_x	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.031	49.06
PM-10	0.0155	24.53
SO_2	0.0104	21.94
NO_x	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO_2	0.0100	15.83

Permit Application #95010001

TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.02548	40.32
PM-10	0.02548	40.32
SO_2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00279	6.01
PM-10	0.00279	6.01

Permit Application #95010001

TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack (charge, refine, tap)

Pollutant	Emission Factor (lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.16	262.80
PM-10	0.16	262.80
NO_x	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.1934 lbs/hr	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	Emission Factor (lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0987	176.71
PM-10	0.06614	118.40
Lead	0.0129 lbs/hr	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.03721	58.88
PM-10	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09 tons/yr

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00032	0.57
PM-10	0.00032	0.57

Permit Application #95010001

TABLE 2 (cont.)

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0016	2.86
PM-10	0.0016	2.86

6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0050	7.94
PM-10	0.0050	7.94

Permit Application #9501000i

TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Throughput = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00715	12.80
PM-10	0.00715	12.80

2. Deslagging Station and Material HS.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00355	6.35
PM-10	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.006	10.74
PM-10	0.006	10.74
NO_x	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00852	15.25
PM-10	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0071	12.71
PM-10	0.0071	12.71

Permit Application #95010001

TABLE 3 (cont.)

6. Slab Ripping

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00722	12.92
PM-10	0.00722	12.92

Permit Application #95010001

TABLE 4

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage (mmft³/Yr)
NATURAL Gas (Total)	1,145
BFG	185,030

Fuel Oil 365 thousand gallons/yr

1. Natural Gas

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	5.1	2.92
PM-10	5.1	2.92
SO_2	0.6	0.34
NO_x	306	175.19
VOM	2.8	1.60
CO	40	22.90

2. BFG

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	2.9	268.29
PM-10	2.9	268.29
SO_2	6.65	615.22
NO_x	5.28	488.48
CO	13.7	1,267.46

Permit Application #95010001

TABLE 4 (cont.)

3. Fuel Oil

Pollutant	Emission Factor (lbs/Mgal)	Maximum Emissions (Tons/Yr)
PM	9.72	1.77
PM-10	9.72	1.77
SO_x	141.3	25.79
NO_x	55	10.04
VOM	0.28	0.05
CO	5.0	0.91
Lead	0.336	0.06 (waste oil)

Permit Application #95010001

TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

Units = tons/year

	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
Blast Furnace Operations	218	194	474	24	157	--	--
BOF Shop	510	451	--	70	12	16,097	1.43
Continuous Casting Operations	71	71	--	90	--	--	--
Certain Fuel Combustion Units[A]	273	273	641	674	2	1,291	0.06
Roadways	27	27	--	--	--	--	--
Material Handling	2	2	--	--	--	--	--
	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
TOTAL	1,101	1,018	1,115	858	171	17,388	1.49

[A] Blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

Permit Application #95010001

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

* Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	-52.0	238.8	476.0	5,685	59.3	0.54

* Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

* Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

* Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

* Significant Levels:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Permit Application #95010001

ATTACHMENT A

PROCEDURES TO ENSURE PROPER OPERATION
OF BOF ESP CONTROL SYSTEM

1. The emissions control operator shall:

   a. Check on a regular basis and report to the emissions control foreman or melter:

      i. Any ESP fields down;

      ii. Any ESP fields in which the meter readings are showing no current or a fault;

   b. Check on a regular basis that doors on all hopper screws are closed;

   c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.

2. The melter shall:

   a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;

   b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;

   c. Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:

      i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;

      ii. Check the stack gas pulpit set point for proper setting;

      iii. Call the emissions control operator who shall perform the following steps;

         A. Check the AVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;

         B. Check to ensure that doors on all hopper screws are closed;

   d. Check oxygen blow rates and adjust, if necessary;

   e. Check hot metal chemistry;

Permit Application #95010001

ATTACHMENT A (cont.)

f. A log shall be maintained of the above checks and any actions taken as a result.

3. The emission control foreman shall:

a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;

b. Check on a regular basis the draft rate set points;

c. Check on a regular basis primary and secondary damper settings;

d. Check on a regular basis ESP operation, including the following:

i. Fields down;

ii. Fields indicating shorts and unable to reset;

iii. Hopper screw doors are closed;

e. Check on a regular basis blow rates;

f. Check on a regular basis spray water system operation;

g. Check on a regular basis steam injection rate;

h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;

i. Contact the area manger for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;

j. Notify the emissions control operator and melter when isolation work begins;

k. A log shall be maintained of the above checks and any actions taken as a result.

4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:

a. Use controlled pouring of the hot metal into the BOF vessel;

b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;

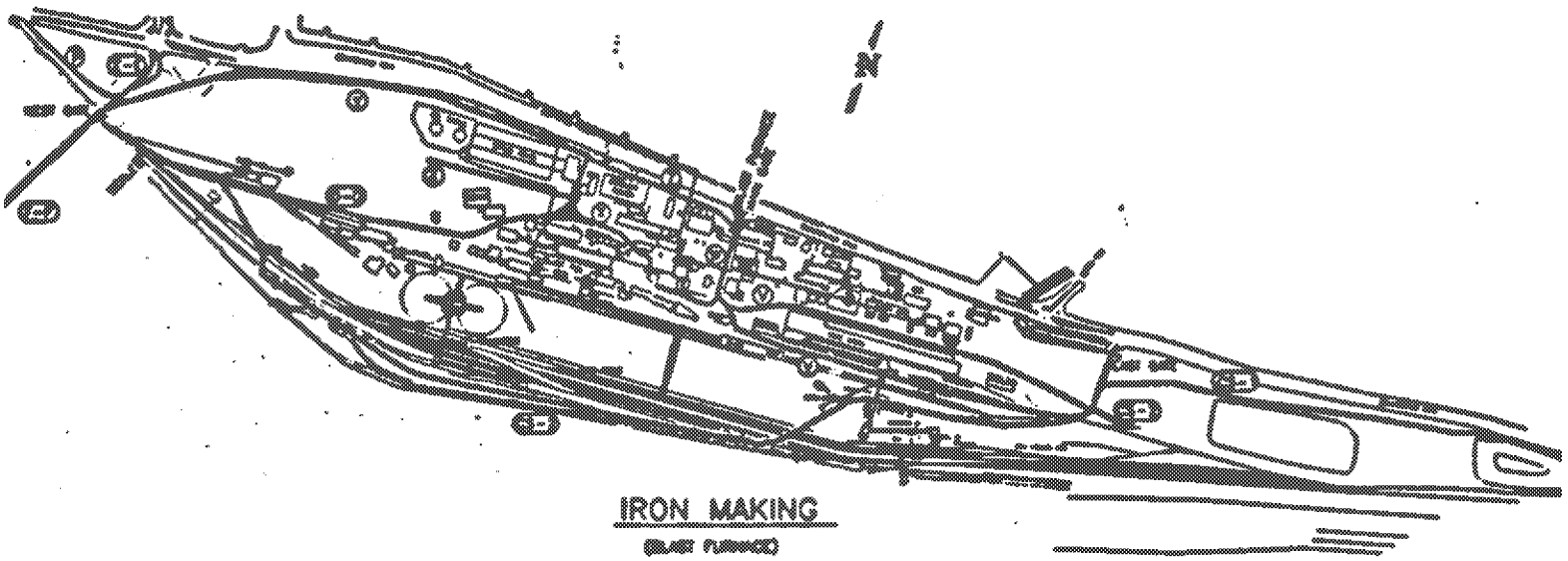
c. Use the most beneficial furnace tilt angle;

d. These procedures shall be posted in the crane operator booth.

Permit Application #95010001

ATTACHMENT B

ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND
MAPS SHOWING THE ROAD SEGMENTS



GRANITE CITY STEEL
GRANITE CITY, ILLINOIS

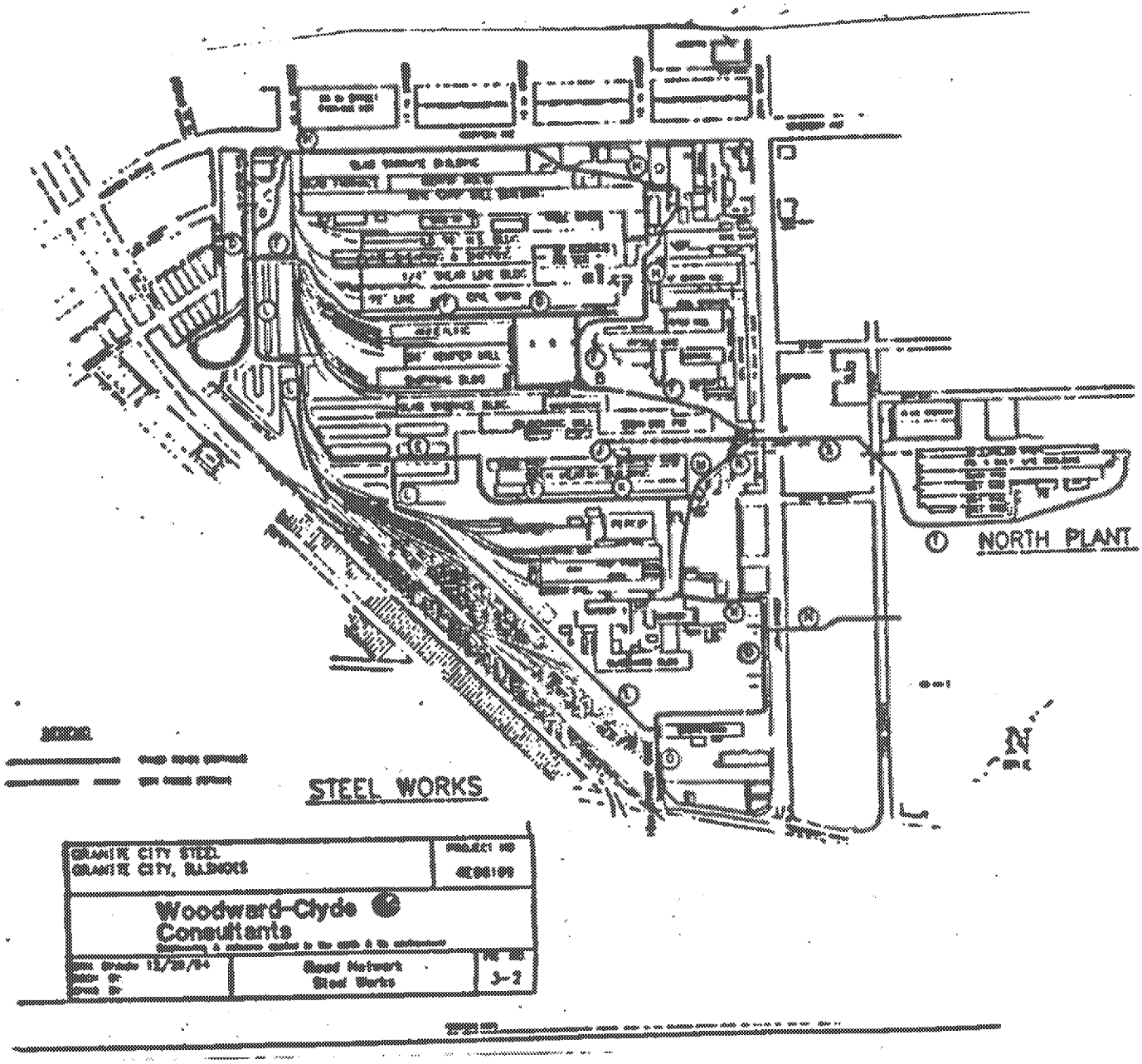
Woodward-Clyde Consultants

Iron Making Area

3-3

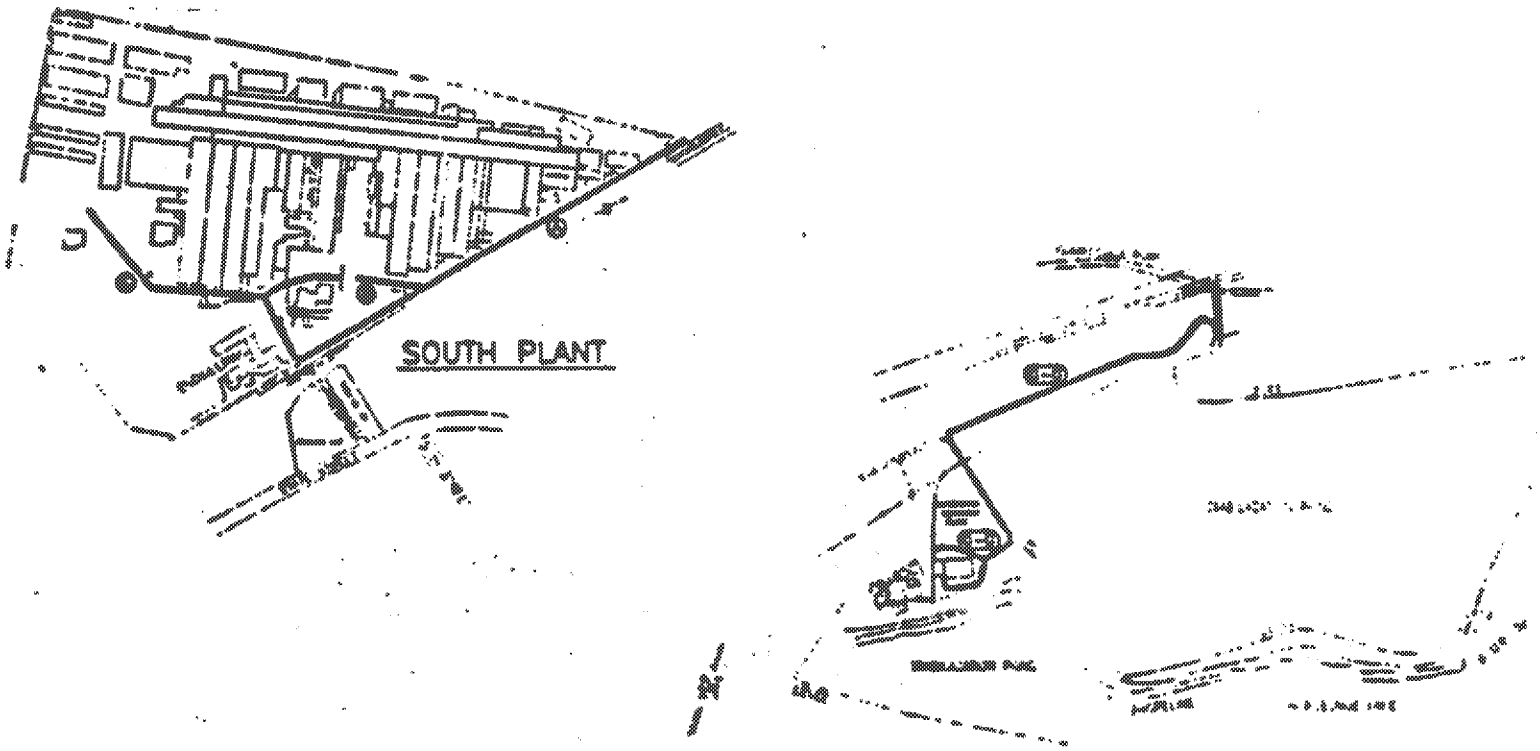
Permit Application #95010001

ATTACHMENT B (cont.)



Permit Application #95010001

ATTACHMENT B (cont.)



GRANITE CITY STEEL
GRANITE CITY, ILLINOIS

Woodward-Clyde Consultants

Sheet Network
South Plant & WWTP

Permit Application #95010001

ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE
EMISSIONS OF PM-10

- Historic roadway emissions of 428 tons/yr, minus future potential roadway emissions of 27 tons/yr, equals a resulting reduction in roadway emissions of 401 tons/yr

- Historic material handling emissions of 17 tons/yr minus future potential material handling emissions of 2 tons/yr, equals a resulting reduction in material handling emissions of 15 tons/yr.

- Emission reductions resulting from the sweeping of city streets = 52 tons/yr*

- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/yr*

Total reductions in the emissions of PM-10 as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 480 tons/yr

* These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

JRR:jar

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

July 1, 1985

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless susperseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.

2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any duly authorized agent of the Agency upon the presentation of credentials, at reasonable times:

   a. to enter the permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,

   b. to have access to and to copy any records required to be kept under the terms and conditions of this permit,

   c. to inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,

   d. to obtain and remove samples of any discharge or emissions of pollutants, and

   e. to enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities,

   c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations,

   d. does not take into consideration or attest to the structural stability of any units or parts of the project, and

e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Agency before the equipment covered by this permit is placed into operation.

b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.

7. The Agency may file a complaint with the Board for modification, suspension or revocation of a permit:

a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed, or

b. upon finding that any standard or special conditions have been violated, or

c. upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

CALCULATION SHEET

APPLICANT: Granite City Division
of National Steel Corporation
ID #: 119813AAI
APPLICATION/PERMIT #: 95010001
DATE RECEIVED: 1/3/95
ANALYST: Jim Ross
DATE PREPARED: 12/5/95
COUNTY: Madison County,
Granite City Township
NON-ATTAINMENT STATUS: Primary and Secondary non-attainment for TSP;
Moderate non-attainment for PM-10;
Moderate non-attainment for ozone (VOM & NOx);
Attainment for CO, SO2 and Lead.
FOS or LEGAL FLAG? Yes
SUBJECT TO NSPS/NESHAP? Yes

TYPE OF APPLICATION: Construction permit application for an increase in hot metal production and liquid steel production.

* **Refer to contents of permit and the many Memos and attachements in the application. Due to time concerns, this calcualtion sheet has not been updated since 12/5/95, however there have been many minor changes since that period. The Agency is in agreement with the information conatined in the application.**

No physical changes will be occurring as a result of this proposed increase. Current equipemtn has the capacity to operate at these increased rates. Is still considered a modification due to a relaxation of a federally enforceable limit on liquid steel input to the Continuous Casters (i.e., 6900 NTPD of liquid steel input).

No increase in production at Coke Plant or Coke By-Product Plant, since these operations are already operating at maximum capacities and any additional coke needed will be imported.

* Have been other contemporaneous increases in the last 5 years.

Public Hearing will be requested by the applicant. Based on concerns of similar hearing for Acme Steel permit, 031258AAI - 93040047, primarily concerns could be of lead emissions with smaller emphasis toward NOx emissions. Therefore, lead emissions increase associated with this project should undergo both toxic screening and computer

modeling. Toxic screening of Acme lead emissions showed a hazard rating of 1 and computer modeling showed a negligible impact to the ambient air quality standard for lead as a result of this lead increase. Refer to the hearing Responsiveness Summary and results of analysis for more information.

Strategy used for estimating emissions in order of priority.
1. Use actual stack test data or vendor guarantee, if available.
2. Use AP-42 factor, if 1 not available.
3. Use USEPA document EMISSION FACTORS FOR IRON AND STEEL SOURCES --
CRITERIA AND TOXIC POLLUTANTS, EPA-600/2-90-024, and the AIRS
document - which are near indentical, if 1 & 2 not available.
4. Use special emission factor or material balance, if appropriate.
5. Use engineering estimate as last resort.

BLAST FURNACE (BF) OPERATIONS

Process	Historic Actual Production (tons/yr)	Maximum Proposed Production (tons/yr)	Proposed Increase (tons/yr)	% Incr
Blast Furnaces	2,059,557	3,321,500	1,261,943	61.3

GCD has 2 BFs - A & B.
Production:
net tons hot metal per day
tons per day slag
8 taps per day

Subject to 212.445, 212.123 and conditions of permit 72080034 and 36.
20% opacity on casthouse.
iron spout baghouse - 0.010 gr/dscf and 10% opacity.
Each furnace has a hood capturing emissions from the tapping area and ducting these emissions to the casthouse baghouse. Hot metal is trasferred to cars in 6 runners with emissions captured by 6 hoods (one for each trasfer station) and ducted to iron spout baghouse.

Emissions Units
1. Casthouse Baghouse (furnace tapping) - captured emissions ducted to
baghouse, uncaptured emissions emitted through roof, other

openings, etc..
2. B.F. Charging
3. Material Handling (e.g., Iron Pellet Handling, Limestone Handling,
Coke Handling)
4. Slag Pits
5. Blast Heating Stoves
6. BFG Flares
7. Blast Furnace Slips
8. Iron Spouts - captured emissions controlled by iron spout
baghouse.
9. Iron Pellet Screen

Estimates of potential increases as a result of proposed project and associated production increase.
Potential increase in BF production is 1,261,943 tons/yr hot metal produced.

1. **Casthouse Baghouse.**
Per 7/93 stack test on baghouse stack, the following factors were determined:
Part = PM-10 = 0.0217 lbs/tons cast
SO2 = 0.2006 lbs/ton cast
NOx = 0.0144 lbs/ton cast
VOC = 0.0847 lbs/ton cast

Part = 0.0217 x 1,261,805 / 2000 = 13.69 tons/yr
PM-10 = 13.69 tons/yr

Part =116.86 tons/yr (per requested limit of 139.14 tons/yr)
PM-10 = 116.86 tons/yr (per requested limit of 139.14 tons/yr)
SO2 = 0.2006 x 1,261,943/2000 = 126.57 tons/yr
NOx = 0.0144 x 1,261,943/2000 = 9.08 tons/yr
VOC = 0.0847 x 1,261,943/2000 = 53.45 tons/yr

No factor for CO and Lead.

+ **UNCAPTURED EMISSIONS** - will use application supplied factors since capture efficiency and control efficiency are unknown (and needed to back calculate):
Part = PM-10 = 0.0155 lbs/tons cast
SO2 = 0.0104 lbs/ton cast
NOx = 0.00072 lbs/ton cast
VOC = 0.0050 lbs/ton cast

Part = 0.0155 x 1,261,943/2000 = 9.78 tons/yr
PM-10 = 0.0155 x 1,261,943/2000 = 9.78 tons/yr
SO2 = 0.0104 x 1,261,943/2000 = 6.56 tons/yr

NOx = 0.00072 x 1,261,943/2000 = 0.45 tons/yr
VOC = 0.0050 x 1,261,943/2000 = 3.15 tons/yr

2. B.F. Charging.
USEPA document gives factors for SOx, NO, and VOC at 0.0. AIRS gives Part factor of 0.0024 lbs/tons ore transferred. Will use data for hot metal produced since difference in results should be negligible.
Part = 0.0024 x 1,261,943 / 2000 = 1.51 tons/yr
PM-10 = 1.51 tons/yr

Note: application gives higher factor of 0.04675 and potential increase of 29.50 tons/yr.

3. Material Handling.
AIRS gives VOC factor of 0.0, no other factors available. PM and PM-10 emissions are accounted for in fugitive storage pile calculations.

4. Slag Pits.
No emission factors available in AP-42. AIRS gives factors for "Blast Furnace Slag" on page 94, 3-03-008-04 through 3-03-008-09, which show SO2 at 0.0 for slag handling related operations. Will take SO2 from slag as being accounted for in casthouse SO2 emission factor.
Per application:
Part = 0.41 tons/yr
PM-10 = 0.41 tons/yr

5 & 6. Blast heating stoves and Blast furnace gas flares.
Accounted for in fuel combustion emissions.

7. Blast Furnace Slips.
GCD indicates that although slips do occur, they are "intended" slips with no emissions in excess of those of regular charging, which are accounted for previously.

8. Iron spouts - controlled by iron spout baghouse.
Per 7/93 stack test, the following factors were determined:
SO2 = 0.0073 lbs/ton cast
Part = 0.0217 x 1,261,805 / 2000 = 13.69 tons/yr
PM-10 = 13.69 tons/yr
Part = 28.55 tons/yr (per requested limit of 139.14 tons/yr)
PM-10 = 28.55 tons/yr (per requested limit of 139.14 tons/yr)
SO2 = 0.0073 x 1,261,943/2000 = 4.61 tons/yr

9. Iron Pellet Screen.

BASIC OXYGEN FURNACE (BOF) SHOP

GCD has 2 BOFs (A & B) controlled by an Electrostatic Precipitator (ESPs).
Applicable Rules:

* 212.446 & 212.321 - process rate weight equation - E=A(P)expB, where E=lbs/hr, A=2.54, P=pwr, B=0.534 for pwr<450 tons/hr, for pwr>=450 tons/hr - A=24.6, B=0.16.
* 212.458(b)(23) - 68.5 lbs PM-10/hr from total of all BOF processes.
* 212.123 - 30% opacity

Process	Historic Actual Production (tons/yr)	Proposed Production (tons/yr)	Increase (tons/yr)	% Incr
BOFs	2,413,406	3,759,500	1,346,094	55.8

increase = 1,346,094 tons/yr

Emissions Units

1. BOF ESP stack (charge, blow, tap)
2. BOF roof monitor - uncaptured
3. Desulfurization (in torpedo cars)
4. Reladling - Hot Metal Transfer
5. BOF Additive System (i.e., fluxes) with Baghouse, aka - BOF hopper
   baghouse
6. Flux conveyor & transfer pits, bin floor)emissions maybe accounted
7. Hot metal charging ladle slag skimmer)for in BOF roof monitor

Estimates of potential increases as a result of proposed prodkuction increase.
Potential increase in BOF production is 1,346,094 tons/yr liquid steel.

1. BOF ESP Stack (charge, blow, tap)

Factors based on calculations from data of 8/93 stack test of BOF ESP exhaust:
PM and PM-10 = 0.0996 lbs/ton produced
NOx = 0.0389 lbs/ton produced
CO = 8.993 lbs/ton produced
Note: From AP-42, uncontrolled CO factor = 138 lbs/ton. GCD has an open hood capture system where CO is burned (refer to 40 CFR Part 60 / VOL. 48, No. 14 / Thursday, January 20, 1983, page 2661). Will use test derived factor with the intent of requiring actual testing in the event of

permit issuance. Could use .67 as PM-10 fraction since no particle size data is available for ESP's and .67 is provided in AP-42 for a scrubber, hence giving a conservative estimate, however GCD assumes PM=PM-10.

Part = 1,346,094 x 0.0996/2000 = 67 tons/yr.
PM-10 = 67 tons/yr
These are the max actual increases, however GCD is requesting limit above max actual hence potential increase is determined below:
Potential emissions based on requested limit of 300.03 tons/yr =
Historic actual of 2,413,406 x 0.0996/2000 = $\frac{120.19}{179.84}$ =
tons/yr
Part = 179.84 tons/yr(as per requested limit)
PM-10 = 179.84 tons/yr (as per requested limit)
CO = 8.993 x 1,346,094/2000 = 6,052.83 tons/yr
NOx = 0.0389 x 1,346,094/2000 = 26.18 tons/yr
SO2 = no factor
The following use AIRS factors:
VOC = 0.001 x 1,346,094/2000 = 0.67 tons/yr
Lead = 0.2 x 1,346,094 x (1- .995) / 2000 = 0.673 tons/yr may be a problem **********

Notes on Lead emission estimates:
- no factor for lead emissions in AP-42 or EMISSION FACTORS FOR IRON AND STEEL SOURCES -- CRITERIA AND TOXIC POLLUTANTS, EPA-600/2-90-024, although lead is a criteria pollutant.
- lead is not mentioned in the above referenced USEPA document as one of the heavy metals emitted.
- only factor for lead is found in AIRS document (which is not recommended to be used in the above referenced USEPA document from which lead appears to be purposely excluded)
- AIRS gives uncontrolled lead factor of 0.2 lbs lead/ton produced for BOF open hood Stack.
- per conversation with Dave Zibble of Acme Steel, lead emissions would mostly occur during the blow segment of BOF operation since the reaction which occurs could possibly cause lead to be liberated. He does not expect lead emissions during the charge or tap. I have no reason to doubt this since no factor for lead exists for these operations.
- process lead emissions during the blow are accounted for, as seen above, using the the AIRS factor and reducing this by and ESP efficiency of 99.5 % as is indicated in AP-42.

UNCAPTURED LEAD AT THE BOF:
An estimate of fugitive lead can be made as follows;
- note that no factor exists for lead at the BOF monitor so only way to estimate appears to be to back calculate using the questionable AIRS BOF stack emission factor of 0.2.

- lead occurs during the blow while furnace is straight up and capture efficiency of the hoods is at a maximum.
- assume primary hood captures 90%.
- assume building provides 90% control (lead is a heavy metal).

Gives fugitive lead estimate of;
(0.2)(1-.9)(1-.9)(1,346,094)/2000= 1.35 tons/yr.
Did not use this for reasons stated above.

2. BOF roof monitor

Using AP-42 Uncontrolled factors at source, reducing by assumed capture efficiencies, assuming various future increases in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.

Annual production incr. reduced to 3,580,000 tons steel/yr.
Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced.
In this case netting exercise credit needed drops to;
(3,580,000/3,759,000)(266) = 253.3 tons steel
3,321,500 iron goes to 3,162,930
Uncontrolled, at source, PM emission factors per AP-42 and AIRS:

* charge = 0.6 lbs PM/ton hot metal at BOF
* refine = 28.5 lbs PM/ton steel at BOF
* tap = 0.92 lbs PM/ton steel at BOF

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,162,930, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	41.4	9.45	0.03431	90
refine	230.4	52.61	0.19095	99
tap	74.4	16.98	0.06164	90
total:	346.2	79.04	0.2869	
Future Potential				
charge	31.8	7.26	0.017765	95

refine	34.2	7.80	0.019095	99.9
tap*	52.4	11.97	0.029279	95
total:	118.4	27.03	0.066139	

CREDIT = 227.8
Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- These appear to be the best factors available for each individual process due to fact that can directly correlate the AP-42 factors to test results;
    i. charging and tapping factor are taken directly from test results which have an emission factor reliability rating of A (although appears that uncaptured emissions are not accounted for in these factors since they appear to be a direct measurement of captured emissions);
    ii. refining factor appears to be nearly a weighted average of 3 tests of various emission factor reliability ratings (24.2 rating=A, 37 rating=B, and 30 rating=D).
- Emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- Estimates of charging and tapping hood capture efficiencies are consistent with historical assumptions and seem reasonable.
- Also consistent with historical hood capture efficiencies assumed for Acme.
- Allows insight into emissions from each individual process.

Cons;

- Have to estimate hood capture efficiencies.
- **Difficult to quantify and justify the percent increase in capture for hoods to the improvements at the BOF.**
- Higher hood capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- Assumed 99% historic hood capture efficiency for refining when indications are that have previously assume 99.9%.

3 Desulfurization
Controlled by baghouse. Using AP-42 factor gives
Part = 0.009 x 1,346,094 / 2000 = 6.06 tons/yr.
PM-10 = 0.74 x 6.06 = 4.48 tons/yr.
Part = 67.12 tons/yr.(per requested limit)
PM-10 = 67.12 tons/yr.(per reuested limit)

4. Reladling - Hot Metal Transfer
Application gives increase at:
PM = 0.31 tons/yr
PM-10 = 0.31 tons/yr
Using AP-42 factor for PM of "at source":
Note: These may be ducted to a baghouse - need to find out.
Part = 0.19 x 1,346,094 / 2000 = 128.13 tons/yr
PM-10 = 0.19 x 1,346,094 / 2000 = 128.13 tons/yr
Will not count these emissions since already accounted for in the above monitor emisssions.
For VOC, using AIRS and assuming same units as AP-42, i.e., lbs/ton hot metal instead of tons processed as indicated in AIRS, which seems to be in error.
VOC = 0.001 x 1,346,094 / 2000 = 0.67 tons/yr
no other factors

5. BOF Additive System (i.e., fluxes) with Baghouse - aka BOF hopper baghouse.
NO NUMBERS GIVEN
Part = 0.75 tons/yr (per requested limit)
PM-10 = 0.75 tons/yr (per requested limit)
Apparently are acconted for in other process emission estimates.

6. Flux conveyor and transfer pits, bin floor
Per application, potential increase =
PM = 3.43 tons/yr (per requested limit)
PM-10 = 3.43 tons/yr (per requested limit)
Will not count in netting exercise since emissions should be accounted for in BOF roof monitor.

7. Hot metal charging ladle slag skimmer

Per application, potential increase =
PM = 9.74 tons/yr(per requested limit)
PM-10 = 9.74 tons/yr (per requested limit)
Will not count in netting exercise since emissions should be accounted for in BOF roof monitor.
AIRS has factor for VOC only.
VOC = 0.002 x 1,346,094 / 2000 = 1.35 tons/yr.

BOF TOTAL
Part = tons/yr.
PM-10 = tons/yr
SO2 = 0.0 tons/yr
NOx = 26.18 tons/yr
VOC = 2.69 tons/yr
CO = 6,052.83 tons/yr
Lead = 2.02 or 0.67 tons/yr

FUEL COMBUSTION EMISSION UNITS

Plantwide Fuel Usage (i.e., Boilers, BF stoves, BF Flares, underfire Coke Ovens, Reheat Furnaces)

	Historic Actual (mmft3/yr)	Maximum Proposed (mmft3/yr)	Proposed Increase (mmft3/yr)
Nat Gas (total)	1,145	1,145	0
BFG	121,039	185,030	63,991
COG	no increase		
#6 Oil & Waste Oil	16,000 gallons	365,000 gallons	349,000

Estimates of potential increases as a result of proposed project and associated production increase.

1. 10 boilers (#'s 1 - 10) firing natural gas, coke oven gas (COG), Blast Furnace Gas (BFG), waste oil, and #6 oil; 60 mmbtu/hr each. Total = 600 mmbtu/hr.

2. 2 boilers (#'s 11 - 12)
225 mmbtu/hr each. Total = 450 mmbtu/hr.

3. Slab Reheat Furnaces 1-3.

rated capacity of 321.8 mmbtu/hr each. Total = 965.4 mmbtu/hr.

4. Slab Reheat Furnace 4.
495 mmbtu/hr

5. Blast Furnace Stoves A & B.
A = 399 mmbtu/hr, B = 457.2 mmbtu/hr.
Total = 856.2 mmbtu/hr.

6. BFG Flares

7. Ladle Preheaters (5 heaters).
20 mmbtu/hr each.
Total = 100 mmbtu/hr.

Subject to:
212.206 PM when firing #6 oil
214.304 SO2 firing #6 oil

Emission Factors used;

BFG:

AIRS factors, SCC 1-02-007-04.
Note that AIRS factor requires %S by weight to determine SO2 emissions factor. BFG factor per AIRS is 950(S) lbs SO2/mmft3. At BFG=83 btu/ft3 and S=.00725 (per GCS test data for S), gives 6.89 lbs SO2/mmft3. Application provides the following factors:

BFG:

Part = 2.9 lbs/mmft3
PM-10 = 2.9 lbs/mmft3
SO2 = 6.65 lbs/mmft3
NOx = 5.28 lbs/mmft3
VOC = 0.0 lbs/mmft3
CO = 13.7 lbs/mmft3

Oil:

- fuel oil #
Part = 10.8 lbs/1000 gal
PM-10 = 9.72 lbs/1000 gal
SO2 = 141.3 lbs/1000 gal
NOx = 55 lbs/1000 gal
VOC = 0.28 lbs/1000 gal
CO = 5.0 lbs/1000 gal
Lead = 0.016 lbs/1000 gal

Natural Gas:

Part = lbs/
PM-10 = lbs/

SO2 = lbs/
NOx (Boilers) = 306 lbs/ mmft3
NOx (Reheat Furnaces) = 0.393 lbs/mmbtu
VOC = lbs/
CO = lbs/
Lead = lbs/

IF BASE YEAR THROUGHPUT OF NG IS EQUAL TO PROPOSED USAGE, WHY IS THERE AN INCREASE IN NOX FROM NG INDICATED??????????? FIRED AT DIFFERENT UNITS?

CONTINUOUS CASTERS 1 & 2

Subject to 212.450.

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy):
Steel stirred with Argon gas for uniform temperature.
max=avg operating time = hrs/yr.
Process Weight Rate = lbs/hr liquid steel from BOFs
= tons/hr
= tons/yr liquid steel from BOFs.
Product = lbs/hr liquid steel for casting
= tons/yr liquid steel for casting
Waste = lbs/hr slag
= tons/yr slag
PM = (.009)( )(1/2000) = tons/yr
PM-10 = (.0067 lbs/ton)( )(1/2000) = tons/yr
Subject to 212.321. Allowable = $2.54(200)^{0.534}$ = lbs/hr.
Max actual = ( )(0.009) = lbs/hr.

2. Deslagging Station and Material HS.

3. Caster Molds.
NOx = ( )(.14) = lbs/hr = tons/yr
CO = ( )(.035) = lbs/hr = tons/yr

4. Continuous Casters #'s 1 & 2.
Steel flows through the tundish molds in a slab shape. The emerging slab is cooled with water sprays, turned horizontal and straightened.
max=avg operating time = 24 x 7 x 52 = 8736 or 8760 hrs/yr.
Process Weight Rate = lbs/hr liquid steel from LMF
= tons/yr liquid steel from LMF
Product = lbs/hr slabs

= tons/yr slabs
Waste = lbs/hr scale and lbs/hr cutoffs (recycled)
Application estimates negligible emissions.
Using AIRS factor for NOx:
NOx = (0.05)( ) / 2000 = tons/yr

5. **Casters Spray Chambers.**

6. **Slab Cut-off.**

7. **Slab ripping**

HOT STRIP MILL & COLD ROLLING MILL

GCD states no increase in process rate at these operations and hence no increse in emissions.

COKE PLANT & COKE BY-PRODUCT PLANT

GCD states no increase in process rate at these operations and hence no increse in emissions.

FUGITIVES

Estimates of potential increases as a result of proposed project and associated production increase.

1. Unpaved Roads
2. Paved Roads
3. Material Handling
4. Unpaved parking lots
5. Paved parking lots
6. Storage pile emissions

OTHER EMISSIONS UNITS
- Galvanizing, Painting, and Heat Treating Operations.
- Pickling lines. Use HCl acid and have fume scrubbers for control. AIRS gives factors of 0.0 for SOx, NOx, and VOC.

CONTEMPORANEOUS PROJECTS - EMISSION CREDITS

* Additional road dust control
* Shutdown of blooming mill
* Shutdown of batch annealing
* Installation of #8 galvanizing line
* Removal of B.F. slag spout hood
* # caster production begins

* Shutdown of ingot teeming
* NESHAP control for Coke By-Products Plant

NEW SOURCE REVIEW

Nonattainment - Part 203
NOx and VOM increases do not exceed 40 tons/yr, hence not a major modification.
Particulate Matter and PM-10 can use creditable decreases such that the net emissions increase is < 25 tons and 15 tons, respectively, and hence not subject to PSD or NSR. This is different from the procedure for NOx and VOM pursuant to Title I special rules (i.e., 182(c)(6) and (8)).

PSD - 52.21
PSD review is required for significant increases of CO and SO2.

Increase in lead emissions is not significant.

SIGNIFICANCE LEVELS PER PART 203 and PSD:
Part = 25 tons/yr - PSD only
PM-10 = 15 tons/yr
SO2 = 40 tons/yr
NOx = 40 tons/yr
VOC = 40 tons/yr
CO = 100 tons/yr
Lead = 0.6 tons/yr

FINAL ACTION: Grant

EIS CODING PERFORMED: No EIS coding performed.

G-CALC.DOC

Permit File 95050011 1998 Ann 2
R008455

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
2200 Churchill Road, Springfield, IL 62794-9276

EPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

MEMORANDUM

RECEIVED
JAN 25 1996
IEPA-DAPC-SPFLD

DATE: January 24, 1996

TO: Chris Romaine

FROM: James O'Brien **BY:** Les Morrow

SUBJECT: **Comparison of the Odor Threshold Values to Health Effect Levels for Naphthalene**

We have prepared the following response to your request for a comparison of the odor threshold values and the air concentrations of naphthalene expected to be protective of human health. The objective of this comparison is to establish whether detection of the odor of naphthalene is above or below the health-based "safe" concentration.

This comparison is complicated by the extreme variability of the odor data. The database for odor thresholds is generally derived from panels of volunteer or minimally compensated "sniffers". It is not uncommon for the sniffer panels to evaluate a series of chemicals possibly leading to a condition known as olfactory fatigue which can affect the results. Sniffer panels are usually very small groups and the individual results are often quite variable as one would expect from a cross section of adult human subjects. In the past, odorant concentrations were sometimes based upon theoretical air concentrations rather than from analytical determinations, providing another source of variability.

Still another variable in the odor data is the inconsistency of what is reported as an odor threshold. Various endpoints are possible when evaluating odors. Odor perception levels are those concentrations to which a panelist is barely certain that an odor has been detected while odor recognition levels are those which the panelist can detect and identify the specific odor. Either of these values can be reported as an odor threshold. Furthermore, some results have been reported as an average for the entire panel while others have been reported as the result of the most sensitive panelist. A summary of the readily available odor threshold values for naphthalene is presented in the attached table.

The remaining component of this comparison is the health-based exposure criterion. OCS commonly calculates Screening Level Ambient Concentrations-Annual (SLAC-A) and -Maximum (SLAC-M). The BOA uses the SLAC-A to evaluate air conditions due to continuous emissions and the SLAC-M to evaluate infrequent, relatively high emissions. OCS has developed a procedure by which it derives these criteria. This procedure includes a hierarchical search of the toxicology database of a chemical to determine the availability of specific data types; in their

absence, the next datum type is sought and so on until a usable value is obtained. This progression corresponds to what is judged to be the preferred order of data quality/usability for this type of analysis.

Based upon the information you shared over the telephone, it is our conclusion that your case involves a chronic or longterm exposure potential. We have reviewed the database for naphthalene and have identified several toxicity values upon which SLAC-As can be calculated. These values are presented in the attached table in their order of preference.

Naphthalene Health-based Criteria

Criterion Type	Value
SLAC-A (TLV)	0.124 mg/m^3
SLAC-A (Irritating Concentration)	0.75 mg/m^3
MRL (Minimal Risk Level-Inhalation from ATSDR)	0.011 mg/m^3

Odor Data from Open Literature

Odor Description	Value
Odor Low (Ruth)	1.50 mg/m^3
Odor High (Ruth)	125.0 mg/m^3
Irritating Concentration (Ruth)	75.0 mg/m^3
Odor Threshold - Air (ATSDR)	0.44 mg/m^3
Odor Threshold (Verschueren)	0.004 mg/m^3
Odor Detection (ASTM)	36.0 mg/m^3

In our typical SLAC criteria setting process, we would utilize the lower of the two health-based criteria values which is the TLV-based criterion of 0.124 mg/m^3. We would next check to assure ourselves that a person would not smell naphthalene at this level or less by comparing it to the odor threshold values. This comparison suggests that it is possible, due to some of the extremely low odor threshold values, that odors might be detected below the "safe" level. However, more specific to the situation with which you are concerned, our conclusion is that if one smells naphthalene, an unhealthy atmosphere is likely.

8567\f:\naphth.mem

R008457

EPA-DIVISION OF RECORDS MANAGEMENT
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23
AUG 3-2-2013

REVIEWER JRM

M E M O R A N D U M

DATE: October 20, 1995

TO: John Justice ID 119 813 AAI

FROM: Jeff Benbenek

SUBJECT: NATIONAL STEEL CORP. - BOF Roof Monitor Emissions

As you recall, during the meeting with representatives of NSC on October 5, 1995 concerning their permit application for a production increase, Jim Ross provided them with several options for calculating roof monitor emissions of PM-10 from the BOF. Based on the meeting I attended on October 17th and a telephone conversation I had with Jim on October 18, NSC is planning to utilize option 1 in their permit application. I have attached a copy of this option to this memo. Note that this calculation results in 227 tons/year of "credit" from the roof monitor for NSC to use in the netting exercise for PM-10 in the application. Also note that this calculation assumes a weight fraction of 67% of PM-10 in TSP from uncaptured BOF charging, refining and tapping. Therefore, the emission rates for total suspended particulates would be, basically, one and one-half times the annual and hourly rates shown in the table. One other comment is that the hourly rate was determined by multiplying the annual rate of 2000 to convert to pounds and dividing it by the maximum number of hours in a year (8760).

The BOF steelmaking process is subject to the requirements of 35 IAC 212.446(a) of the Regulations. That Regulation refers to the allowable emission rate specified by 35 IAC 212.321 or 212.322, whichever is applicable. The former applies to the BOF at NSC. It is clearly stated in this Regulation that emissions from basic oxygen furnaces during the entire cycle not exceed the allowable emission rate. Utilizing the emission factors presented in the attached option and the assumed hood capture efficiencies would result in a determination that the BOF has never been in compliance with the subject Regulations. I can illustrate this as follows, using the process information obtained during the most recent stack tests at the BOF, which were done in August, 1993:

Average hot metal charged - 189.8 tons/cycle
Average steel produced ---- 232.4 tons/cycle

(Note: This is the info from the August 27, 1995 tests)

The particulate matter emissions from the BOF roof would be:

Charging	(189.8)(0.6)(100 - 0.90)	= 11.4 lbs/cycle
Refining	(232.4)(28.5)(100 - 0.99)	= 66.2 lbs/cycle
Tapping	(232.4)(0.92)(100 - 0.99)	= 21.4 lbs/cycle
	TOTAL	99.0 lbs/cycle

The August 27 test results showed that the average particulate emission rate from the stack was 23.4 lbs/cycle. This was the lowest tested emission rate ever reported to the Agency by NSC. In total, then, the particulate emissions on the average from the steelmaking cycles tested were 122.4 lbs/cycle, using the estimation methods presented in the option.

The average process weight rate was 268.36 tons/cycle. The allowable emission rate per 35 IAC 212.321 was 50.32 lbs/cycle. The above total is over twice the allowable. The roof emissions, alone, were in excess of it is you accept the estimation methods. The historic actual emissions calculation from the option indicates that the roof monitor emissions of this magnitude have occurred on the average each and every steelmaking cycle. Therefore, no steelmaking cycle at NSC could ever have complied with 35 IAC 212.446(a).

JJB:pbo/2890A

cc: DLC - Julie Armitage
cc: BOA - Chris Romaine
cc: BOA - Jim Ross

RECEIVED
OCT 25 1995
IEPA - OAPC - SPRJD

BOF CREDIT OPTIONS -10/4/95

OPTION 1:

Premise: Using AP-42 Uncontrolled factors at source, reducing by assumed capture efficiencies, assuming various future increases in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.

Annual production incr. reduced to 3,580,000 tons steel/yr. Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced. In this case netting exercise credit needed drops to; (3,580,000/3,759,000)(266) = **253.3** tons

Uncontrolled, at source, PM emission factors per AP-42 and AIRS:

- charge = 0.6 lbs PM/ton hot metal at BOF
- refine = 28.5 lbs PM/ton steel at BOF
- tap = 0.92 lbs PM/ton steel at BOF

0.67 weight fraction of PM-10, to convert to below.

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	41.4	9.45	0.03431	90
refine	230.4	52.61	0.19095	99
tap	74.4	16.98	0.06164	90
total:	346.2	79.04	0.2869	
Future Potential				
charge	33.4	7.62	0.01865	95
refine	34.2	7.80	0.019095	99.9
tap*	52.4	11.97	0.029279	95
total:	119.9	27.47	0.067024	

CREDIT = 227.0

Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and

operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- These appear to be the best factors available for each individual process due to fact that can directly correlate the AP-42 factors to test results;
    i. charging and tapping factor are taken directly from test results which have an emission factor reliability rating of A (although appears that uncaptured emissions are not accounted for in these factors since they appear to be a direct measurement of captured emissions);
    ii. refining factor appears to be nearly a weighted average of 3 tests of various emission factor reliability ratings (24.2 rating=A, 37 rating=B, and 30 rating=D).
- Emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- Estimates of charging and tapping hood capture efficiencies are consistent with historical assumptions and seem reasonable.
- Also consistent with historical hood capture efficiencies assumed for Acme.
- Allows insight into emissions from each individual process.

Cons;
- Have to estimate hood capture efficiencies.
- **Difficult to quantify and justify the percent increase in capture for hoods to the improvements at the BOF.**
- Higher hood capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- Assumed 99% historic hood capture efficiency for refining when indications are that have previously assume 99.9%.

R008461

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REVIEWER JRM

Illinois Environmental Protection Agency · 2009 Mall Street, Collinsville, Illinois 62234

Collinsville Regional Office
Telephone: (618) 346-5120
Fax: (618) 346-5155

DATE: 10/23/95

RECEIVED
OCT 2 6 1995
[illegible]

TO: Jim Ross

FROM: Jeff Benbenek

MESSAGE: re. Granite City Division

This is the memo I told you I was going to write.

NUMBER OF PAGES: 5
(Including this cover page)

To Recipient: If all pages are not received, please contact (618) 346-5120.

TEP:cas/5

M E M O R A N D U M

DATE: October 20, 1995

TO: John Justice ID 119 813 AAI

FROM: Jeff Benbenek

SUBJECT: NATIONAL STEEL CORP. - BOF Roof Monitor Emissions

As you recall, during the meeting with representatives of NSC on October 5, 1995 concerning their permit application for a production increase, Jim Ross provided them with several options for calculating roof monitor emissions of PM-10 from the BOF. Based on the meeting I attended on October 17th and a telephone conversation I had with Jim on October 18, NSC is planning to utilize option 1 in their permit application. I have attached a copy of this option to this memo. Note that this calculation results in 227 tons/year of "credit" from the roof monitor for NSC to use in the netting exercise for PM-10 in the application. Also note that this calculation assumes a weight fraction of 67% of PM-10 in TSP from uncaptured BOF charging, refining and tapping. Therefore, the emission rates for total suspended particulates would be, basically, one and one-half times the annual and hourly rates shown in the table. One other comment is that the hourly rate was determined by multiplying the annual rate of 2000 to convert to pounds and dividing it by the maximum number of hours in a year (8760).

The BOF steelmaking process is subject to the requirements of 35 IAC 212.446(a) of the Regulations. That Regulation refers to the allowable emission rate specified by 35 IAC 212.321 or 212.322, whichever is applicable. The former applies to the BOF at NSC. It is clearly stated in this Regulation that emissions from basic oxygen furnaces during the entire cycle not exceed the allowable emission rate. Utilizing the emission factors presented in the attached option and the assumed hood capture efficiencies would result in a determination that the BOF has never been in compliance with the subject Regulations. I can illustrate this as follows, using the process information obtained during the most recent stack tests at the BOF, which were done in August, 1993:

Average hot metal charged - 189.8 tons/cycle
Average steel produced ---- 232.4 tons/cycle

(Note: This is the info from the August 27, 1995 tests)

The particulate matter emissions from the BOF roof would be:

Charging	(189.8)(0.6)(100 - 0.90)	= 11.4 lbs/cycle
Refining	(232.4)(28.5)(100 - 0.99)	= 66.2 lbs/cycle
Tapping	(232.4)(0.92)(100 - 0.99)	= 21.4 lbs/cycle
	TOTAL	99.0 lbs/cycle

The August 27 test results showed that the average particulate emission rate from the stack was 23.4 lbs/cycle. This was the lowest tested emission rate ever reported to the Agency by NSC. In total, then, the particulate emissions on the avcrage from the steelmaking cycles tested were 122.4 lbs/cycle, using the estimation methods presented in the option.

The average process weight rate was 268.36 tons/cycle. The allowable emission rate per 35 IAC 212.321 was 50.32 lbs/cycle. The above total is over twice the allowable. The roof emissions, alone, were in excess of it is you accept the estimation methods. The historic actual emissions calculation from the option indicates that the roof monitor emissions of this magnitude have occurred on the average each and every steelmaking cycle. Therefore, no steelmaking cycle at NSC could ever have complied with 35 IAC 212.446(a).

JJB:pbo/2890A

cc: DLC - Julie Armitage
cc: BOA - Chris Romaine
cc: BOA - Jim Ross

BOF CREDIT OPTIONS -10/4/95

OPTION 1:
***Premise:** Using AP-42 Uncontrolled factors at source, reducing by assumed capture efficiencies, assuming various future increases in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.*

Annual production incr. reduced to 3,580,000 tons steel/yr. Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced. In this case netting exercise credit needed drops to: (3,580,000/3,759,000)(260) = **253.3** tons

Uncontrolled, at source, PM emission factors per AP-42 and AIRS:

- charge = 0.6 lbs PM/ton hot metal at BOF
- refine = 28.5 lbs PM/ton steel at BOF
- tap = 0.92 lbs PM/ton steel at BOF

0.67 weight fraction of PM-10, to convert to below.

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	41.4	9.45	0.03431	90
refine	230.4	52.61	0.19095	99
tap	74.4	16.99	0.06164	90
total:	346.2	79.04	0.2869	
Future Potential				
charge	33.4	7.62	0.01865	95
refine	34.2	7.80	0.019095	99.9
tap*	52.4	11.97	0.029279	95
total:	119.9	27.47	0.067024	

CREDIT = 227.0
Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and

operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- These appear to be the best factors available for each individual process due to fact that can directly correlate the AP-42 factors to test results;
    i. charging and tapping factor are taken directly from test results which have an emission factor reliability rating of A (although appears that uncaptured emissions are not accounted for in these factors since they appear to be a direct measurement of captured emissions);
    ii. refining factor appears to be nearly a weighted average of 3 tests of various emission factor reliability ratings (24.2 rating=A, 37 rating=B, and 30 rating=D).
- Emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- Estimates of charging and tapping hood capture efficiencies are consistent with historical assumptions and seem reasonable.
- Also consistent with historical hood capture efficiencies assumed for Acme.
- Allows insight into emissions from each individual process.

Cons;
- Have to estimate hood capture efficiencies.
- Difficult to quantify and justify the percent increase in capture for hoods to the improvements at the BOF.
- Higher hood capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- Assumed 99% historic hood capture efficiency for refining when indications are that have previously assume 99.9%.

Element 3
Require Lower Levels of Future Emission from Other Operations

Another variable in Granite City Steel's future emissions is the emission rates assumed for operations other than the BOF.

Option 1 - Limit BOF ESP emissions rate
Granite City Steel has proposed permitting of the BOF ESP at the full 68.5 lb/hour emission rate accomodated in the current attainment demonstration. A limit of 63.9 lb PM10/hour would trim 20 tons off the project's emissions.

Comments - This rate was developed for the ESP prior to the addition of the sixth section. It would be reasonable to now require Granite City Steel to commit to some lowering of this emission rate. Ideally this would be accomplished by setting a lower hourly emission limit, e.g., a limit of 63.9 lb PM10/hour. Based on the 1993 test, the ESP should have no trouble meeting this rate or even lower rates. Another important benefit of this change would be an attainment demonstration that would accomodate a higher emission rate from the roof monitor.

At a minimum, a supplementary limit should be set for the ESP relating allowed emissions to production, e.g., 0.14 lb PM10/ton steel produced. This would reduce the increase associated with the expansion assuming an annual limit will also be set on steel production. It would also assure that the ESPI's permissable emissions are related to the level of production.

Option 2
The emissions from the various operations controlled by baghouses are based on a future emission rate from the baghouses of 0.0083 grain/scf. This emission rate is higher than the tested performance of the baghouses so as to account for normal variability in the operation of the units if they were tested.

Comment - The performance of the baghouses is not readily altered like the BOF ESP. The current approach provides a neccessary margin of safety for the actual performance of the baghouses.

Option 3 - Emission Rates as Proposed by Granite City Steel
The Agency would accept the emission rates proposed by Granite City Steel.

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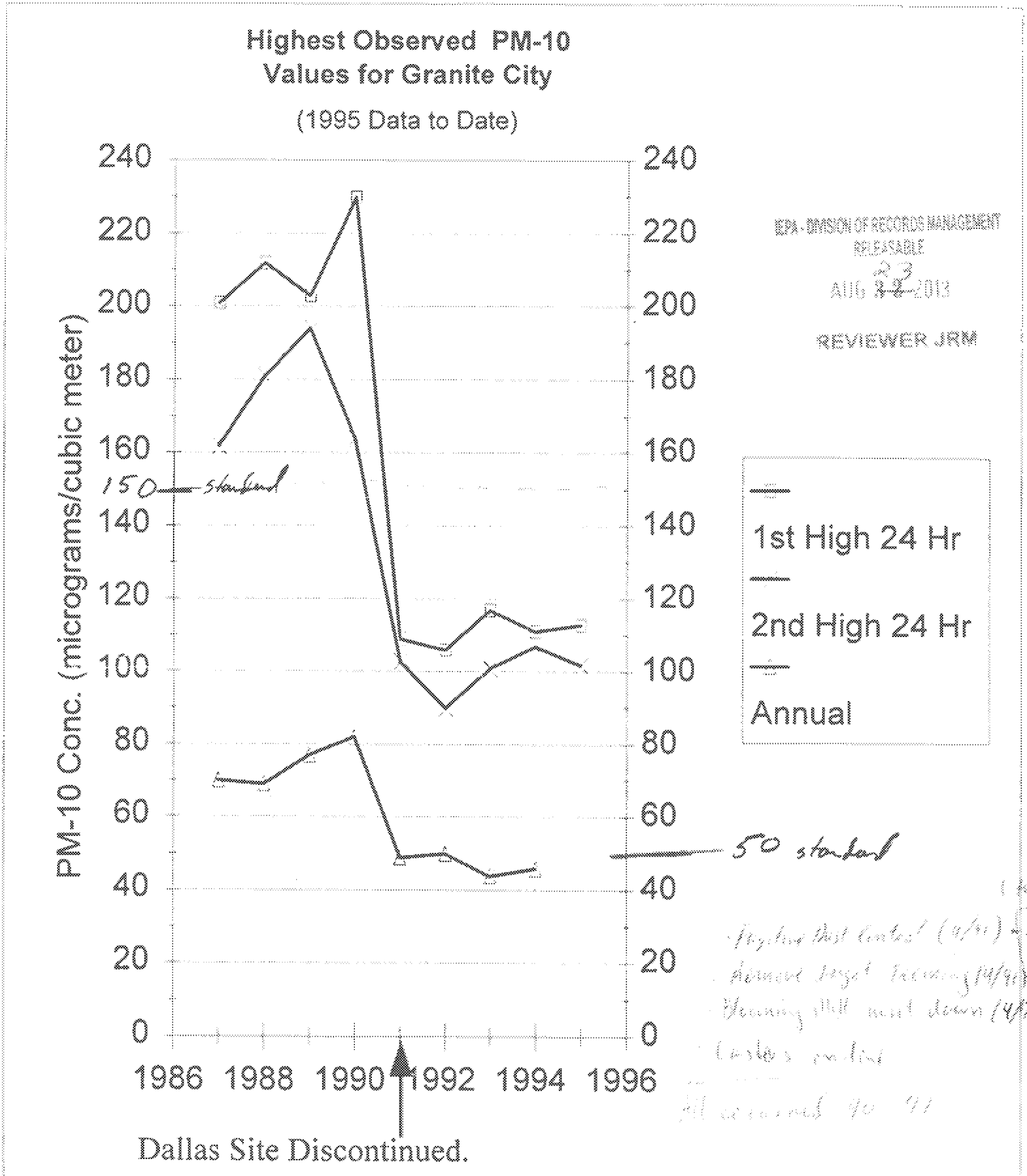
MONITORING DATA

R008467



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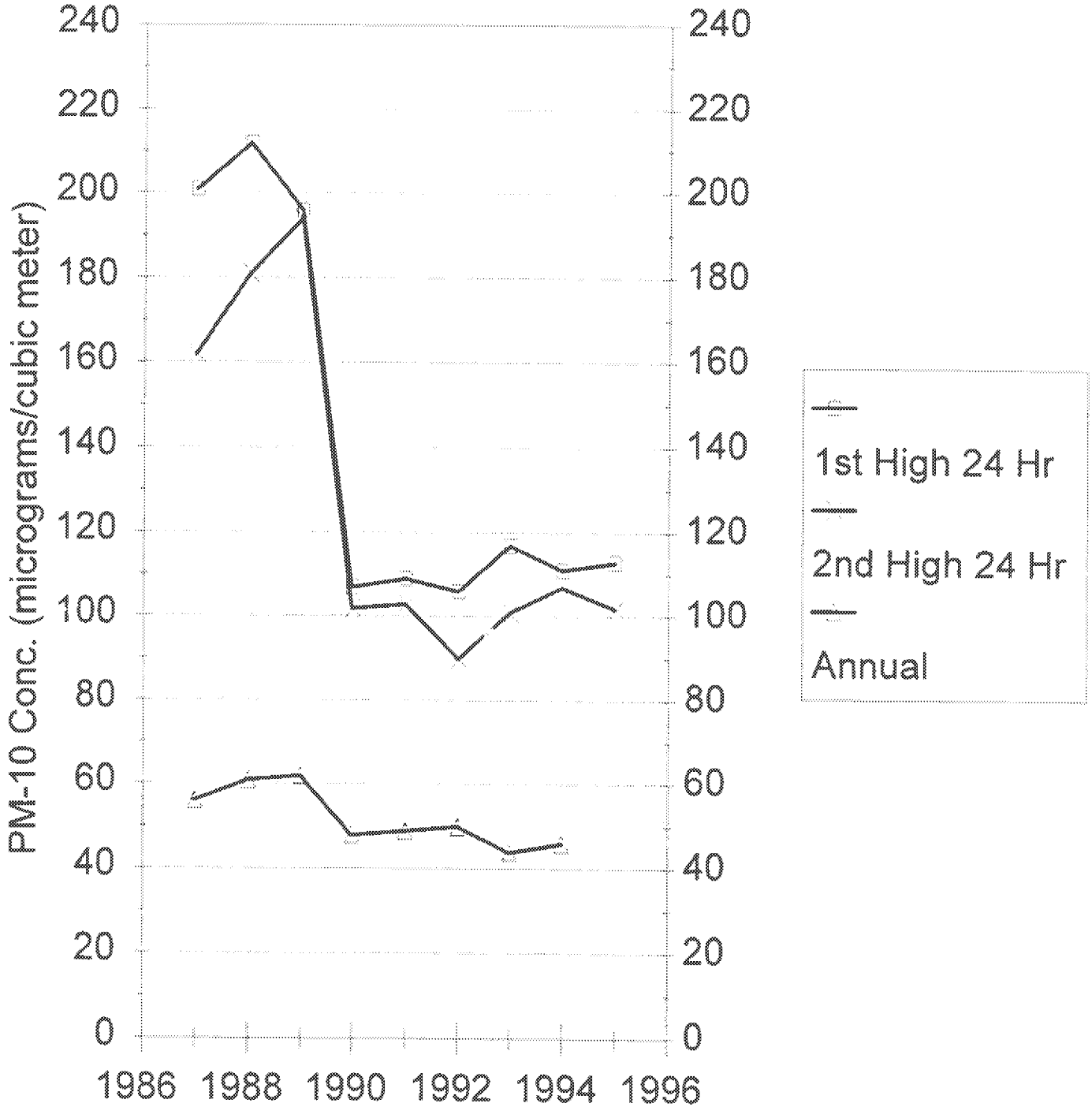
REVIEWER JRM

- GCS is by far the highest contributer of PM-10 to these monitor

Highest Observed PM-10 Values for Granite City

(1995 Data to Date)



Dallas Site Excluded.

BOF INCREASE IN CAPTURE EFFICIENCY JUSTIFICATION

Increase in capture efficiency will result from a combination of the following:

1. Allowable opacity from BOF roof is being reduced from 30% to 20%.

2. Added 4th section to ESP which increased control capacity of ESP system and will allow increased draft rates and maximize proper operation of the ESP. Cost - $7 million

3. Permit will require monthly visual inspections and prompt repair of capture system ductwork and hooding.

4. GCD has tightened capture system ductwork and hooding by reapairing leaks. Cost - $1 million

5. Permit will require that GCD install a continuous flow monitoring system for the capture system ductwork and hooding. This system will ensure that sufficient draft is maintained at the hoods continuously - thus ensuring good emissions capture.

6. Permit will contain work practice standards for BOF charging which will serve to minimize emissions generation and maximize emissions capture.

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AUG 23 2013
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Increases in capture efficiencies which need justified:

	Historic	Future	% Increase
Charging	90	95	50
Refining	99	99.9	90
Tapping	90	95	50

Description of hooding:
-Charging - Have a section of hood dedicated to capturing charging emissions. Extended edge of hood has lengths of chain hanging from it to help capture. GCD is considered to have a charging hood.
-Refining - Refining emissions are captured by the primary hood which is located directly over the BOF vessel.
-Tapping - Tapping emissions are captured by the primary hood.

Address that annual capture efficiency is determined to be increasing as opposed to each cycle.

G-CAPJUS.DOC

ID # 119913AAI
95-010001
R008471

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

DATE: May 31, 1995

TO: Bharat Mathur

FROM: Don Sutton DES/HBZ

SUBJECT: Pending permit application for production increase at Granite City Division (GCD) of National Steel Corporation.

GCD currently has an application pending for a 61% increase in hot metal production and 56% increase in steel production (6900 to 10,300 tons/day). The increase triggers PSD review for CO and SO2. GCD is attempting to "net out" of new source review (NSR) for VOM, NOx, PM-10, and Particulate. GCD is located in Madison county which is moderate non-attainment for PM-10. A meeting was held on May 25 to discuss pending issues of the application.

Discussion:
GCD proposes to net out of NSR for PM-10 by relying on enhanced control measures on unpaved roadways in order to generate creditable emission reductions. These emission credits would then be used to offset process PM-10 emission increases associated with the production increase and thereby allow GCD to net out of NSR.

Issue: The issue is whether these roadway emission reduction credits can be used in the NSR netting exercise.

Interpretation of the following rule and a clear understanding of the PM-10 SIP attainment demonstration is needed in order to make a determination, as explained below.

203.208(c)(4) states - A decrease in actual emissions is creditable to the extent that it is demonstrated by the Agency not to have been previously relied on ... for demonstrating attainment or reasonable further progress in a nonattainment area which the particular change will impact.

Background on SIP modeling: The proposed PM-10 SIP, which contains PM-10 modeling demonstrating attainment, is currently awaiting approval by the USEPA. When modeled with previous roadway emissions, attainment was not demonstrated. A new rule, 212.316(e)(1) - effective May 1993, was developed which required 5% opacity from GCD roadways. This

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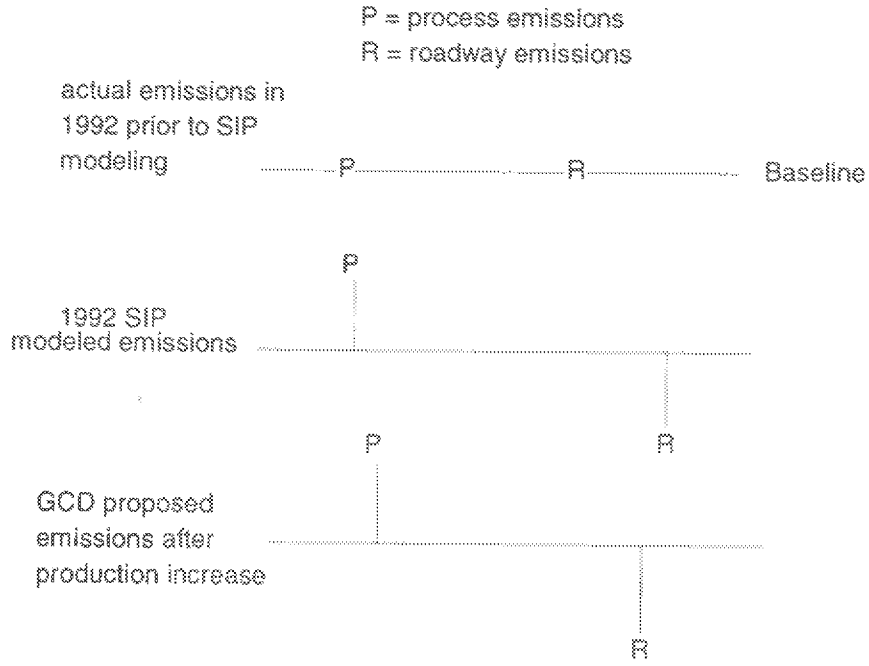
Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

allowed the Agency to assume a 95% PM-10 reduction from uncontrolled roadway emissions and thereby reach attainment in the modeling. In order to meet this required opacity level, GCD agreed on additional control measures. Treatment of unpaved roads increased from once/month to twice/month, and AQPS relied on an improvement from 50% control to 95% control. Note that emissions from roadways were adjusted in the model to account for a 25% production increase, however, this merely required that a control of greater than 95% was required on certain roads in order to accommodate the associated emissions increase. Agency policy is to model at allowable levels. For the SIP model, process allowable emissions are typically significantly greater than actual emissions, whereas roadway allowable emissions are near equal to actual emissions. The SIP model is barely showing PM-10 attainment.

A visual of what appears to be occurring in modeling:



There are still a number of inconsistencies and errors in the PM-10 emissions data supplied by GCD in the application. The following summarizes the numbers involved:

* GCD proposed roadwey control measure is treatment three times/month which equates to around 98% control.
* The SIP model uses a controlled unpaved roadway PM-10 emission rate of 21 tons/yr based on 95% control.

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- GCD proposed PM-10 unpaved roadway emissions after the production increase are 59.32 tons/yr, based on only 90% control.
- GCD gives historic actual PM-10 (baseline) from unpaved roadways at 771.06 tons/yr, whereas attainment demonstration assumed about 420 tons/yr, given the historic level of control.
- GCD currently seeks to use 711.74 tons/yr roadway reduction credit.
- GCD proposed PM-10 increase from units other than unpaved roads = 716.54 tons/yr.

Real contemporaneous emission reductions have occurred as a result of GCD's additional roadway control measures. These reductions in emissions may nearly cancel out the potential increase in PM-10 emissions from the production increase. Much of the proposed emissions increase is a result of the difference between current levels of actual emissions and future levels of allowable emissions. However, some of the emission increases, like the BOF fugitive, are real and increase in direct proportion to the production increase.

Summary:
GCD is attempting to take credit for a decrease in roadway emissions in the NSR netting exercise when some or all of this decrease may have also been relied on in the SIP attainment demonstration. To the extent that these decreases have already been relied on in the attainment demonstration, this is not allowed by 203.208(c)(4).

Implications for GCD should they not be able to use these roadway emission reductions as credits are many, including the meeting of strict NSR requirements.

GCD Position:
GCD states that the roadway reductions were relied upon in the SIP to demonstrate attainment at an increased production level and that the emissions levels from the production increase are consistent with the levels modeled for attainment. The reductions were not relied upon to demonstrate attainment at existing production levels. Therefore, the decreases are creditable for netting out of NSR. They also state that it is a timing issue in that, since a production increase was modeled in the SIP attainment demonstration, they claimed the emission

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decreases prior to the Agency relying on them. Also, they note that the SIP has not yet been approved and therefore the decreases have not yet been officially relied on.

Options:

1. Agency concludes that roadway emission decreases have not been previously relied on in the SIP and GCD is allowed to use as credits in NSR netting.
Agency could agree with points made by GCD. The Agency could reason that the increases from the proposed production increase were not relied on, merely accounted for, and will not exceed the emissions modeled for attainment, and hence the integrity of the SIP attainment demonstration is being maintained.

2. Agency concludes that decreases have been previously relied on in the SIP and GCD cannot use to net out of NSR. GCD may still attempt to avoid NSR by taking the following steps:
   a. Reduce requested permit emission limits for the production increase from allowable by rule to maximum actuals, thereby reducing increase in PM-10.
   b. Obtain PM-10 credit by increasing capture and/or control efficiency at process sources.
   c. Obtain credit by reducing paved and unpaved roadway emissions further.
   d. Add additional controls to provide decreases.
   e. Reduce level of production increase sought, thereby reducing increase in emissions (currently seeking 61% and 56%, possibly reduce to 25%).

If Option 1 is taken, it will need to be justified to the USEPA. Pursuant to the rule, the Agency will be required to demonstrate that the roadway reductions have not been previously relied on for demonstrating attainment.

If Option 2 is taken, will need to deal with GCD.

This is a serious and complex issue and we need to discuss with you prior to making a final decision. Please advise.

If you have any questions, please contact Jim Ross.

cc: Dennis Lawler, Harish Desai, Chris Romaine, Dave Kolaz, Rob Kaleel, Jim Ross, Jeff Benbenek, File - Appl.# 95010001 I.D.# 119813AAI

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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

DATE: July 28, 1995

TO: Mary Gade

FROM: Bharat Mathur

SUBJECT: Briefing regarding a pending permit application for production increase at Granite City Division (GCD) of National Steel Corporation.

GCD currently has an application pending for a 61% increase in hot metal production and 56% increase in steel production. GCD is located in Madison county which is moderate non-attainment for PM-10. The increase triggers PSD review for CO and SO2. GCD is attempting to "net out" of new source review (NSR) for VOM, NOx, PM-10, and Particulates.

GCD proposes to net out of NSR for PM-10 by relying on previously implemented enhanced control measures on unpaved roadways in order to generate creditable emission reductions. These emission credits would then be used to offset process PM-10 emission increases associated with the production increase. However, the use of these emission credits may not be allowed under NSR rules because they were relied upon as part of our PM-10 rulemaking. Resolution of this issue is being pursued with the USEPA.

Implications for GCD should they not be able to use these roadway emission reductions as credits are many, including the meeting of strict NSR requirements, which would likely kill the project.

Due to the size and nature of the increase the USEPA is expected to scrutinize the steps the Agency takes in permitting this project.

It is anticipated to require a considerable more amount of time and discussion before permit action can be taken regarding this project.

GCD has requested an expedited review of the application and issuance of a permit. Therefore, the Agency may receive some external pressure to move the process along. We intend to do everything we can in order to accommodate their request, however, it is unlikely that the permit will be issued within the time frame they wish (i.e., by mid September). In addition, GCD has requested a public hearing for the project which requires a 45 day notification period.

cc: Bernie Killian
Don Sutton

R008476

119813 AAI

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Date: August 3, 1995

To: Bharat Mathur

From: Don Sutton DES

Subject: Update on Granite City Division of National Steel Corp. (GCD) production increase application

On July 31, 1995, Chris Romaine talked to Jennifer Bruzecky of the USEPA to confirm the effect of the adoption of rules on emission reductions that are implemented prior to the adoption or effectiveness of those rules. Our understanding of the relevant rules on netting is that these reductions would cease to be creditable as emission decreases for netting. The USEPA agreed. Moreover, they indicated that this would only not be true if Illinois had a USEPA approved banking program that recognized and preserved credits in this type of circumstance, which is not the case.

Jim Ross and Rob Kaleel met with GCD on August 3, 1995 at GCD's request to discuss the netting issues. GCD was informed that the USEPA had been contacted and agreed with IEPA's position that the roadway emission reductions were not available for credit in netting. GCD stated that they are still exploring their options in this matter . GCD proposed several options on how to approach the netting which allows them to net out of new source review. These options will require Agency review to determine their feasibility, considering most options presented still try to claim substantial credit for roadway reductions. Notably, they have reduced the requested increase in PM-10 emissions from 463 tons/yr to 320 tons/yr. GCD also stated that they will be providing a response to the IEPA's proposal (a.k.a., wish list) in the near future.

In addition, GCD discussed their plans to apply for an extension to the "temporary permit" which allows them to operate at increased production for a limited period. This permit is due to expire in September of this year. The IEPA stated that it will expedite a review of this application.

Internally, we still need to decide what roadway emission reduction credits are available to GCD, if any.

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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road/Springfield, IL 62794-9276

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AUG 23 2013
REVIEWER JRM

MEMORANDUM

DATE: September 27, 1995

TO: Gene Reineke, Howard Peters, Mike Lawrence, Al Grosboll

FROM: Mary A. Gade, Director

SUBJECT: Briefing Regarding a Pending Bureau of Air Permit Application for a Production Increase at Granite City Steel Corporation in Granite City, Illinois.

This memo is to alert you of the possibility that Granite City Steel may contact you regarding the above permit application and to summarize the current status of the application.

Granite City Steel has an application pending for a 61% increase in iron production and 56% increase in steel production. The company is located in a moderate nonattainment area for PM-10, which means it must offset any expected emission increases before it can expand operations or meet stringent emission control requirements. Granite City Steel proposes to show offsets by relying on previously implemented control measures for its roadways and additional controls at the basic oxygen furnace shop. The Agency is now trying to determine the amount of emission credits available and hopes to make a final determination within two weeks. Due to the size and nature of the requested increase, the USEPA is expected to scrutinize the steps the Agency takes in permitting this project. If Granite City Steel cannot achieve the necessary level of offsets, the project will probably not go forward.

In order to accommodate Granite City Steel while resolution of the available emission credit issue is pursued, an interim permit was issued on September 21, 1995, allowing a smaller increase in production (i.e., 19%). Granite City Steel has requested an expedited review of the application and issuance of a permit. They have also requested that a public hearing be held for the project. A notice time of at least 45 days is necessary for any such hearing. You may receive some external pressure to move the process along. We intend to do everything we can in order to accommodate Granite City Steel's request, however, it is possible that the Agency may not be able to permit the full production increase requested by Granite City Steel.

If you have any questions regarding this project, please contact Bharat Mathur, Chief, Bureau of Air at 785-4140.

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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

EPA - DIVISION OF RECORDS MANAGEMENT
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AUG 22 2013
REVIEWER JRM

MEMORANDUM

DATE: September 28, 1995

TO: Gene Reineke, Howard Peters, Mike Lawrence, Al Grosboll, and Erica Mair

FROM: Mary A. Gade, Director

SUBJECT: Briefing Regarding a Pending Bureau of Air Permit Application for a Production Increase at Granite City Steel Corporation in Granite City, Illinois.

This memo is to alert you to the possibility that Granite City Steel may contact the Governor's Office regarding the above permit application.

Granite City Steel has an application pending for a 61% increase in iron production and 56% increase in steel production. The company is located in a moderate nonattainment area for PM-10 (small particulates), which means it must offset any expected emission increases before it can expand operations or meet stringent emission control requirements. Granite City Steel proposes to show offsets by relying on previously implemented control measures for its roadways and additional controls at the basic oxygen furnace shop. The Agency is now trying to determine the amount of emission credits available and hopes to make a final determination within two weeks. Due to the size and nature of the requested increase, the USEPA is expected to scrutinize the steps the Agency takes in permitting this project. If Granite City Steel cannot achieve the necessary level of offsets, the project will probably not go forward.

In order to accommodate Granite City Steel while resolution of the available emission credit issue is pursued, an interim permit was issued on September 21, 1995, allowing a smaller increase in production (i.e., 19%).

Granite City Steel has requested an expedited review of the application and issuance of a permit. They have also requested that a public hearing be held for the project. A notice time of at least 45 days is necessary for any such hearing. We intend to do everything we can in order to accommodate Granite City Steel's request; however, it is possible that the Agency may not be able to permit the full production increase requested by Granite City Steel.

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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

JRM

DATE: October 2, 1995

TO: Dennis Lawler, Don Sutton, Rob Kaleel

FROM: Jim Ross JR

SUBJECT: Determination of available PM-10 emission credits for netting exercise of Granite City Division (GCD) production increase application.

A decision needs to be made regarding the amount of available emission credits which can be used by GCD in their attempt to net out of new source review (NSR) for PM-10.

Background:
GCD is attempting to net out of NSR for PM-10. For current netting situation refer to attachment A. The net PM-10 increase from the proposed project is now at 281 tons/yr. The significant increase level which triggers NSR is 15 tons. Therefore GCD needs at least 266 tons of emission credit to net out. They propose to obtain these credits from reductions occurring as a result of;

1. Over-control of fugitive roadway and material handling emissions, and
2. Increased capture and control at the BOF.

The Agency issued a construction permit for a limited production increase on September 22. This permit was issued to allow GCD some increase while the Agency resolved the above referenced issue of available credit for the larger increase. The limited increase did not undergo public notice or USEPA review, as would normally be required due to netting, since the Agency intends to go through these steps and hold a hearing for the full production increase. Current plans are to both public notice the hearing and send a draft of the full production increase permit to USEPA by the second week of October. To meet this deadline, a decision on available emission credits needs to be reached almost immediately.

Main Issue:
Agency needs to determine the amount of available credit from increased control measures at the BOF which in turn will determine if this project can be permitted for the

production increase level currently requested. The amount of available credit is dependent upon many factors including, applicability of process weight rule (PWR) to BOF roof emissions, method used to determine historic actual emissions, and the amount of emissions PM-10 modeling can accommodate. Further complicating the issue is the existence of several different approaches to estimating emissions and trying to maintain some consistency with other PM-10 modeling (Acme Steel) and historic PWR rule interpretation. GCD has claimed improved PM-10 capture efficiency at the BOF as a result of higher flow rates into the hoods which is possible due to the addition of 4th ESP section, and repairs and tightening of hoods and ductwork of the emissions capture system. Presented below are three options for determining BOF credit and the pros and cons associated with these options.

Option 1:
No credit is available for additional controls as this added control is needed to maintain emissions at the current level such that there is no increase. Based on GCD not being able to justify or directly measure the increase in capture at the hoods, no reductions in emissions result from these controls. As a result, the Agency cannot issue a permit at the current production levels requested unless GCS undergoes NSR, including LAER.

Pros;
- may eventually lead GCD to add further PM-10 control (possibly desulfurization of COG).

Cons;
- not consistent with the development of the PM-10 attainment demonstration.
- would have to Deny permit, which GCD would probably appeal and all the implications therein.
- GCD does not accept 20% opacity limit for PM-10 SIP.

Option 2 (modified GCD approach):
emission factor:
charge/refine/tap = 0.34 lbs total PM/ton steel at roof monitor, based on actual test of roof monitor emissions.

Assume 92% of PM is PM-10 based on AP-42 table C.2-2 for melting, smelting, and refining of metals. Note that USEPA recommended the following for use by Indiana: charge=0.47, refine=0.67, tap=0.45 - based on estimates of PM-10 fractions at source, not at roof. However, Illinois' PM-10

SIP uses 0.92. For Acme Steel caster project application used 0.67.

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,759,500

PM-10:

historic actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ ton steel)	assumed hood capture eff.
				charge >no assump.
				refine >needed,
				tap >test data
total	377.5	86.2	0.3128	
future potential				
				charge >70% improve
				refine >capture on
				tap >all
total	173.4	39.6	0.0922	

credit = 204.1

Pros;
- emission determinations are consistent with AP-42 and stack testing done to measure roof emissions.
- GCD would agree to lower opacity limit at the BOF roof monitor from 30% to 20%.
- estimates are lower than those which would occur using Indiana and USEPA methods.

Cons;
- **difficult to correlate and justify a 70% percent increase in capture for all hoods to the improvements at the BOF.**
- the level of historic emissions indicates non-compliance of BOF with PWR limit - **should it apply**.
- minimal data to support these reductions.
- still shy around 62 tons of credit needed to net out.

Option 3:
Lower request for annual production increase to 3,580,000 tons steel/yr.
Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced.
In this case netting exercise credit needed drops to;
(3,580,000/3,759,000)(266) = **253.3** tons

PM emission factors per AP-42:
charge = 0.6 lbs PM/ton hot metal at BOF
refine = 28.5 lbs PM/ton steel at BOF
tap = 0.92 lbs PM/ton steel at BOF
assume 92% of PM is PM-10
Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,580,000

PM-10:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	56.8	12.98	0.04711	90
refine	221.5	50.67	0.18354	99.3
tap	102.1	23.32	0.08464	90
total:	380.4	86.97	0.31529	
Future Potential				
charge	45.8	10.46	0.0256	95
refine	46.9	10.72	0.02622	99.9
tap*	72.0	16.44	0.04021	95
total:	164.7	37.62	0.09203	

CREDIT = 215.7
Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- historic actual correlates with GCD approach, therefore have two separate approaches arriving at the same emissions.
- emission determinations are consistent with AP-42 and stack testing done to measure roof emissions.

- gives high amount of credit for GCD, which can be adjusted even higher.
- emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- GCD would agree to lower opacity limit at the BOF roof monitor from 30% to 20%.
- estimates of charging hood capture eff. seem reasonable since GCD has a hood dedicated for charge capture. Reasonable to assume higher charging emissions capture at GCD as opposed to Acme Steel since Acme does not have a hood dedicated to charging capture.

Cons;
- the level of historic emissions indicates non-compliance of BOF with PWR limit - **should it apply.**
- no hard data to support these reductions.
- **need some logical transition from historic capture efficiencies to future capture efficiencies. Currently are just estimating.**
- higher capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- still shy around 51 tons of credit needed to net out.

Note that none of the options presented allow GCD to net out at the level of production increase currently requested.

cc: Harish Desai, Chris Romaine, Jeff Benbenek.
Application file No. 95010001, I.D. No. 119813AAI

G-BOFNET.DOC.JRR

ATTACHMENT A

PM-10 NETTING

Significant Increase = 15 tons/yr (triggers NSR - LAER)

FUTURE POTENTIAL from units/activities whose emissions are affected by proposed project = ? tons/yr

HISTORIC ACTUAL from units/activities whose emissions are affected by proposed project = ? tons/yr

POTENTIAL INCREASE as a result of proposed project = FUTURE POTENTIAL - HISTORIC ACTUAL

POTENTIAL INCREASE = 320 tons/yr

CONTEMPORANEOUS INCREASES = 19 tons/yr

CONTEMPORANEOUS DECREASES* = 58 tons/yr

Netting Equation:

CHANGE as a result of proposed project =
(POTENTIAL INCREASE + CONTEMPORANEOUS INCREASES) -
(CONTEMPORANEOUS DECREASES)

CHANGE = (320 + 19) - (58) = **281 tons/yr increase**

*Of the Contemporaneous Decreases, 32 tons is from Fugitive Dust Control Plan (roads and material handling - 20.36 and 11.76, respectively) and 26 tons is from shutdown of ingot teeming, blooming mill and batch annealing.

ATTACHMENT B

PWR RULE DISCUSSION

Historic application of rule has been that both stack (i.e., captured) and uncaptured emissions are added together and compared to allowable. Have treated other sources in this manner. In case of BOF, have measured the stack value by testing and added this to a calculated value for uncaptured (roof monitor) emissions using AP-42 factors and assuming a capture efficiency for the hoods. Problem arises in that there are many different ways to calculate BOF roof emissions (depending upon the assumptions made for hood capture and PM-10 fraction - USEPA, Indiana, Illinois all use different methods). This undermines the enforceability of this rule.

Perhaps a more appropriate method to limit emissions would be to have a mass emission limit only on the stack (e.g., lbs/hr, gr/dscf). Would have only an opacity limit for the BOF roof. That is limit captured and uncaptured emissions separately. This clarifies and simplifies as well as allows direct determinations of compliance, i.e., stack test for captured emissions and visual observations/opacity for uncaptured. Could revise rules in the PM-10 SIP to change to, or clarify that, this is the way compliance will be determined.

NSPS for BOFs says "For any type of mass limit to be effective in ensuring the capture of secondary emissions (aka, uncaptured), it would have to be possible to measure emissions that escape capture. Methodology does not exist to do this for BOPF steelmaking operations and, therefore, mass limits cannot be considered." The NSPS uses opacity limits at the roof to ensure capture.

The NSPS goes on to say that for stack emissions from a control device "A process weight format was not considered appropriate ...". Instead, the limit was chosen as:

1. mass emissions per unit volume of gas, e.g., gr/dscf (allows direct comparison with Method 5 test results), and
2. opacity (to aid in enforcement and as an indicator of proper operation and maintenance).

R008486

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Please Deliver The Following Pages To:

NAME: Jim Ross

COMPANY: IEPA

CITY/STATE: _____

FAX NUMBER: _____

From

NAME: Larry Siebenberger

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040

Our FAX Number: (618) 451-4020

We are transmitting 3 pages (including this cover letter)

If transmission is not complete, call: _____
Dale. (618-451-3457)

Subject: Proposed Regulation Language

Comments: _____

IEPA-DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

Jim,

- Any comments from USEPA on production permit?
- Any negative comments from anybody?
- Who from the IEPA will be at the hearing?
- We should anticipate this group may be at hearing & be prepared to respond to their comments. I'm not familiar with the publication they cite.
- Do I need to give you any permit corrections by Dec 20 or can they be given by Jan 19?

Give me a call!

Larry 12/15/95

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DEC 2[illegible] 1995
IEPA-DAPC-SPFLD

R008487

...nst city for pay. 3B
...resident. 3B

Granite opposes incinerator plans

By Debra A. Robinson
Belleville News-Democrat

GRANITE CITY — A resident pleaded with aldermen that if the air quality in Granite City is too poor to fire up the barbecue grill, then it wouldn't pass EPA standards with incinerator ash added to it.

Granite City aldermen agreed, and voted Tuesday night to formally oppose a proposal to build an incinerator in the neighboring city of Madison. Mayor Ron Selph said the opposition will be in writing and in representation at two public meetings next week on the proposal to build the electric plant that will be fired mainly by waste wood.

Nameoki Township leaders have voted to oppose the plant as well.

The all-day public meetings on a Connecticut company's plans to build a plant in Madison near the Cloverleaf neighborhood begin at 9 a.m., both Tuesday and Wednesday, at Madison Middle School, 1003 Farish in Madison.

Michael Vrtis, a representative of Metro-east Limited Liability Co., the proposed plant builder, could not be reached for comment.

Kathy Andria, a Granite City resident and organizer of SPILL, Stop Polluting in Illinois, told aldermen that because of the city's heavy industry, the city is currently rated by state regulators as moderate nonattainment, meaning there are days when air pollution is above the safe level.

She said there are days when it's not a good idea to light the outdoor grill.

"Granite City has the worst pollution in the state," Andria said, reading from a 1995 publication of the Illinois Environmental Protection Agency.

"The city has the highest concentration of arsenic, cadmium, iron, vanadium and manganese" in the air, she continued from the IEPA report, based upon 1994 readings. "One of the things IEPA asks you to do in these conditions is limit barbecues."

Ward 2 Alderman Craig Tarpoff made the motion to oppose the plant.

"If we didn't have an air pollution problem, then it would be different," Tarpoff said. "We have to be very, very, selective about what

See INCINERATOR/4B

Officer is charged with DUI

Shiloh suspends man for a month

By Denise Hollinshed
Belleville News-Democrat

EPA - DIVISION OF RECORDS MANAGEMENT
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23
AUG 8-8-2013
REVIEWER JRM

Granite City Jo
SUBURBAN JOURNALS - #1 IN WEEKDAY READERSHIP WITH OVER 1
BROOKLYN • GRANITE CITY • MADISON • MITCHELL • PONTOON
SUNDAY, DECEMBER 11, 1994

EPA urged to ease air restrictions

Council backs Granite City Steel

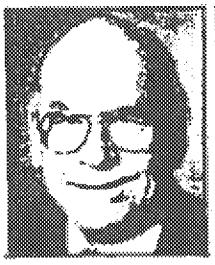
By Bob Slate
Staff writer

National Steel Corp. plans to spend $9 million next year to improve air quality in Granite City.

With that pledge in hand, the Granite City Council voted 13-2 last week to support National Steel in its attempt to persuade the Illinois Environmental Protection Agency to ease present restrictions on Granite City Steel.

National Steel officials have said that IEPA regulations on air and water emissions prevent the company's Granite City Division from utilizing its state-of-the-art equipment at full capacity, thus placing the company at a competitive disadvantage.

The local mill has the ability at its Basic Oxygen Furnace shop to make about 7,600 liquid tons a day to send through its



Skubish

Asadorian

casters. But the IEPA has until now limited caster production at Granite city Steel to 7,056 liquid tons a day.

The IEPA recently issued a temporary permit that has the effect of allowing Granite City Steel to run at full capacity until the end of 1995. National Steel is seeking to make that arrangement permanent.

V. John Goodwin, president and CEO of National Steel, has said that increased production now, when the market is strong, is the best way to increase profits for the company.

"In short, increasing our production capacity would increase our profitability," Goodwin said.

The resolution passed by the City Council Tuesday states that "the future viability of Granite City Division National Steel Corporation is absolutely essential to the success of governmental services in this area, and without it, local governments would find it impossible to continue (the) level of governmental services demanded by the citizens."

Therefore, according to the resolution, the city requests IEPA to "favorably consider the request by Granite City Division National Steel Corporation to remove or ease the present restrictions that have been placed on its production at its continuous caster, basic oxygen

(See EPA, Page 10A)

•EPA —

(Continued from P

furnace and blast
tions."

Alderman Cas
spoke strongly in
resolution.

"We are enterin
crisis in Granite C
two years. It woul
tal to lose such a
that contributes s
to our economy,"

Granite City S
employs more tha
ers and contribute
annually — includi
to schools — in
taxes.

In total, officials
Granite City Ste
$1.6 billion a yea
economy.

"Inland Steel,
our own back ya
steel from China.
ently be shipped
can be produced

R008489

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AUG 23 2013
REVIEWER JRM

DATE: 12/19/95

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DEC 19 1995
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NAME: Jim Ross

COMPANY: _____

CITY/STATE _____

FAX NUMBER: _____

From:

NAME: L. Sichenberger

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040

Our FAX Number: (618) 451-4020

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Larry Stephenberger

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To Steve Nightingale | From Ron Stalls
Co./Dept. IL EPA/DAPC/SPELD | Co. GC Iron + Steel Steel
Phone # | Phone #
Fax # 525-4115 | Fax # 876-9240

To GC Journal for publication in Wednesday's
Fm: Kathy Andria, SPILL

On Wednesday night (Dec. 20, 1995), the Illinois EPA will hold a public hearing related to Granite City Steel's expansion. A public hearing five days before Christmas? What better time to hold it to ensure that no one comes. Thank you IEPA and GC Steel for such a thoughtful gift.

The citizens of Granite City, Madison and the surrounding area have been assaulted for years by the pollution emanating from Granite City Steel, which continues to be on the top 10 list of polluters in the state. Our families have cancer, heart disease and lung diseases and our children have asthma.

Granite City has given GC Steel its own taxing district, allowing money that could have gone into our schools to be reinvested in the plant. And yet GC Steel would not commit a percentage of that TIF money into ensuring that our air would be clean.

Yes, we need the jobs. But many, if not most, of Granite City steel workers have moved out of the City, away from the pollution, leaving the rest of us who can't afford to move behind to suffer the consequences. Even GC Steel's own public relations director has moved to cleaner surroundings.

In November, area citizens quite touchingly testified to the Granite City City Council how pollutants in the air seriously affect the health of their families. Mayor Ron Selph courageously vetoed rescinding the ban on leaf burning.

This past summer we had devastating air pollution and 20 days of ozone exceedances. Last Thursday morning in Bellemore Village I went outside to get the paper at 6 am and was hit with a powerful odor. I thought I was in Wood River. It's the same smell that can be detected with increasing frequency on Madison Avenue in downtown Granite City and that chokes those who must drive on Edwardsville Road past the coke plant.

And yet Congress and our own state EPA is seeking to relax air pollution standards, to allow even higher levels of ozone, volatile organic chemicals and particulates. Who is being protected by the IEPA? Not the children. Not the elderly. Industry, that's who. And as for protecting workers, they must breathe the very strongest concentrations of these unhealthful particles and toxins and are increasingly asked to work longer and longer hours with even more exposure because companies don't want to expand their work force.

It's time that area citizens stood up for their rights and those of their children to a clean healthful environment, for the right to live and work without risk to their families. Let's also send season's greetings to our elected officials, asking for a holiday present of clean air, clean water and real protection of our natural resources and the health of our families.

And if you're too busy with Christmas shopping and family gatherings to attend a public hearing, call us at 876-5459 and we'll let IEPA know of your concern.

Kathy Andria
SPILL

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DEC 19 1995
IEPA-DAPC-SPELD

JRR

FACSIMILE MESSAGE:

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TIME:

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PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME: Jim Ross

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CITY/STATE:

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IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG ~~22~~ 23 2013
REVIEWER JRM

FROM: Larry Siebenberger

Granite City Division
National Steel Corp.
20th and State St.
Granite City, Illinois
62040

Our Fax Number is (618) 451-4020

We are transmitting ____ pages (including cover page.) If transmission is not complete,

please call _____ at (618)451-____

Subject: PM corrections for Proposed Permit

COMMENTS: Jim,
We corrected the permit application TSP emission rate for Blast Furnace Cast house unceptured emissions. This is the corresponding corrections to the proposed permit.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

* Emission increases which could occur from the project:

PM-10	PM	NOx	SO2	CO	VOM	Lead
51.6	~~(-88.6)~~ (~53.0)	238.8	475.8 476.0	5,685	59.3	0.54

* Creditable contemporaneous actual emission decreases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
~~20.4~~ 20.7	~~20.6~~ 20.3	~~18.4~~ 26.0	~~0.2~~ 0.25	~~10.2~~ 11.8	~~1.2~~ 1.6	0.0

- Net emission changes:

PM-10	PM	NOx	SO2	CO	VOM	Lead
~~+14.0~~ +14.3	~~-36.0~~ ~~-97.8~~ -89.2	~~+30.7~~ +38.3	~~+475.6~~ +475.9	~~+5,672~~ +5,673	~~+27.7~~ +28.1	+0.54

- Significant Levels:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Explanatory Note:

PM = particulate matter = particulate;
PM-10 = particulate matter less than or equal to 10 micrometers in size;
SO2 = sulfur dioxide;
NOx = nitrogen oxides;
VOM = volatile organic material;
CO = carbon monoxide;
mm = million;
gr/dscf = grains per dry standard cubic foot;
acfm = actual cubic feet per minute;
mmcf = million cubic feet;
Mgal = thousands of gallons.

If you have any questions on this permit, please call Jim Ross at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES.JRR.G-PERM.DOC

cc. IEPA, FOS Region 3

Permit Application #95010001

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping) - captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO2	0.2006	422.0
NOx	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	~~0.0155~~ 0.09 *	~~24.53~~ 49.06 *
PM-10	0.0155	24.53
SO2	0.0104	~~16.46~~ 21.94 **
NOx	0.0007	1.14
VOM	0.0047	7.42

* Corrected 1/18/96

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO2	0.0100	15.83

R008495

Permit Application #95010001

TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

units = tons/year

	PM	PM-10	SO2	NOx	VOM	CO	Lead
Blast Furnace Operations	194	194	474	24	157	-	-
BOF Shop	510	451	-	70	21	16,097	1.43
Continuous Casting Operations	71	71	-	90	-	-	-
Certain Fuel Combustion Units*	273	273	461	674	2	1,291	.61
Roadways	27	27	-	-	-	-	-
Material Handling	2	2	-	-	-	-	-
TOTAL	1,061	1,022	5,609	858	270	17,388	2.04

*Blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

R008496

Permit Application #95010001

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NOx	SO2	CO	VOM	Lead
51.6	(=66.8) −52.0	238.8	475.8 476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
20.4 20.7	20.4 20.8	10.4 24.0	0.2 0.25	10.2 11.8	1.2 1.6	0.0

- Net emission changes:

PM-10	PM	NOx	SO2	CO	VOM	Lead
+14.0 +14.3	-98.0 -77.8 −84.2	+30.7 +38.3	+475.6 +475.9	+5,422 5,673	+27.7 +28.1	+0.54

- Significant Levels:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

R008497

FACSIMILE MESSAGE:

DATE: 1/16/96

TIME: _____

PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME: Jim Ross

COMPANY: IEPA

ADDRESS: _____

CITY/STATE: _____

FAX NUMBER: _____ TELEPHONE NUMBER: _____

FROM: Larry Sichenberger

Granite City Division
National Steel Corp.
20th and State St.
Granite City, Illinois
62040

Our Fax Number is (618) 451-4020

We are transmitting 10 pages (including cover page.) If transmission is not complete,

please call _____ at (618)451-_____.

Subject: Production Increase Permit

COMMENTS: Permit changes as per our conversation.
Includes corrections for #8 Galv line.
Tables 2+3 OK
If you have any questions give me a call
Larry

shall be able to make the opacity readings required by this permit.

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on 0.0544 ~~0.0482~~ mmft3 BFG generated per net ton of hot metal produced.

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

i. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

ii. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

iii. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

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c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

* Emission increases which could occur from the project:

PM-10	PM	NOx	SO2	CO	VOM	Lead
51.6 ✓	(-60.6) ✓	238.8 ✓	475.8 476.0	5,685 ✓	59.3 ✓	0.54 ✓

* Creditable contemporaneous actual emission decreases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
58.0 ✓	58.0 ✓	226.5 ✓	0.38 ✓	23.31 ✓	32.8 ✓	0.0

- Other contemporaneous emission increases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM-10	PM	NOx	SO2	CO	VOM	Lead
+14.3	+39.3	+39.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

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CO = carbon monoxide;
mm = million;
gr/dscf = grains per dry standard cubic foot;
acfm = actual cubic feet per minute;
mmcf = million cubic feet;
Mgal = thousands of gallons.

If you have any questions on this permit, please call Jim Ross at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES.JRR.G-PERM.DOC

cc. IEPA, FOS Region 3

Permit Application #95010001

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Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO2	0.2006	422.0
NOx	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0155	24.53
PM-10	0.0155	24.53
SO2	0.0104	16.46 21.94
NOx	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO2	0.0100	15.83

Permit Application #95010001

TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.02548	40.32
PM-10	0.02548	40.32
SO2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00279	6.01
PM-10	0.00279	6.01

R008503

Permit Application #95010001

TABLE 6

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage (mmft3/yr)
Natural Gas (total)	1,145
BFG	185,030

Fuel Oil 365 thousand gallons/yr

1. Natural Gas

Pollutant	Emission Factor (lbs/mmcf)	Maximum Emissions (tons/yr)
PM	5.1	2.92
PM-10	5.1	2.92
SO2	0.6	0.34
NOx	306	175.19
VOM	2.8	1.60
CO	40	22.90

2. BFG

Pollutant	Emission Factor (lbs/mmcf)	Maximum Emissions (tons/yr)
PM	2.9	268.29
PM-10	2.9	268.29
SO2	6.65	~~615.22~~ 615.22
NOx	5.28	488.48
CO	13.7	1,267.46

R008504

Permit Application #95010001

TABLE 4 (cont.)

3. Fuel Oil

Pollutant	Emission Factor (lbs/Mgal)	Maximum Emissions (tons/yr)
PM	9.72	1.77
PM-10	9.72	1.77
SO2	141.3	25.79
NOx	55	10.04
VOM	0.28	0.05
CO	5.0	~~0.91~~
Lead	0.336	~~0.06~~ 0.36 (waste oil)

R008505

Permit Application #95010001

TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

units = tons/year

	PM	PM-10	SO2	NOx	VOM	CO	Lead
Blast Furnace Operations	194 ~~198~~	194 ~~198~~	474 ~~468~~	24	157	-	-
BOF Shop	510	451	-	70	~~11~~ 12	16.097	1.43
Continuous Casting Operations	71	71	-	90	-	-	-
Certain Fuel Combustion Units[a]	273	273	~~6,141~~ 671	674	2	1.291	~~0.81~~ 0.06
Roadways	27	27	-	-	-	-	-
Material Handling	2	2	-	-	-	-	-

	PM	PM-10	SO2	NOx	VOM	CO	Lead
TOTAL	~~1,081~~ 1,077	~~1,022~~ 1,016	~~6,609~~ 1,115	858	~~170~~ 171	17,388	~~2.04~~ 1.49

[a] Blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

Permit Application #95010001

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NOx	SO2	CO	VOM	Lead
51.6	(-60.6)	238.8	~~475.8~~ 476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
~~28.4~~ 20.7	~~20.6~~ 20.8	~~18.4~~ 26.0	~~0.2~~ 0.25	~~10.2~~ 11.8	~~1.2~~ 1.6	0.0

- Net emission changes:

PM-10	PM	NOx	SO2	CO	VOM	Lead
~~+18.0~~ +14.3	~~-98.0~~ -97.8	+30.7 +38.3	+475.6 +475.9	~~+5,672~~ +5,693	+27.7 +28.1	+0.54

- Significant Levels:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

FACSIMILE MESSAGE:

DATE: 1/18/96

TIME:

PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME: Jim Ross

COMPANY:

ADDRESS:

CITY/STATE:

FAX NUMBER: TELEPHONE NUMBER:

FROM: L Siebenberger

Granite City Division
National Steel Corp.
20th and State St.
Granite City, Illinois
62040

Our Fax Number is (618) 451-4020

RECEIVED
JAN 1 8 1996
IEPA-DAPC-SPFLD.

We are transmitting 4 pages (including cover page.) If transmission is not complete,

please call at (618)451-

Subject:

COMMENTS: Calendar vs 12 month rolling limits

January 18, 1996

CERTIFIED MAIL NO. Z 158 730 444
RETURN RECEIPT REQUESTED

Mr. John Williams
Agency Hearing Officer
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62794-9276

RE: Granite City Division National Steel Proposed Permit

Dear Mr. Williams,

Granite City Division (GCD) of National Steel Corporation requests that conditions 32(c) of the proposed permit be modified to require compliance with all annual limits on a calendar year basis only. Since many of the emission rates are proportional to production rates, a 12 month rolling average on emission limits would effectively limit production to a 12 month rolling average.

A 12 month rolling average allows for production flexibility if business varies seasonally or production outages occur at the same time each year. The Granite City Division's production does neither of these. Major equipment outages and corresponding production losses do not occur every year, or at the same time of the year.

Under the 12 month rolling average, GCD would be forced to reduce production during a calendar year when no major equipment outages were planned if major equipment outages and corresponding production loss occurred and were recovered during the previous calendar year. This forced production loss would occur even though the annual and daily limits of the proposed permit would not be exceeded during either of the two calendar years, (see Attachment A.)

GCD proposes the following reporting procedure in order to assure the IEPA that its the annual production limits will not be exceeded by the end of the calendar year. GCD will submit a yearly iron and steel production plan by month by December 15th of the previous year. The plan will be updated quarterly by including the actual production for the previous quarter and projecting the planned production for the remainder of the year. This will assure compliance with the annual production limits by the end of the calendar year.

This proposed permit modification will eliminate the overly restrictive affect of the 12 month rolling average limit on GCD's production plans while meeting all applicable air pollution control requirements

Very truly yours,

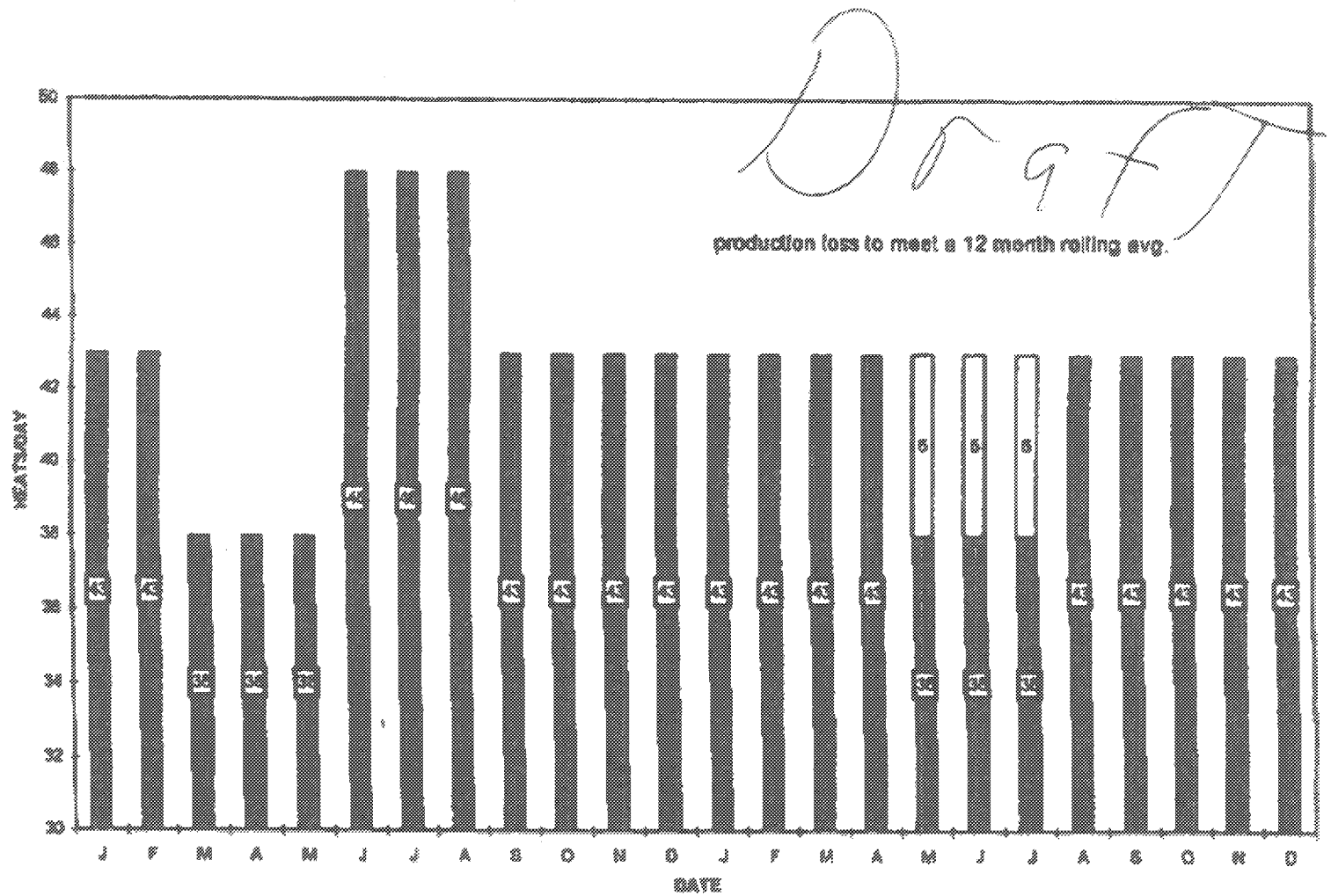
Larry Siebenberger
Senior Manager - EQC

Draft

CERTIFIED MAIL NO Z 135 730 444
Attachment
hearing1.doc

01/18/96 16:45 GVS EOC → 2175245023 NO.025 P04

BOF PRODUCTION ROLLING AVERAGE vs. CALENDAR YEAR AVERAGE



Illinois Environmental Protection Agency · 2009 Mall Street, Collinsville, Illinois 62234

Collinsville Regional Office
Telephone: (618) 346-5120
Fax: (618) 346-5155

DATE: 1/22/96

TO: Jim Kaas
217/524-5028

FROM: Jeff Benbenek

MESSAGE: Re. Suggested Corrections to National Steel's production increase permit.

I will be in the office the rest of today and most of tomorrow if there are any questions.

NUMBER OF PAGES: 10
(Including this cover page)

To Recipient: If all pages are not received, please contact (618) 346-5120.

TEP:cas/5

0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(1).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOP's) shall not exceed 11,000 net tons per day, averaged over any calendar month, and

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7a. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 0.225 lbs PM-10 per ton of steel produced, and

b. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr. Notwithstanding the limitations set forth in special condition (a) above the emissions of PM-10 from the BOF ESP stack shall not exceed 60 lbs/hr for any one hour period.

8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis.

9a. The Permittee shall determine the opacity from the ~~roof monitor on at least a weekly basis~~ openings in the BOF Shop on at least a weekly basis.

C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);

ii. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the set point shall be set to establish the total draft necessary to control the corresponding portion of the process which is occurring on each vessel during the overlap. For example, minimum set point while charging at one vessel and tapping at the other would be equal to that necessary to establish a flow of 700,000 cfm (i.e., 550,000 + 150,000).

iii. Overlapping operations of the BOF vessels is allowed only as specified in operating permit application number 72080043.

iv. The BOF capture system shall be operated at the above minimum set points until and unless the Agency approves a lower minimum setpoint based on a demonstration that a better level of particulate matter control will occur except for purposes of emissions testing as related to the set point.

b. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder of the stack gas flow rate as measured by the stack gas flow meter during ESP use.

c. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle, that is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

d. The stack gas flow meter shall be calibrated on at least a quarterly basis.

13a. Within 270 days of the date issued of this permit, the Permittee shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the various exhaust ventilation rates or levels of exhaust ventilation through the main downcommer duct of the ESP emissions capture and transport system.

Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

d. These determinations shall be recorded in a log book, which ~~includes~~ at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.

10. The Permittee shall follow the BOF operating procedures and requirements specified in attachment A. These requirements are designed to ensure proper operation of the BOF control system. These procedures shall be posted in the BOF pulpit (a.k.a., control room).

11. Flame suppression shall be used and maintained during the entire tapping process.

12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency of the charging and primary hoods:

i. Set point requirements while only a single BOF vessel is in operation;

A. Minimum set point during charging process: 550,000 cfm;

B. Minimum set point during refining process: 650,000 cfm;

b. The monitoring system shall be designed to be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated, tested and maintained to ensure accurate and useful data.

d. The Agency may allow an equivalent system or method instead of the above monitoring system provided the Permittee demonstrates, and the Agency approves, that such system or method will ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks in an equivalent manner, and that such system or method can be installed and operated within the time period required for the monitoring system as stated in this permit.

14a. The Permittee shall visually inspect at least monthly all BOF vessel enclosures, visible hooding, and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which includes the following:

i. Operating time of the BOF;

ii. Operating time of the capture systems and performance parameters, including air flow and fan amperage through each fan motor, gas temperature at inlet to ESP, and steam injection rate; Damper settings

iii. Operating time of the ESP and performance parameters, including voltage and amperage of each ~~section~~ transformer/rectifier set number of sections in use;

iv. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.

Jim, I do not think they have currently the capability to monitor air flow for an flow fan and fan !!

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450, and 212.458(b)(2).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

i. Natural Gas usage: 190 million ft3 per month and 1,145 million ft3 per year;

ii. Blast Furnace Gas (BFG) usage: 30,800 million ft3 per month and 185,030 million ft3 per year;

iii. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck, so as to eliminate dust spillage on the in-plant and out-of-plant roadways.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

i. At least weekly, the quarter mile segment of ~~16th~~ Madison Avenue ~~street~~ in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

ii. At least weekly, segment of 20th street between Lee and Quincy roads;

iii. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total), except that compliance with annual iron and steel production limits shall be determined based on a calendar year.

33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who

Jim, didn't we decide to require that these employees [illegible] (based on comments at the hearing)?

being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

STARTUP AND TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source, and supersede such conditions in cases where a conflict exists.

38. Operation at the increased production rates specified in this permit is allowed for 270 days from the date issued under this construction permit.

39a. The following tests shall be performed to demonstrate compliance with the conditions of this permit within 270 days from the date issued of this permit:

A. Blast Furnace testing: The emissions of particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides, and the opacity from the blast furnace casthouse stack shall be measured. These tests shall be designed to verify compliance with 35 Ill. Adm. Code 212.445 and the requirements of this permit;

B. Hot Metal Desulfurization testing: The emissions of particulate matter from the desulfurization baghouse shall be measured. These tests shall be designed to verify compliance with the requirements of this permit; and 35 the Code 212.446(b)(c);

C. BOF testing: The emissions of particulate matter, carbon monoxide, and lead from the BOF ESP stack, and the opacity from both the BOF ESP stack and BOF Shop shall be measured. These tests shall be designed to verify compliance with 35 Ill. Adm. Code 212.446, 212.458 and the requirements of this permit;

D. Fuel Combustion Units testing: The emissions of particulate matter from a representative boiler while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:
- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate
- determined emission factor
- compliance demonstrated - Yes/No
- other pertinent information (e.g. for the BOF, pulpit set point for each process of the BOF cycle - charging, refining, and tapping);

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,
- pertinent process information (e.g. fuel or raw material consumption)

Illinois Environmental Protection Agency
Division of Air Pollution Control
1340 N. Ninth Street
Springfield, Illinois
November 1995

PROJECT SUMMARY FOR PROPOSED ISSUANCE OF A CONSTRUCTION PERMIT FOR GRANITE CITY DIVISION OF NATIONAL STEEL CORPORATION

Applicant:
Name: Granite City Division of National Steel Corporation
Address: 20th and State Streets, Granite City

Contact Person: Larry Siebenberger
Contact Person Phone: (618) 451-3456

Project:
Project: Increased iron and steel production
Project Location: Southeastern Granite City

Plant Name: Granite City Division of National Steel Corporation
Location Identification Number: 119813AAI
Application Number: 95010001

Significant Dates:
Application Received: January 3, 1995
Public Hearing
Scheduled For: 7:00 p.m., Wednesday, December 20, 1995
Comment Period Ends: January 19, 1996

Hearing Location: Granite City Township Hall, 2060 Delmar in Granite City, Illinois

Illinois EPA contacts:
Permit Section - Name: Jim Ross
Address: 1340 N. Ninth Street
P.O. Box 19506
Springfield, Illinois 62794-9506
Telephone: 217/785-1878

Telecommunications Device for the Deaf: 217/782-2143

Field Operations Sections - Name: Jeff Benbenek
Address: 2009 Mall Street
Collinsville, Illinois 62234
Telephone: (618) 346-5120

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

INTRODUCTION:

Granite City Division (GCD) of National Steel Corporation is a steel mill located on about 1100 acres of land largely within the city limits of Granite City. GCD has conducted iron and steel making at this site since 1878. The final product at GCD is in the form of flat steel coils. GCD has requested that the Illinois Environmental Protection Agency (Agency) issue a construction permit to allow an increase in iron and steel production.

The Agency has reviewed the permit application and concluded that the project complies with applicable state and federal regulations governing air pollution. As a result, the Agency has prepared a draft of a construction permit which would allow the production increase.

The project is considered significant under the federal Prevention of Significant Deterioration (PSD) rules for carbon monoxide (CO) and sulfur dioxide (SO2). The net emissions change is not considered significant for particulate matter (PM), particulate matter less than or equal to 10 microns in size (PM-10), nitrogen oxides (NOx), volatile organic material (VOM), and lead.

DESCRIPTION OF OPERATIONS:

GCD operates an integrated steel mill. An integrated steel mill starts with iron ore, reduces this material to iron, and then converts this iron to steel. Equipment used includes blast furnaces, basic oxygen furnaces, and continuous casters.

Iron Production

The iron making process begins at two blast furnaces where iron ore, steel scrap, coke, limestone, fluxing agents, and large quantities of hot air react to produce molten iron (a.k.a. hot metal). A by-product "blast furnace gas" is collected at the top of the furnace and is used as a fuel, primarily in stoves to heat the air used in the furnace.

Steel Production

The molten iron is then transported to the basic oxygen furnace (BOF) shop for conversion to steel. After transfer to ladles, the sulfur content of the molten iron is reduced at a desulfurization station. Next, the iron is poured into one of two identical BOF vessels along with steel scrap, limestone and other flux forming materials. A large pipe known as a lance is then lowered down through a hole in the lid of the BOF to within a foot of the iron. Oxygen is then blown into the BOF through the lance, thus burning or oxidizing the carbon in the iron and converting the iron to steel. The liquid steel is then

transferred to the ladle metallurgy station where the properties of the steel may be adjusted by adding alloying materials prior to casting.

Casting

Two continuous casters are used to produce solid steel slabs from the liquid steel. The liquid steel is poured into the top of water-cooled caster molds where it is continuously shaped and cooled until the desired steel slab emerges from the bottom of the mold. The slabs are then cut to the desired length for further processing.

Ancillary Activities

GCD uses several large boilers to provide steam for use in the plant. Fuel is also combusted in the blast furnace stoves, slab reheat furnaces, and several smaller units such as ladle preheaters. For fuel, GCD utilizes the by-product blast furnace gas, as well as by-product coke oven gas, and natural gas and oil.

GCD also operates a coke plant, coke by-products recovery plant, and cold and hot steel rolling operations. No changes in these operations are expected.

DESCRIPTION OF PROPOSED PROJECT:

GCD is requesting an increase in the allowable production rate of iron at the blast furnaces and steel at the basic oxygen furnaces. Continuing improvements in the science of steel making (e.g., higher yield ores, longer life refractory furnace linings, and better timing of equipment maintenance) have enabled increased production from GCD's existing furnaces. Only minor physical changes are needed for the proposed increases (e.g., increased capacity of blast furnace stove blowers).

EMISSIONS:

The operations at GCD are sources of emissions and various control measures are used to minimize these emissions. In particular, the emissions of particulate matter at the blast furnace when tapping molten iron are controlled by a large baghouse, and a large electrostatic precipitator (ESP) is used to control the BOF vessel emissions.

Also of importance to this evaluation are other projects which have affected emissions and which have occurred over the last five years. These projects and the emission changes associated with them are summarized in Table 1.

TABLE 1- EMISSIONS SUMMARY (tons/year)

Other projects changing emissions since 1990	Date	PM/ PM-10	SO2	NOx	CO	VOM	Lead
Removal of blast furnace slag spout hood	1/90	+4.9					
Addition of #2 continuous caster	12/90	+11.7					
Shutdown of ingot teeming operations	4/91	-22.4					
Shutdown of blooming mill	4/91	-3.38	-0.34	-217.8	-22.1	-0.9	
Installation of NESHAP controls at Coke By-Products plant	7/91					-31.6	
Shutdown of batch annealing	12/91	-0.18	-0.04	-8.7	-1.2	-0.3	
Initiation of fugitive dust control program[1]	11/91 - present	-416					
Installation of #8 galvanizing line	96	+4.0/ +3.8	+2.0	+18.4	+10.2	+1.2	
Subtotal		-421.3/ -421.6	-0.18	-208.1	-13.1	-31.6	
Change in emissions from proposed production increase	96	-60.6/ +51.6	+475.8	+238.8	+5,685	+59.3	+0.54
Net change in emissions over the last 5 years		**-481.9/ -370.0**	**+470.3**	**+30.7**	**+5,672**	**+27.7**	**+0.54**
Net change in emissions over the last 5 years for purposes of NSR & PSD[2]		**-98.0/ +14.0**	**+470.3**	**+30.7**	**+5,672**	**+27.7**	**+0.54**

[1]Based on reduction in roadway emissions of 401 tons (428 - 27) and material handling of 15 tons (17 - 2).

[2]Cannot include some PM/PM-10 reductions from fugitive dust control since relied upon these reductions in the implementation plan used to demonstrate attainment with the NAAQS. Of the above 416 tons, 32 tons is considered creditable for PSD and NSR.

R008524

APPLICABLE EMISSION STANDARDS:

All emission sources in Illinois must comply with Illinois Pollution Control Board emission standards. The Board's emission standards represent the basic requirements for sources in Illinois.

Applicable emissions standards for PM and PM-10 for the blast furnaces, BOF vessels, continuous caster, and other operations are found in 35 Ill. Adm. Code Part 212, specifically in Subparts B, K and R.

Fuel combustion unit emission standards are found in 35 Ill. Adm. Code Parts 212, 214, 216, and 217.

After reviewing the technical material in the application, the Agency has determined that the operations at GCD should comply with all applicable standards.

ADDITIONAL REQUIREMENTS FOR MAJOR PROJECTS:

Regulations which address the affect of a project on the air quality are found in 35 Ill. Adm. Code Part 203 (NSR) and the federal rules for Prevention of Significant Deterioration (PSD) - 40 CFR 52.21.

Projects are required to meet additional requirements if the change in emissions is significant as shown below.

- Significant Levels for NSR and PSD:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

The increases in emissions of lead and VOM with increased production are not significant under NSR or PSD.

The increase in emissions of NOx are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under NSR or PSD.

The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations, additional road dust control, and improvements to BOF emissions capture system such that the net emissions change is not significant under NSR or PSD.

The increases in emissions of SO2 and CO are significant under PSD. Accordingly, the project is considered a major modification and must comply with the requirements of PSD.

The requirements of PSD include a demonstration that best available control technology (BACT) will be used for SO2 and CO emissions at affected units, an analysis of air quality impacts, and an analysis of the impacts of the project on visibility, vegetation's and soils. The Agency has determined that these requirements have been met.

GCD has shown that work practices used for SO2 and CO constitute BACT as used by other steel mills for these pollutants. The air quality analysis included with the application shows that increased production will not cause a violation of the NAAQS for SO2 or CO. Increased production also will not significantly affect soils, vegetation, or visibility.

DISCUSSION OF PM-10 ATTAINMENT STATUS:

Of special concern for this project is the emissions of PM-10, since GCD is located in an area that is designated as nonattainment for PM-10 air quality. The Agency is currently working to reclassify the Granite City area from nonattainment with the National Ambient Air Quality Standard (NAAQS) to attainment. The modeling evaluation performed by the Agency shows that the area will continue to comply with the PM-10 air quality standards at the level of emissions associated with the requested increase in production. This is in part due to the stringent levels of control now required to control process emissions and fugitive emissions from roadways and material handling. These measures have resulted in substantial reductions in PM-10 emissions in the area, such that the last exceedance of the PM-10 air quality standard was monitored in 1990. It is also due to substantial improvements made by GCD to the BOF control system. In particular, GCD has added a fourth section to the BOF ESP at an approximate cost of $7,000,000. This provides additional capacity for the ESP to collect and control emissions from the BOF and reduce the amount of uncaptured PM-10 that would otherwise escape through the top of the BOF shop. As part of this permit, GCD will now be required to comply with a more stringent limit on uncaptured emissions, i.e., 20 percent opacity on a three minute average versus the current limit of 30% opacity on a six minute average.

Emissions modeling performed by the Agency shows that the PM-10 NAAQS will be met at the emission levels which could occur at the proposed rates of increased production. That is, modeling shows that the air quality will meet the national standard after this project.

In addition, GCD has also agreed to further control emissions through the sweeping of key Granite City public streets and through housekeeping and sweeping measures in the area below and surrounding the BOF ESP. These reductions are not included in the formal accounting of emissions, but will lower emissions levels in Granite City. Finally, GCD has recently started using a state of the art Enviro-Whirl™ road sweeper which should provide even better dust control from plant roads.

CONTENTS OF PERMIT:

The permit specifies required control practices to ensure that all applicable emission limits and requirements are met both initially and on a continuing basis. The permit also contains conditions on emissions, operations, production, recordkeeping, compliance procedures, testing, and reporting.

REQUEST FOR COMMENTS:

It is the Agency's preliminary determination that the proposed project meets all applicable State and Federal air pollution control requirements. Accordingly, the Agency is proposing to issue a permit for this project.

Comments are requested by the Agency on the proposed issuance of this permit and the proposed conditions of the draft permit. Comments must be addressed to the Illinois Environmental Protection Agency, Division of Air Pollution Control, Attention: Jim Ross, P.O. Box 19506, Springfield, Illinois 62794-9506.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/782-2113

P.O. Box 19506, Springfield, IL 62794-9506

DRAFT 11/03/95

CONSTRUCTION PERMIT

PERMITTEE

Granite City Division
of National Steel Corporation
Attn: Joseph S. Kocot
20th & State Street
Granite City, IL 62040

Application No.: 95010001 I.D. No.: 119813AAI
Date Received: January 3, 1995
Subject: Production Increase
Date Issued:
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in the allowable production rate of iron (from 2,372,500 to 3,165,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year) as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

1. Prior to issuance of this permit, a draft of this permit has undergone a public notice and comment period, and a public hearing was held.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed

0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(1).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOF's) shall not exceed 11,000 net tons per day, averaged over any calendar month, and;

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7a. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 0.225 lbs PM-10 per ton of steel produced, and;

b. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr. Notwithstanding the limitations set forth in special condition (a) above the emissions of PM-10 from the BOF ESP stack shall not exceed 60 lbs/hr for any one hour period.

8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis.

9a. The Permittee shall determine the opacity from the BOF roof monitor on at least a weekly basis.

Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

d. These determinations shall be recorded in a log book, which includes the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.

10. The Permittee shall follow the BOF operating procedures and requirements specified in attachment A. These requirements are designed to ensure proper operation of the BOF control system. These procedures shall be posted in the BOF pulpit (a.k.a., control room).

11. Flame suppression shall be used and maintained during the entire tapping process.

12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency of the charging and primary hoods:

i. Set point requirements while only a single BOF vessel is in operation;

A. Minimum set point during charging process: 550,000 cfm;

B. Minimum set point during refining process: 650,000 cfm;

C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);

ii. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the set point shall be set to establish the total draft necessary to control the corresponding portion of the process which is occurring on each vessel during the overlap. For example, minimum set point while charging at one vessel and tapping at the other would be equal to that necessary to establish a flow of 700,000 cfm (i.e., 550,000 + 150,000).

iii. Overlapping operations of the BOF vessels is allowed only as specified in operating permit application number 72080043.

iv. The BOF capture system shall be operated at the above minimum set points until and unless the Agency approves a lower minimum setpoint based on a demonstration that a better level of particulate matter control will occur, except for purposes of emissions testing as related to the set point.

b. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder of the stack gas flow rate as measured by the stack gas flow meter during ESP use.

c. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

d. The stack gas flow meter shall be calibrated on at least a quarterly basis.

13a. Within 270 days of the date issued of this permit, the Permittee shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the various exhaust ventilation rates or levels of exhaust ventilation through the main downcommer duct of the ESP emissions capture and transport system.

b. The monitoring system shall be designed to be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated, tested and maintained to ensure accurate and useful data.

d. The Agency may allow an equivalent system or method instead of the above monitoring system provided the Permittee demonstrates, and the Agency approves, that such system or method will ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks in an equivalent manner, and that such system or method can be installed and operated within the time period required for the monitoring system as stated in this permit.

14a. The Permittee shall visually inspect at least monthly all visible hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which includes the following:

i. Operating time of the BOF;

ii. Operating time of the capture systems and performance parameters, including air flow and fan amperage through each fan motor, gas temperature at inlet to ESP, and steam injection rate;

iii. Operating time of the ESP and performance parameters, including voltage and amperage of each section, number of sections in use;

iv. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450.

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

i. Natural Gas usage: 190 million ft3 per month and 1,145 million ft3 per year;

ii. Blast Furnace Gas (BFG) usage: 30,800 million ft3 per month and 185,030 million ft3 per year;

iii. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the Ironmaking area shall be swept or flushed at least five times per week.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

i. The date (and time for the gate areas) each road or area was treated;

ii. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

iii. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

iv. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

v. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

vi. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

i. At least weekly, the quarter mile segment of 16th street in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

ii. At least weekly, segment of 20th street between Lee and Quincy roads;

iii. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total), except that compliance with annual iron and steel production limits shall be determined based on a calendar year.

33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who

shall be able to make the opacity readings required by this permit.

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on 0.0497 mmft3 BFG generated per net ton of hot metal produced.

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

i. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

ii. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

iii. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of

being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

STARTUP AND TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source, and supersede such conditions in cases where a conflict exists.

38. Operation at the increased production rates specified in this permit is allowed for 270 days from the date issued under this construction permit.

39a. The following tests shall be performed to demonstrate compliance with the conditions of this permit within 270 days from the date issued of this permit:

A. Blast Furnace testing: The emissions of particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides, and the opacity from the blast furnace casthouse stack shall be measured. These tests shall be designed to verify compliance with 35 Ill. Adm. Code 212.445 and the requirements of this permit;

B. Hot Metal Desulfurization testing: The emissions of particulate matter from the desulfurization baghouse shall be measured. These tests shall be designed to verify compliance with the requirements of this permit;

C. BOF testing: The emissions of particulate matter, carbon monoxide, and lead from the BOF ESP stack, and the opacity from both the BOF ESP stack and BOF Shop shall be measured. These tests shall be designed to verify compliance with 35 Ill. Adm. Code 212.446, 212.458 and the requirements of this permit;

D. Fuel Combustion Units testing: The emissions of particulate matter from a representative boiler while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

E. BFG generation testing: The amount of blast furnace gas generated (mmft3) per ton of hot metal produced shall be determined. The Agency may waive this requirement for testing providing the Permittee submit a sufficient explanation of how BFG generation is determined with justification that such determination is appropriate for purposes of compliance determinations with this permit.

b. These tests shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

ci. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5
Sulfur Dioxide	USEPA Method 6
Nitrogen Oxides	USEPA Method 7
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10
Lead	USEPA Method 12

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 60 days prior to the actual date of testing of the BOF, a written test plan shall be submitted to the Agency for review and approval. This plan shall be describe the specific procedures for testing the BOF, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum

emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:
- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate
- determined emission factor
- compliance demonstrated - Yes/No
- other pertinent information (i.e., for the BOF, pulpit set point for each process of the BOF cycle - charging, refining, and tapping);

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,
- pertinent process information (e.g. fuel or raw material consumption)

- control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized and in no case later than upon the submittal of the operating permit application for this production increase.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Source Emission Test Specialist
Intercontinental Center
1701 1st Avenue
Maywood, Illinois 60153

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

REPORTING

40. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois EPA
Bureau of Air
Compliance Unit
P.O. Box 19276
Springfield, IL 62794-9276

41. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

i. Iron and steel production (tons/month and tons/yr, each);

ii. Natural gas and BFG usage (mmft3/month and mmft3/yr, each);

iii. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF MAJOR SOURCE RULES

42a. As a consequence of the above conditions, this permit is issued based upon the following changes in emissions, as further described in Table 6, accompanying increased production as allowed by this permit:

i. The increases in emissions of lead and VOM are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration;

ii. The increase in emissions of NOx are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NOx	SO2	CO	VOM	Lead
51.6	(-60.6)	238.8	475.8	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
20.4	20.6	18.4	0.2	10.2	1.2	0.0

- Net emission changes:

PM-10	PM	NOx	SO2	CO	VOM	Lead
+14.0	-98.0	+30.7	+475.6	+5,672	+27.7	+0.54

- Significant Levels:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Explanatory Note:
PM = particulate matter = particulate;
PM-10 = particulate matter less than or equal to 10 micrometers in size;
SO2 = sulfur dioxide;
NOx = nitrogen oxides;
VOM = volatile organic material;
CO = carbon monoxide;
mm = million;
gr/dscf = grains per dry standard cubic foot;
acfm = actual cubic feet per minute;
mmcf = million cubic feet;
Mgal = thousands of gallons.

If you have any questions on this permit, please call Jim Ross at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES.JRR.G-PERM.DOC

cc. IEPA, FOS Region 3

Permit Application #95010001

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping)- captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO2	0.2006	422.0
NOx	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0155	24.53
PM-10	0.0155	24.53
SO2	0.0104	16.46
NOx	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO2	0.0100	15.83

Permit Application #95010001

TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.02548	40.32
PM-10	0.02548	40.32
SO2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00279	6.01
PM-10	0.00279	6.01

Permit Application #95010001

TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack (charge, refine, tap)

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.16	262.80
PM-10	0.16	262.80
NOx	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.1934 lbs/hr	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0987	176.71
PM-10	0.06614	118.40
Lead	0.0129 lbs/hr	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.03721	58.88
PM-10	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09 tons/yr

Permit Application #95010001

TABLE 2 (cont.)

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00032	0.57
PM-10	0.00032	0.57

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0016	2.86
PM-10	0.0016	2.86

6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0050	7.94
PM-10	0.0050	7.94

Permit Application #95010001

TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Throughput = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00715	12.80
PM-10	0.00715	12.80

2. Deslagging Station and Material HS.

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00355	6.35
PM-10	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.006	10.74
PM-10	0.006	10.74
NOx	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00852	15.25
PM-10	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.0071	12.71
PM-10	0.0071	12.71

Permit Application #95010001

TABLE 3 (cont.)

6. Slab Ripping

Pollutant	Emission Factor (lbs/ton)	Maximum Emissions (tons/yr)
PM	0.00722	12.92
PM-10	0.00722	12.92

Permit Application #95010001

TABLE 4

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage (mmft3/yr)
Natural Gas (total)	1,145
BFG	185,030

Fuel Oil 365 thousand gallons/yr

1. Natural Gas

Pollutant	Emission Factor (lbs/mmcf)	Maximum Emissions (tons/yr)
PM	5.1	2.92
PM-10	5.1	2.92
SO2	0.6	0.34
NOx	306	175.19
VOM	2.8	1.60
CO	40	22.90

2. BFG

Pollutant	Emission Factor (lbs/mmcf)	Maximum Emissions (tons/yr)
PM	2.9	268..29
PM-10	2.9	268.29
SO2	6.65	6,115.22
NOx	5.28	488.48
CO	13.7	1,267.46

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TABLE 4 (cont.)

3. Fuel Oil

Pollutant	Emission Factor (lbs/Mgal)	Maximum Emissions (tons/yr)	
PM	9.72	1.77	
PM-10	9.72	1.77	
SO2	141.3	25.79	
NOx	55	10.04	
VOM	0.28	0.05	
CO	5.0	0.91	
Lead	0.336	0.61	(waste oil)

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TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

units = tons/year

	PM	PM-10	SO2	NOx	VOM	CO	Lead
Blast Furnace Operations	198	198	468	24	157	-	-
BOF Shop	510	451	-	70	11	16,097	1.43
Continuous Casting Operations	71	71	-	90	-	-	-
Certain Fuel Combustion Units[a]	273	273	6,141	674	2	1,291	0.61
Roadways	27	27	-	-	-	-	-
Material Handling	2	2	-	-	-	-	-

	PM	PM-10	SO2	NOx	VOM	CO	Lead
TOTAL	1,081	1,022	6,609	858	170	17,388	2.04

[a]Blast furnace stoves (A and B), boilerhouse boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

Permit Application #95010001

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NOx	SO2	CO	VOM	Lead
51.6	(-60.6)	238.8	475.8	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NOx	SO2	CO	VOM	Lead
20.4	20.6	18.4	0.2	10.2	1.2	0.0

- Net emission changes:

PM-10	PM	NOx	SO2	CO	VOM	Lead
+14.0	-98.0	+30.7	+475.6	+5,672	+27.7	+0.54

- Significant Levels:

PM-10	PM	NOx	SO2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Permit Application #95010001

ATTACHMENT A

PROCEDURES TO ENSURE PROPER OPERATION
OF BOF ESP CONTROL SYSTEM

1. The emissions control operator shall:

a. Check on a regular basis and report to the emissions control foreman or melter:

i. Any ESP fields down;

ii. Any ESP fields in which the meter readings are showing no current or a fault;

b. Check on a regular basis that doors on all hopper screws are closed;

c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.

2. The melter shall:

a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;

b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;

c Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:

i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;

ii. Check the stack gas pulpit set point for proper setting;

iii. Call the emissions control operator who shall perform the following steps;

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ATTACHMENT A (cont.)

A. Check the AVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;

B. Check to ensure that doors on all hopper screws are closed;

d. Check oxygen blow rates and adjust, if necessary;

e. Check hot metal chemistry;

f. A log shall be maintained of the above checks and any actions taken as a result.

3. The emission control foreman shall:

a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;

b. Check on a regular basis the draft rate set points;

c. Check on a regular basis primary and secondary damper settings;

d. Check on a regular basis ESP operation, including the following:

A. Fields down;

B. Fields indicating shorts and unable to reset;

C. Hopper screw doors are closed;

e. Check on a regular basis blow rates;

f. Check on a regular basis spray water system operation;

g. Check on a regular basis steam injection rate;

h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;

Permit Application #95010001

ATTACHMENT A (cont.)

i. Contact the area manger for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;

j. Notify the emissions control operator and melter when isolation work begins;

k. A log shall be maintained of the above checks and any actions taken as a result.

4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:

a. Use controlled pouring of the hot metal into the BOF vessel;

b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;

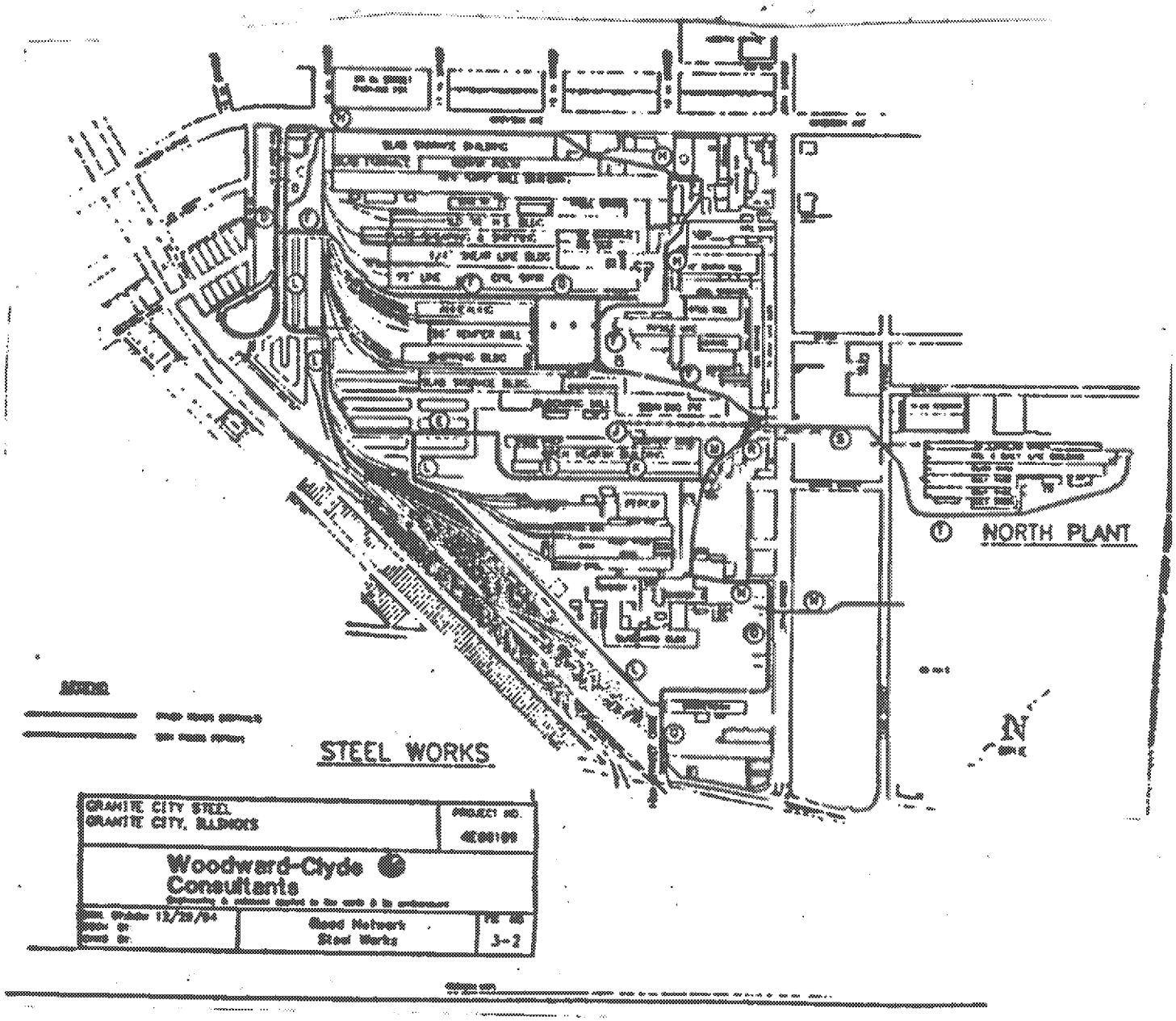
c. Use the most beneficial furnace tilt angle;

d. These procedures shall be posted in the crane operator booth.

Permit Application #95010001

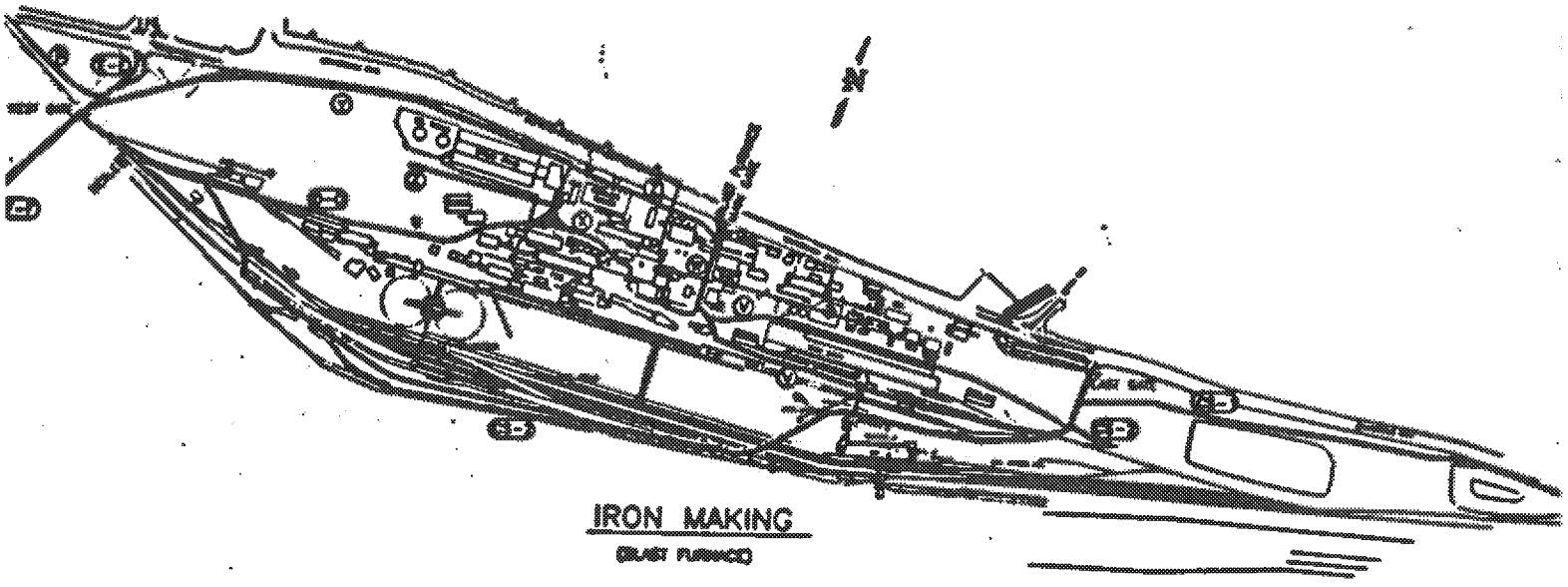
ATTACHMENT B

ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND MAPS SHOWING THE ROAD SEGMENTS



Permit Application #95010001

ATTACHMENT B (cont.)



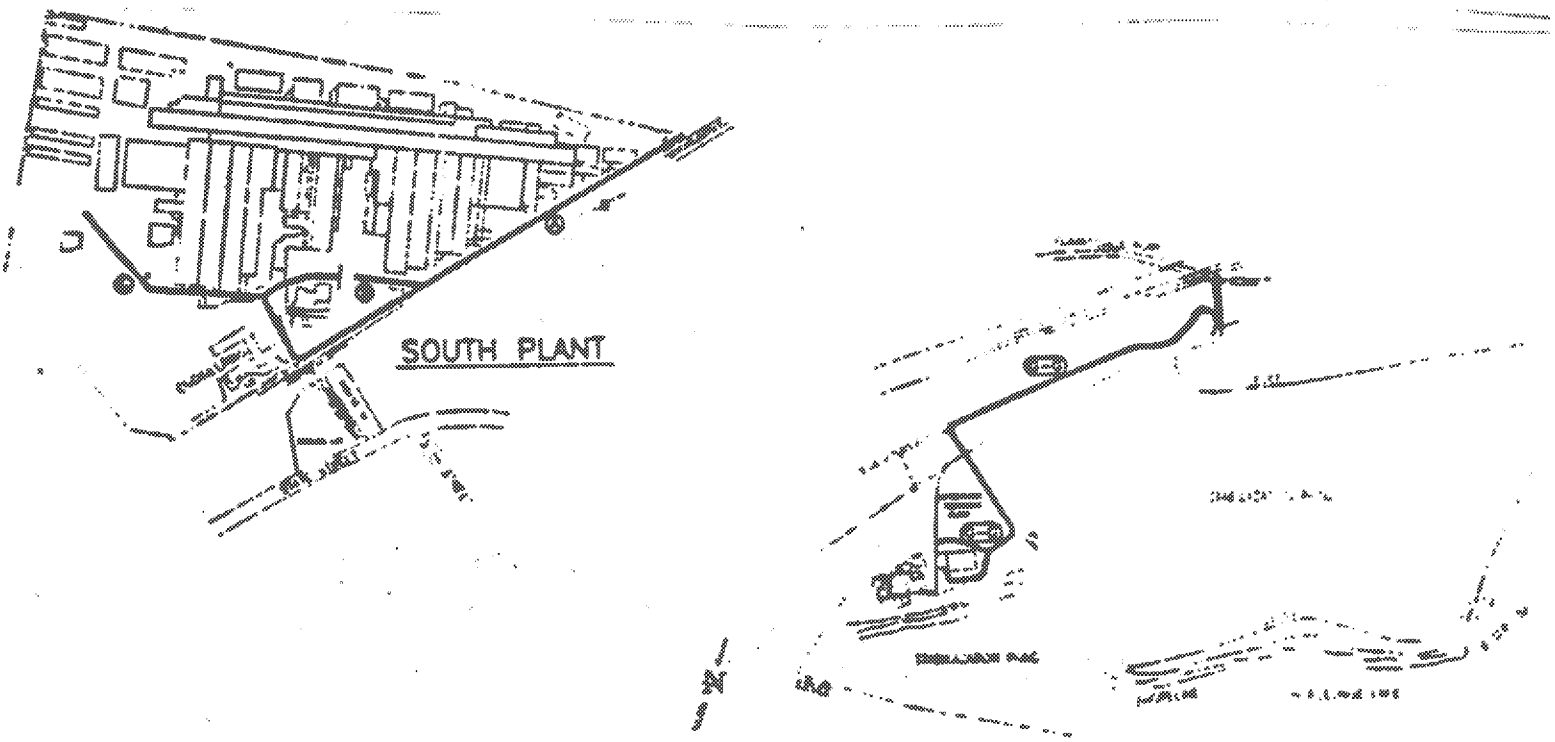
GRANITE CITY STEEL
GRANITE CITY, ILLINOIS

Woodward-Clyde Consultants

Road Network
Iron Making Area

Permit Application #95010001

ATTACHMENT B (cont.)



GRANITE CITY STEEL
GRANITE CITY, ILLINOIS

Woodward-Clyde Consultants

Road Network
South Plant & WWTF

Permit Application #95010001

ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE EMISSIONS OF PM-10

- Historic roadway emissions of 428 tons/yr, minus Future potential roadway emissions of 27 tons/yr, equals a resulting reduction in roadway emissions of 401 tons/yr

- Historic material handling emissions of 17 tons/yr minus Future potential material handling emissions of 2 tons/yr, equals a resulting reduction in material handling emissions of 15 tons/yr.

- Emission reductions resulting from the sweeping of city streets = 52 tons/yr*

- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/yr*

Total reductions in the emissions of PM-10 as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 480 tons/yr

*These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

MEMORANDUM

RECEIVED
DEC 04 1995
IEPA-DAPC-SPFLD

Date: December 1, 1995

To: Brad Frost

From: John Williams

Subject: Granite City Division PSD Permit Hearing.
File 702-95

Attached are copies of Draft Hearing Agenda, Opening Statement, and Public Comment Form. Please review and let me know by December 11, 1995, if any changes need to be made. Thank you.

cc: Jim Ross

COPY

R008564

National Steel

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

February 24, 1995

RECEIVED
MAR 1 1995

CERTIFIED MAIL NO. Z 351 482 504
RETURN RECEIPT REQUESTED

Mr. Donald Sutton, Manager
Division of Air Pollution Control
Illinois Environmental Protection Agency
1340 North 9th Street
Springfield, Illinois 62702

Subject: Amended Application for Modification of the Operating Permit for the Basic Oxygen Furnace,
I.D. No. 119813 AAI,
Application No. 72080043,
Granite City Division Application No. BOF 109354 O

Dear Mr. Sutton:

Granite City Division of National Steel Corporation (the Company) hereby submits the subject amended application for modification of the operating permit for the BOF.

The Company requests that Special Condition 2.a. of the Operating Permit issued January 10, 1994 be altered as follows:

2. Overlapping operations of the BOF vessels is allowed under the following conditions:

a. I. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

INSERT A

EPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER

II the charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (aka., doghouse) and the alloy addition at the vessel tapping has been completed for at least 1 minute.

III sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other vessel in order to satisfy condition (i) above.

IV Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel

and

overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

V condition ii and iii above shall be part of the Standard Operating Procedure (SOP) of the BOF vessels.

Should further information be needed in order to process this application, please contact my office or that of Connie Hickman, telephone (618) 451-4027.

Very truly yours,

Fred Steinkuehler (KL)

Fred Steinkuehler
Director - Engineering Technology

Enclosure
cc: C. V. Hickman
BOFOP2.CVH

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

DATE: September 21, 1995

TO: Rob Kaleel

FROM: Jim Ross JRR

SUBJECT: Lead Air Quality Review for Granite City Steel Proposed Production Increase

Attached is a table which provides the lead emissions associated with the proposed production increase. Please provide answers to the following:

1. Will the NAAQS for lead be maintained at the projected actual lead emissions indicated?

2. What is the impact on the NAAQS of the lead emissions increase resulting from the proposed production increase? (Can they get this by subtracting results from 1 from current #, e.g. 1.2 [illegible] - 10 [illegible] + .2 [illegible])

Lead emissions and their impact were a major public concern of the Acme Steel project and we need to be prepared for questions regarding lead.

If you have any questions or require additional information, contact me. Thanks.

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

cc: Application file No. 95010001, I.D. No. 119813AAI

TABLE 3-7
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - Pb

Projected Emissions Based On: Blast Furnace @ 9,100 NTPD
BOF @ 10,300 NTPD

LINE #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	EMISSION RATE lb/hr	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION TPY	PROJECTED THRUPUT OR production rate	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy
1	0044	03	Boiler #11 - Fuel Oil	0.01600000	lb/Mgal	0.01600000	15.00	Mgal	0.0001	included in line 19	-	-	-
2	0048	03	Boiler #12 - Fuel Oil	0.01600000	lb/Mgal	0.01600000	1.00	Mgal	0.0000	included in line 19	-	-	-
3	0005	01	"A" Blast Furnace - Uncap. Fugitives	0.00039000	lb/hr	0.00039000	8760	hours	0.0017	1.6126	tons proc.	0.00275464	-
4	0006	01	"A" Blast Furnace - Charging	0.00055000	lb/hr	0.00055000	8760	hours	0.0024	1.6126	tons proc.	0.00388475	-
5	0007	01	"A" Blast Furnace - Baghouse Stack	0.00022000	lb/hr	0.00022000	8760	hours	0.0010	1.6126	tons proc.	0.00155390	-
6	0010	01	"B" Blast Furnace - Uncap. Fugitives	0.00036700	lb/hr	0.00036700	8760	hours	0.0016	1.6126	tons proc.	0.00259219	-
7	0011	01	"B" Blast Furnace - Charging	0.00053700	lb/hr	0.00053700	8360	hours	0.0024	1.6126	tons proc.	0.00379293	-
8	0012	01	"B" Blast Furnace - Baghouse Stack	0.00021400	lb/hr	0.00021400	8360	hours	0.0009	1.6126	tons proc.	0.00151152	-
9	0033	01	BOF 2 Vessels Stack	0.16320000	lb/hr	0.16320000	8760	hours	0.7148	1.6578	tons prod.	1.11354036	-
10	0034	01	BOF Roof Monitor	0.01290000	lb/hr	0.01290000	8760	hours	0.0565	1.6578	tons prod.	0.08801882	-
11	0035	01	Hot Metal Reloading - Xfer Pit	0.00002320	lb/hr	0.00002320	8760	hours	0.0001	1.6578	tons prod.	0.00015830	-
12	0037	01	Flux Conv. & Xfer Pts., Bin Floor - BOF	0.00000062	lb/hr	0.00000062	8760	hours	0.0000	1.6578	tons prod.	0.00000426	-
13	0040	01	Hot Metal Chging Ladle Slag Skimmer	0.00002250	lb/hr	0.00002250	8760	hours	0.0001	1.6578	tons prod.	0.00015352	-
14	0103	01	Argon Stirring #1 & #2	0.00020200	lb/hr	0.00020200	8760	hours	0.0009	1.6578	tons prod.	0.00137828	-
15	0105	01	Deslagging Station	0.00240000	lb/hr	0.00240000	8760	hours	0.0105	1.6578	tons prod.	0.01637559	-
16	0107	01	Desulf. Station (inside BOF shop)	0.01330000	lb/hr	0.01330000	8760	hours	0.0583	1.6578	tons prod.	0.09074808	-
17	0120	01	Caster Mold - Casters	0.00113000	lb/hr	0.00113000	8760	hours	0.0049	1.6578	tons prod.	0.00771018	-
18			Boilers -Waste Oil	0.33600000	lb/Mgals		-	-	-	365	Mgals	0.06132000	-
	TOTAL					0.23			0.956			1.395	0.639
			Contemperaneous Changes										0.000
			Net Change										*0.639*

R008567

Illinois EPA
Document Index Form

Batch ID: A000962

Doc ID: 2169908

BREAKm

Bureau ID: 119813AAI **Illinois EPA ID:** 170000125683

Location Name: US Steel Granite City

Category: 03M

Document Date: 01/25/1996

Permit ID: 95010001

Doc ID:

2169908

Batch ID:

A000962M

IEPA ID:

170000125683

Interest ID:

119813AAIQ

Cat ID:

03Mv

Date:

1/25/1996

Permit ID:

95010001

Permit Log:

Keyword:

APP SUPQ

Comment:

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013

BOF CREDIT OPTIONS -10/17/95

REVIEWER JRM

OPTION 1: SELECTED OPTION AS OF 10/17/95.
Premise: Using AP-42 Uncontrolled factors at source, reducing by assumed capture efficiencies, assuming various future increases in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.

Annual production incr. reduced to 3,580,000 tons steel/yr.
Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced.
In this case netting exercise credit needed drops to;
(3,580,000/3,759,000)(266) = **253.3** tons steel
3,321,500 iron goes to 3,162,930
Uncontrolled, at source, PM emission factors per AP-42 and AIRS:

- charge = 0.6 lbs PM/ton hot metal at BOF
- refine = 28.5 lbs PM/ton steel at BOF
- tap = 0.92 lbs PM/ton steel at BOF

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,162,930, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	41.4	9.45	0.03431	90
refine	230.4	52.61	0.19095	99
tap	74.4	16.98	0.06164	90
total:	346.2	79.04	0.2869	
Future Potential				
charge	31.8	7.26	0.017765	95
refine	34.2	7.80	0.019095	99.9
tap*	52.4	11.97	0.029279	95
total:	118.4	27.03	0.066139	

CREDIT = 227.8
Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and

operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- These appear to be the best factors available for each individual process due to fact that can directly correlate the AP-42 factors to test results;
    i. charging and tapping factor are taken directly from test results which have an emission factor reliability rating of A (although appears that uncaptured emissions are not accounted for in these factors since they appear to be a direct measurement of captured emissions);
    ii. refining factor appears to be nearly a weighted average of 3 tests of various emission factor reliability ratings (24.2 rating=A, 37 rating=B, and 30 rating=D).
- Emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- Estimates of charging and tapping hood capture efficiencies are consistent with historical assumptions and seem reasonable.
- Also consistent with historical hood capture efficiencies assumed for Acme.
- Allows insight into emissions from each individual process.

Cons;
- Have to estimate hood capture efficiencies.
- **Difficult to quantify and justify the percent increase in capture for hoods to the improvements at the BOF.**
- Higher hood capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- Assumed 99% historic hood capture efficiency for refining when indications are that have previously assume 99.9%.

OPTION 2:
Premise; using actual measured value of PM at roof monitor per test and assuming 70% improvement of capture system efficiency.

BOF roof monitor - 0.34 lbs PM/ton steel, per test.

- BOF roof monitor = (0.34)(0.67) = 0.2278 lbs PM-10/ton steel

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,759,500

PM-10 from BOF roof monitor:

historic actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ ton steel)	assumed hood capture eff.
charge				no assump.
refine				needed
tap				
total	274.9	62.8	0.2278	
future potential				
charge				70% improve-
refine				ment to capture
tap				for each
total	128.5	29.33	0.06834	

Credit = 146.4

Pros;
- Don't need to make assumptions for hood capture efficiencies.
- Factor is justifiable. Can directly correlate the factor to test results. Factor is the derived from a direct measurement of roof monitor emissions with an emission factor reliability rating of B. Note that all other known tests on roof monitors have yielded factors of 0.28, 0.3, and 0.147 lbs/ton with reliability rating of C for each. Therefore, the factor chosen for use provides the most reliable estimate of emissions.

Cons;
- Difficult to correlate and justify 70% improvement in capture to changes at GCD.
- Does not allow insight into emissions from individual processes.

OPTION 3:
Premise; using AP-42 factor for roof monitor emissions and assuming 70% improvement of capture system efficiency.

AP-42 factor: BOF roof monitor (all sources) - 0.5 lbs PM/ton steel.

- BOF roof monitor = (0.5)(0.67) = 0.335 lbs PM-10/ton steel

However, this factor does not appear appropriate for use at GCD due to the following 2 reasons;

1. Factor is for all sources under the BOF roof, which should include the following uncaptured emissions: BOF charge/refine/tap, hot metal transfer, desulfurization and slagging.
Emissions from hot metal transfer, desulfurization, and slagging operations at GCD are assumed by the Agency to be 100% captured and therefore do not contribute to the roof monitor emissions.
Therefore this emission factor would overestimate monitor emissions since the contribution to the factor from hot metal transfer, desulfurization and slagging are not subtracted out to obtain a factor which represents only those emissions which are exiting out the roof, i.e., from the BOF. Hence the factor should be lower. Unable to determine how much.

2. Appears to be a flaw in the reasoning used to obtain the factor of 0.5. That is, if they simply took, as the test results indicate;
0.34 (measured at roof) + 016 (captured charging) = 0.5 from monitor
Refer to test previously referenced in option 2.
The determination method appears to imply that charging emissions are not captured and that all are emitted at roof monitor, which is not the case at GCD which has a charging hood. Therefore, factor should be 0.34 (as is used in option 3) not 0.5.

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,759,500

PM-10 from BOF roof monitor:

historic actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ ton steel)	assumed hood capture eff.
charge				no assump.
refine				needed
tap				
total	404.2	92.3	0.335	
future potential				
charge				70% improve-
refine				ment to capture
tap				for each
total	188.0	42.9	0.10	

credit = 216.2

Pros;
- emission determinations are consistent with AP-42.
- estimates are lower than those which would occur using Indiana and USEPA methods.

Cons;
- factor not justifiable.
- **difficult to quantify and justify a 70% percent increase in capture for hoods to the improvements at the BOF (example of 70% increase would be going from 90% capture efficiency to 97% on charge and tap, and 99.0% to 99.7% on refine).**

OPTION 4:
Premise: Using AP-42 at building monitor factors for charge and tap, AIRS uncontrolled PM-10 factor for BOF refine, reducing by assumed capture efficiency, assuming various increase in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.

Lower request for annual production increase to 3,580,000 tons steel/yr, credit needed drops to;
(3,580,000/3,759,000)(266) = **253.3** tons

Uncontrolled PM emission factors per AP-42:
* charge = 0.142 lbs PM/ton hot metal - at building monitor
* tap = 0.29 lbs PM/ton steel - at building monitor

Uncontrolled PM factor per AIRS:
* refine = 13.1 lbs PM-10/ton steel - at BOF

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	9.8	2.24	0.00812	90
refine	158.1	36.09	0.131	99
tap	23.5	5.35	0.0194	90
total:	191.4	43.68	0.15852	

OR

If assume that these factors represent uncaptured charging and tapping emissions at the roof monitor - then don't reduce by hood capture since hood capture already accounted for, which the comment on the test Table suggests. Comment is ambiguous.

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	98.0	22.37	0.08119	not needed
refine	158.1	36.09	0.131	99
tap	234.5	53.53	0.1943	not needed
total:	490.6	111.99	0.40649	

Future Potential				
charge				
refine				99.7
tap*				
total:				

Pros;
- Uses AP-42 and AIRS factors.
- Charging and Tapping estimates consistent with historical estimates.

Cons;
- The factors for charging and tapping have a lower reliability rating (B as compared to A) and do not appear as accurate as factors used in option 1.

- Factors used for charging and tapping appear to provide the least reliable estimate of emissions at roof due to the following:
The tests on which the charge and tap roof monitor factors were based used an in-stack filter to measure emissions captured by a primary hood during each process. An estimate of uncaptured was then made assuming a hood capture efficiency of 93% for tapping and 78% for charging. They then assume that all uncaptured emissions were emitted out the roof - which is the emissions the factor supposedly represents. These factors then are only as good as the assumed capture efficiencies and insert another assumption into an already assumption saturated estimate. In conclusion, using these factors will not give as good an estimate of roof emissions as the other options and hence it should not be used.
Also, GCD has a hood dedicated to charging, therefore this factor is not representative of situation at GCD, i.e., these are emissions with a primary hood capturing both charge and tap.
- BOF factor of 13.1 is inconsistent with available data in that it appears to use PM-10 fraction of 46% (i.e., 28.5 x .46 = 13.1) which is the AP-42 fraction for charging, however, the emissions rate is that for refining.

Notes:
- Most representative factor for charging may be: uncontrolled - 0.16 lbs PM/ton steel, since this was measured in a charging hood which is consistent with GCD capture system.
- No definitive way to estimate historic and future BOF roof emissions.
- Options 1 and 2 appear to be the most justifiable.

Common assumptions for all options:
- 67% of PM is PM-10 which is value presented in AP-42 Table 7.5-2 for top blown furnace. LTV Steel study supports conclusion that large particles will be emitted from roof, hence measured PM of tests is not necessarily mostly composed of PM-10, as was previously estimated.
- all PM-10 not captured by hoods is emitted through roof.

BACT DEFICIENCIES WHICH NEED ADDRESSED IN APPLICATION

1. Need to address the feasibility of the use of lower sulfur coals to "prevent" SO2 emissions.

2. Need to address the feasibility of replacing oil use with natural gas use for SO2 emission prevention. Why is potential oil use increasing so much as a result of production increase?

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AUG 22 2013
REVIEWER JRM

R008577

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

COVER SHEET FOR TELEFAX DOCUMENTS

Date: 10/11/95

Time: 1150

To: Larry Stephenson

Company: GCD

Number of Pages: 2 (including cover sheet)

From: Jim Ross, Air Permit Section

If any difficulty is experienced with this transmission, please stop and call back at 217/782-2113.

Special Instructions:

Add'l info. needed to process application

For future reference, our Telecopy Number is 217/524-5023.

BACT DEFICIENCIES WHICH NEED ADDRESSED IN APPLICATION

1. Need to address the feasibility of the use of lower sulfur coals to "prevent" SO2 emissions.

2. Need to address the feasibility of replacing oil use with natural gas use for SO2 emission prevention. Why is potential oil use increasing so much as a result of production increase?

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

R008579
EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013

12/10/13

Illinois EPA response to USEPA comments on Granite City Steel draft SO2 FESOP. REVIEWER JRM

USEPA Comment 1. We need the rationale for grouping the sources this way.

Response: Sources were grouped to be consistent with modeling, which was based on similarity in operation and stack/emission parameters and location and hence model impact.
Reheat furnaces 1-3 are similar types of operations and have similar stack parameters but were separated from furnace 4 due to the stack on furnace 4 having a significantly different location.
The operating groups of Blast furnace stoves A & B, Boilerhouse boilers 1-10, and Blast furnace boilers 11 & 12 are similar operations in a similar location with similar stacks and were therefore grouped together.
GET ROB's INPUT.

USEPA Comment 2. Please demonstrate that the group emission limits are not relaxations of current limits. Do other short term limits or fuel quality limits apply?

Response: The existing state rules are not superseded by the FESOP and still apply to the units. The units must comply with the limits of the FESOP, any limits on existing permits, and any applicable state rules. Therefore the permit limits are not a relaxation of any existing limits. In no case are the limits of the permit less stringent than existing state rules - as can be seen below;
ROB IS DEVELOPING A COMPARISON CHART.
There are numerous other emission and fuel usage limits and fuel quality limits in existing operating permits. All of these existing limits remain applicable.

USEPA Comment 3. Monitoring the change in height of the fuel oil in the tank and converting to gallons used is not an acceptable means of determining compliance. The method is too imprecise. If the tanks are large, a great deal of oil would have to be used to even register a drop in tank level. Fuel oil usage should be measured by a flow meter in the feed line.

Response: Tank 101 used for boilers 11 and 12 and tank 102 used for boilers 1-10 are both 60,000 gallon tanks. One inch of height contains 250 gallons of oil. Each oil dispensing system is continuously recirculated from the tank to the boilers and back to the tank. Due to the size of the tanks and recirculating design of the system, difference in oil heights is considered a more accurate measure of the

volume of oil used than taking the difference of inlet and outlet flow meters on the oil lines.
Also note that fuel oil is rarely used (approximately once a year to test firing ability). Will look into putting a condition limiting the amount of time fuel oil can be fired (e.g. 48 hours/year).

USEPA Comment 4. What fuels does this facility use? Do they use distillate or residual oil?

Response: The facility uses the following fuels; natural gas, blast furnace gas (BFG), coke oven gas (COG), intermediate light oil, recycled oil, and residual oil. Of these fuels, the greatest SO2 emissions are generated during the combustion of COG, followed by residual oil.

USEPA Comment 5. If the facility uses residual oil, it would be necessary to require continuous sampling in the fuel oil lines, or a continuous emission monitor (CEM) to directly measure SO2 emissions. Residual oils can differ greatly from shipment to shipment, and could stratify within the tanks.

Response: Continuous sampling in the fuel line or a CEM does not seem appropriate at this time due to the low annual usage of fuel oil at Granite City. In addition, the fuel oil dispensing system at Granite City is a recirculating system which serves to mix the oil in the tanks and thus prevent statification. The permit does account for the difference in residual oil from shipment to shipment in that a new weighted average of the sulfur content and density must be determined after each instance that oil is added to the tank (refer to condition 12e). The method of determining the sulfur content of the fuel oil in the tanks currently in the permits is considered is thought to be reasonably accurate.

USEPA Comment 6. We understand that the blast furnace gas contains very little sulfur. Does this facility combust blast furnace gas? The sulfur content of the blast furnace gas should be verified to determine whether sampling and analysis should be required.

Response: Yes, BFG is combusted at this facility. The sulfur content of the BFG was determined through testing on November 12, 1991 to be 0.00175 weight %. The following emission factor was derived based on the test data and AIRS document:

0.02 lbs SO2 per million btu from BFG

The factor used for COG is;

2.2 lbs SO2 per million btu from COG

Hence, worst case emissions are represented when COG is being fired. The emissions for the fuel combustion units on the permit were calculated using the COG factor and therefore these limits will never be exceeded when BFG is being fired.

USEPA Comment 7. Please explain the derivation of the constant term 0.269 in Condition 14b equation for determining the SO2 emissions attributable to coke oven gas.

Response:
To achieve the desirable units of lbs SO2 per day, which allows direct comparison to the permit limit, and assuming all of the H2S is converted into SO2 during combustion, the following equation is used:

$$\frac{\text{lbs SO2}}{\text{day}} = \left(\frac{\text{X gr H2S}}{\text{(ft3 COG)}}\right) \frac{\text{(1000 ft3 COG)}}{\text{(day)}} \frac{\text{(64 lbs SO2)}}{\text{(34 lbs H2S)}} \frac{\text{(1 lb)}}{\text{(7,000 gr)}}$$

Simplifying the bold portion gives:

$$\frac{\text{lbs SO2}}{\text{day}} = \frac{\text{(X gr H2S)}}{\text{(ft3 COG)}} \times 0.269$$

USEPA Comment 8. Condition 14c and d allow the use of an emissions factor in determining SO2 emissions from the blast furnace casthouse and iron spout baghouse. We would like more information about these emissions factors:

a. What was the sulfur content in the hot metal at the time of the test?

Response:
The average sulfur content of "A" furnace hot metal during testing was 0.041 % (max = 0.046 %). The average sulfur content of "B" furnace hot metal during testing was 0.028 % (max = 0.035 %).

b. What is the typical sulfur content of the hot metal?

Response:
The typical hot metal sulfur content for the month of the test, July 1993, was "A" - 0.03 %, "B" - 0.034 %. Note that the Making, Shaping, and Treating of Steel book indicates that the maximum sulfur content of hot metal is 0.05%.

c. Were the tests conducted on the baghouse stack?

Response: Yes, the tests were conducted on the casthouse baghouse stack and the iron spout baghouse stack.

d. Were both blast furnaces in operation at the time of the test?

Response: Yes, the furnaces were simultaneously tapping during the time of the test.

e. Were the emissions collected in the emissions control hood?

Response: Yes. There are a total of eight hoods collecting emissions and ducting to the two baghouses.

f. Was the emission factor adjusted to reflect possible sulfur variability in the hot metal before the factor was placed in the permit?

Response: Emission factor variability, which includes variability due to varying sulfur content, is accounted for through a safety factor given in the allowable emissions of the permit. The permitted allowables are 1.5 times that of the maximum potential calculated when using the test emission factor, as explained below.
The blast furnaces are limited by permit conditions to 6500 tons/day of hot metal production. Assuming a cast last 2 hours and 8 casts per day for a total of 16 hours of cast emissions per day or 5,840 hours/year. Using the test emission factor gives maximum emissions of;

$$6500\ \frac{\text{tons}}{\text{day}} \times 0.173\ \frac{\text{lbs SO2}}{\text{ton}} = 1{,}124\ \frac{\text{lbs SO2}}{\text{day}} = 205\ \frac{\text{tons}}{\text{year}}$$

The above emissions theoretically represent the maximum potential emissions from the blast furnaces.
The limits on the permit were calculated as follows:

$$1{,}124\ \frac{\text{lbs SO2}}{\text{day}} \times 1.5 = 1{,}688\ \frac{\text{lbs SO2}}{\text{day}}$$

$$205\ \frac{\text{tons SO2}}{\text{year}} \times 1.5 = 308\ \frac{\text{tons SO2}}{\text{year}}$$

g. Can this emission factor be verified from similar testing at other sources?

Response: The Illinois EPA does not know of any other testing done for SO2 emissions on a blast furnace operation similar to that of Granite City Steel's. The tests performed at Granite City were reviewed by the stack test specialists and results were found to be acceptable.

14-Dec-93

COMPARISON OF CURRENT AND PROPOSED ALLOWABLE SO2 EMISSIONS
FOR GRANITE CITY STEEL

I.D.	SOURCE DESCRIPTION	CURRENT ALLOWABLE (LB/DY)	PROPOSED ALLOWABLE (LB/DY)	
17000	Blast Furnace C.H. Baghouse	184224	1688	
17005	Blast Furnace I.S. Baghouse	66120	84	
17010	B Blast Furnace Stoves	24136	10740	(1)
17020	Boiler House 1; 1-7	22172	15036	(2)
17030	A Blast Furnace Stoves	21063	10740	(1)
17040	Boiler 11 Blast Furnace	11878	10740	(3)
17050	Boiler 12 Blast Furnace	11878	10740	(3)
17060	Boiler House 1; 8-10	9503	6444	(2)
17070	Steam Boilers 1	7918	0	
17080	Steam Boilers 2	7918	0	
17090	Steam Boilers 3	7918	0	
17100	Steam Boilers 4	7918	0	
17110	Battery A underfiring	6632	6632	
17120	Battery B underfiring	6589	6589	
17130	Slab Furnace No. 1	5663	3256	(4)
17140	Slab Furnace No. 2	5663	3256	(4)
17150	Slab Furnace No. 3	5663	3256	(4)
17170-080	No. 6 Galvanizing Furnace	1848	0	
17180-240	Galvanizing Line 7A Furnace	1851	0	
17260	By-Product Flare	42033	21490	
17340	Slab Furnace No. 4 (Reheat)	26132	11880	
30010-020	No. 6 Galvanizing Pot	1320	0	
30030-160	Ladle Drying Preheaters	5279	2787	
30170-190	Oven Charging - A Battery	23	23	
30200-220	Oven Charging - B Battery	23	23	
	TOTAL	491365	125404	

1. Blast furnace stoves operating group limit: 21,480 lb/dy.
2. Boiler house boilers 1-10 operating group limit: 21,480 lb/dy.
3. Blast furnace boilers 11-12 operating group limit: 21,480 lb/dy.
4. Slab furnace operating group limit: 9,768 lb/dy.

10-06-95

PM-10 SHORT TERM MODELING ANALYSIS
GRANITE CITY STEEL

This culpability analysis used an inventory that reflects the non-expansions base case for Granite City Steel. Generally, unpaved and paved roads were modeled with control efficiencies listed in the September 12th handout. Please note that the point source, 21760 - BOF Two Vessels, was modeling at 68.5 lbs./hr. before condensables. This is an emission based on the an increase of 25% and should actually be set at 54.8 lbs./hour. Also, the Roof Monitor Emissions - Charging, Tapping, & Refining were set at 90 lbs./hr. which may be higher than what is needed here. When studying these culpabilities please consider that the contributions for these sources will be somewhat lower than what is shown.

Matthew Will

EPA - DIVISION OF RECORDS MANAGEMENT
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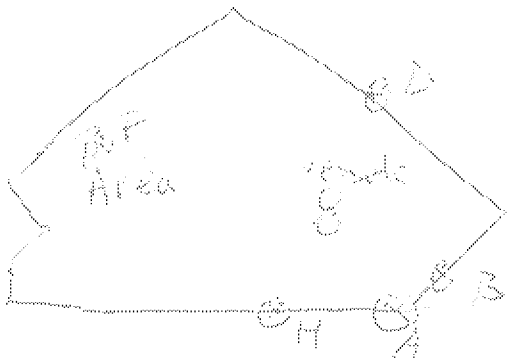
AUG 23 2013
REVIEWER JRM

PM-10 SHORT TERM MODELING ANALYSIS
GRANITE CITY STEEL

UTM: 748850N, 4286205E (RECEPTOR B)
JULIAN DATE: 019
YEAR: 1986

PM-10 I.D.	SOURCES	CONTRIBUTION (ug/m^3)
21603	Slab Furance #1, #2, & #3 at the Hot Strip Mill (on fuel oil)	1.72
21760	BOF - Two Vessels	18.04
21790	Flux Conveying and Transfer Points	1.13
21820	Hot Metal Charging Ladle Slag Skimmer	1.35
22280	Materials Handling System	2.33
22290	Desulf Station - Inside the BOF Shop	1.36
22294	Argon Stirring & Alloying Station	1.15
26000-26030, 26070-26130	Roof Monitor Emissions - Charging, Tapping, & Refining (21770)	53.42
26140-26270	Roof Monitor Emissions - Ladle Preheaters Dryers (5) - COG (21800)	5.75
26340-26360	Roof Monitor Emissions - Caster Mold I, Ladle to Tundish, Tundish to Mold (22090)	1.66
26370-26400	Roof Monitor Emissions - Slab Cut-Off I(22110)	5.09
26490-26520	Roof Monitor Emissions - Caster Mold II, Ladle to Tundish, Tundish to Mold (22291)	3.42
26530-26560	Roof Monitor Emissions - Slab Cut-Off II (22293)	4.60
24090-26092, 24097, 24119-26128	Unpaved Road "L"	2.96
24133-24139	Unpaved Road "N"	4.25
24132,24134	Unpaved Road "J"	1.18
24129, 21135, 24136, 24141-24144	Paved Road "O"	2.53
	All Other Area Sources	1.36
	All Other GCS Sources	2.58
	Total Listed Source Contribution	115.88
	Other Sources	22.27
	Total Source Contribution	138.15
	Background	31.30
	Receptor Total	169.45



Some voids 75%
using worst case, considering background count

09/29/95

ADDITIONAL INFORMATION NEEDED FOR GCD PRODUCTION INCREASE APPLICATION

1. Data on historic capture system flow rates for each BOF operation (i.e., flow rate during charge, during refine, during tap). Also data on proposed flow rates for each.

2. Description of current BOF capture system. Include number of fans, location of fans, fan size, location of flow meters, description of meters, etc.

3. Description of fume suppression system on BOF tapping. Can fume suppression be used elsewhere (e.g., charging, hot metal transfer, blast furnace tapping and runners)?

4. List of improvements to BOF capture and control made over the last 5 years.

5. Provide acceptable production increase in tons/yr if based on an annual limit.

6. Provide data on sulfur content of coals used - max and avg.

10/6/95 Need to address "feasibility" of using low sulfur coal to reduce SO_2 emissions at Blast furnace and from use of BFG.

G-CONCER.DOC

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Justify use of higher coal:
- list BOF improvements
- list new permit requirements.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

COVER SHEET FOR TELEFAX DOCUMENTS

Date: 7/27

Time: 4:30

To: Larry Stephenson

Company: ACS

Number of Pages: 3 (including cover sheet)

From: Jim Ross, Air Permit Section

If any difficulty is experienced with this transmission, please stop and call back at 217/782-2113.

Special Instructions:

For future reference, our Telecopy Number is 217/524-5023.

R008590

National Steel

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

September 8, 1995

CERTIFIED MAIL NO. Z 386 196 265
RETURN RECEIPT REQUESTED

IEPA - DIVISION OF RECORDS MANAGEMENT
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REVIEWER JRM

RECEIVED
SEP 14 1995

Mr. Donald Sutton
Manager, Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1340 North 9th Street
Springfield, Illinois 62702

Dear Mr. Sutton:

Subject: Application for Production Increase
Permit, Application No. 95010001,
I.D. No. 119813 AAI

The subject application was originally received by the Agency on January 3, 1995.

The time in which the Agency amy act on this application is hereby extended to November 30,1 995.

By consenting to the extension of time in which the IEPA may act to November 30, 1995 the Applicant does not otherwise waive any of the statutory provisions of Section 39 and 39.1 of the Illinois Environmental Protection Act in the event the IEPA fails to act upon the permit application by November 30, 1995, nor does it waive any of the provisions of the Clean Air Act Amendments of 1990 or the rulemaking thereunder.

Should additional information be needed, please contact my office or that of Larry Siebenberger, telephone (618) 451-3391.

Very truly yours,

Joseph S. Kocot
Director of Plant Maintenance

cc: C.V. Hickman
PRODINCR.CVH

National Steel

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

September 8, 1995

CERTIFIED MAIL NO. P 386 196 265
RETURN RECEIPT REQUESTED

RECEIVED
SEP 08 1995
IEPA - DAPC - SPFLD

Mr. Donald Sutton
Manager, Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1340 North 9th Street
Springfield, Illinois 62702

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Very truly yours,

Joseph S. Kocot
Director of Plant Maintenance

cc: C.V. Hickman
PRODNCR.CVH

cc: Don S.
Chris R.
Jim Ross
orig. Permit to file

R008592

National Steel

V. John Goodwin
President, CEO & COO

National Steel Corporation
4100 Edison Lakes Parkway
Mishawaka, IN 46545
Telephone: (219) 273-7855
Facsimile: (219) 273-7868

September 13, 1995

RECEIVED

SEP 14 1995

ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR
STATE OF ILLINOIS

Ms. Mary Gade, Director
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Mary:

I wish to thank you for the continued cooperation and effort by the Bureau of Air staff to bring the review process for the Granite City Division production increase permit filed December 30, 1994 to a timely and successful completion.

It is my understanding that an intermediate production increase permit will be issued by September 21, 1995 and the full production increase permit will be issued for public notice immediately thereafter. As you know, the timely review and issuance of the intermediate and full production increase permits are key to National Steel's survival strategy.

During your September 1, 1994 Granite City Division visit, National Steel committed, up front, to install a fourth electrostatic precipitator ($7.0 million) at the Basic Oxygen Furnace shop by September 1, 1995 to assure future compliance at the increased production rates. The precipitator began operation June 28 and is performing extremely well. National Steel has committed up front and will continue to work with the Illinois EPA to address the issues necessary to successfully complete the permit process.

Yours truly,

IEPA - DIVISION OF RECORDS MANAGEMENT
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REVIEWER JRM

cc: Bharat Mathur
Bureau Chief, Bureau of Air
Illinois Environmental Protection Agency
1340 North 9th Street
Springfield, Illinois 62702

R008593

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

MEMORANDUM

DATE: August 25, 1995

TO: Rob Kaleel

FROM: Don Sutton DRS

SUBJECT: Pending permit application for Granite City Division (GCD) of National Steel Corporation

The purpose of this memo is to clarify the data needed from AQPS for the permit section to proceed with a netting exercise for the application. In addition, we wish to emphasize the importance of expediting the determination of this data since the Agency cannot proceed effectively without it.

In explanation, the goal is to determine the roadway emission reduction that can be used as a contemporaneous decrease in the netting exercise. The amount of roadway emission reduction that is creditable is the amount that was not relied on for demonstrating attainment in the PM-10 SIP.

We need to know;

1. the level of emissions which were modeled to show attainment,
2. the highest level of roadway emissions which could be modeled and still show attainment, and
3. the level of emissions which would have been modeled and would show attainment if the attainment demonstration had not accounted for a nominal 25% production increase.

Our main interest is roadway emissions, from both paved and unpaved roadways. However, since the number modeled for roadway emissions depends on the emissions modeled for process sources, we also need to know the emission rates modeled for individual process units as well.

The data above must be provided by the people involved in the attainment modeling, since they may need to address a number of different modeling/culpability scenarios.

The netting exercise, and hence the permit application, cannot be properly reviewed until the permit section is provided with this data.

Thank you for your consideration in this matter.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
2200 Churchill Road, Springfield, IL 62794-9276
(217) 785-4140

August 21, 1995

Granite City Division
of National Steel Corporation
Attn: Fred Steinkuehler
20th & State Streets
Granite City, Illinois 62040

Dear Mr. Steinkuehler:

This is in response to your letter dated August 9, 1995 in which you provided your response to the Agency's list of proposed PM-10 reductions and rule changes. The Agency feels that these measures would assist you in attaining PM-10 reduction credit in regards to your proposed production increase. We appreciate your prompt response to this matter and the steps you have taken, or are proposing to take, to reduce PM-10 emissions.

The Agency has recently contacted the USEPA to confirm that emission reductions required by a rule are not creditable as emission decreases in new source review netting. The USEPA did confirm this. As a result, the netting as contained in the current application for the production increase does not allow you to avoid new source review requirements.

The Agency, therefore, asks that you submit documentation as to how much PM-10 credit you feel you now have available for netting, in consideration of the above.

In addition, the Agency believes that should you accept a 20% opacity limit on the ESP stack you could generate additional credits to offset the proposed PM-10 increase of approximately 320 tons per year. We are prepared to work with you in determining the amount of available credit associated with this rule change.

Sincerely,

Bharat Mathur (BM)

Bharat Mathur, Chief
Bureau of Air

R008595

National Steel

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

August 9, 1995

CERTIFIED MAIL NO. Z 351 483 745
RETURN RECEIPT REQUESTED

Mr. Bharat Mathur
Bureau of Air
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

RECEIVED
AUG 14 1995
IEPA - DAPC - SPFLD

Dear Bharat:

The attached is Granite City Division's response to the IEPA list of proposed PM_{10} reductions and rule changes as presented in our July 24, 1995 meeting. In summary Granite City Division has implemented or has committed to implement, in conjunction with the proposed production increase, the following PM_{10} reduction projects beyond those presently required:

- Road spraying increased from 2 to 3 times per month.
- Additional road paving (approx.$4.0 million).
- Increased road sweeping from every other day to every day for many Granite City Division roads.
- Purchase, assuming a successful trial, an Enviro Whirl road sweeper (approx.$200,000).
- Install a fourth ESP at the BOF to assure future compliance at increased production levels (approx. $7.0 million).

In 1991 prior to the promulgation of the PM_{10} SIP, Granite City Division agreed to additional road paving (approx. $1.8 million) and increased road spraying (from 1 to 2 times per month) over that required by an earlier consent decree in order to provide credit for a proposed production increase.

Granite City Division has provided more than enough PM_{10} reductions (credits) to offset any potential increase in emissions as a result of the proposed production increase and maintain attainment as per the PM_{10} SIP. Also as discussed Granite City Division is committed to maintaining attainment at all monitors it impacts and will continue to work closely with the IEPA toward that end.

Should you have any questions regarding this response please contact Larry Siebenberger (618) 451-3391.

Very truly yours,

Fred Steinkuehler (GL)

Fred Steinkuehler
Director - Engineering Technology

Additional Control Measures

1. Granite City Division is increasing the commitment for road spraying from 2 times per month to 3 times per month. The control efficiency increased from 95% to 98%. Granite City Division would be concerned about increasing the road spraying commitment further and claiming a control efficiency greater than 98%. Granite City Division will continue to treat the roads as needed.

2a. Granite City Division initiated a 2 month trial use period of an Enviro-Whirl street sweeper on August 7, 1995. The street sweeper will be purchased (approx. cost $200,000) if trial use adequately proves its effectiveness and durability.

2b. Granite City Division does not believe it is cost effective or particularly beneficial to construct ditches at the edge of paved roads The ditches would require major modification to the plant sewer system in order to properly drain or they would just fill back up. Vacuum sweeping is the predominant method used to clean paved roads at Granite City Division. The proposed road program increases the frequency of road cleaning from every other day to daily on many of the paved roads. Thus, the added benefit of ditches would be marginal at best..

2c. Granite City Division believes its current bag system used to handle dust collected at the BOF ESP provides good dust control. The trial of the new Enviro-Whirl sweeper will include minimizing any track out of BOF dust from the ESP area.

3. The previous partial enclosure at the dekishing station provided no environmental benefit. The greatest potential for particulate generation is during the clean up of the material which has been removed from the mouth of the torpedo cars. Granite City Division has developed a procedure which requires the wetting of this material prior to pick up and hauling. Granite City Division will institute more frequent training of the appropriate personnel as to the use of this procedure.

4. The installation of canopy hoods in the BOF roof is not necessary, particularly in light of the addition of a 4th ESP (approx. cost $7 million) and the present controls at the BOF including secondary emission hoods, doghouse enclosures (vessel enclosure doors), lance hole spray systems, tapside fume suppression system, and baghouse control of reladling, desulfurization, slag skimming and material handling.

5. During the month of July, 1995 one elevated opacity event was reported by the opacity monitor. A long delay occurred prior to and steam injection was interrupted during the time of the elevated reading reported resulting in an upset condition. Granite City Division believes it has the procedures and equipment necessary to control emissions to permitted limits.

6. Granite City Division is in the process of installing boots, as required, to minimize water infiltration into rapper and TR set areas of the ESP. Granite City Division considers this to be a more cost effective solution to potential water infiltration problems.

7. The approx. cost of installing a new quench tower at the east end of the coke ovens would be approx. $2.2 million. Based on a 3 TPY PM_{10} emission reduction as assumed by the IEPA this would not be a cost effective control project.

8. Granite City Division and the IEPA successfully developed and obtained Federal approval of a FESOP which assures attainment with the SO_2 ambient air quality standards while using coke oven gas as presently generated. The installation of coke oven gas desulfurization would cost approx. $35 - 40 million and is not considered a cost effective method for PM_{10} reductions.

9. International Mill Service and Standard LaForge are independent companies and not owned or operated by National Steel. The PM_{10} road emissions, at a control efficiency of 95% as assumed by the PM_{10} SIP for both, assuming continuous operation, is approx. 3.3 TPY. Based on these control efficiencies an enhanced fugitive control program would result in minimal additional PM_{10} reductions.

10. The National Steel Lines Trucking facility located between 20th & 21st Streets is basically a parking lot used by the trucks while they receive orders for loads. The trucks move in out of the lot at extremely low speed and as such minimal PM_{10} emissions are generated. Granite City Division will, however, agree to treat the lot quarterly.

Rule Changes

1. Granite City Division will agree to a 20% (3 min. avg.) opacity standard at the BOF roof monitor provided adequate PM_{10} credit is recognized.

2. As a result of the recent addition of the 4th ESP to the BOF ESP control system Granite City Division has no data to determine average flowrates or to evaluate a gain loading limitation. Granite City Division believes a 68.5 lb./hr. stack limit (as used in the PM_{10} attainment model) and a roof monitor opacity limit are adequate restrictions on the BOF to maintain attainment.

3 Based on the last BOF compliance stack test Granite City Division believes the proposed 20% opacity limit is more restrictive than the 68.5 lb./hr. limit used to demonstrate attainment and is, therefore, not necessary.

SPRTRUK.LS

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

Date: August 3, 1995

To: Bharat Mathur

From: Don Sutton DES

Subject: Update on Granite City Division of National Steel Corp. (GCD) production increase application

On July 31, 1995, Chris Romaine talked to Jennifer Bruzecky of the USEPA to confirm the effect of the adoption of rules on emission reductions that are implemented prior to the adoption or effectiveness of those rules. Our understanding of the relevant rules on netting is that these reductions would cease to be creditable as emission decreases for netting. The USEPA agreed. Moreover, they indicated that this would only not be true if Illinois had a USEPA approved banking program that recognized and preserved credits in this type of circumstance, which is not the case.

Jim Ross and Rob Kaleel met with GCD on August 3, 1995 at GCD's request to discuss the netting issues. GCD was informed that the USEPA had been contacted and agreed with IEPA's position that the roadway emission reductions were not available for credit in netting. GCD stated that they are still exploring their options in this matter . GCD proposed several options on how to approach the netting which allows them to net out of new source review. These options will require Agency review to determine their feasibility, considering most options presented still try to claim substantial credit for roadway reductions. Notably, they have reduced the requested increase in PM-10 emissions from 463 tons/yr to 320 tons/yr. GCD also stated that they will be providing a response to the IEPA's proposal (a.k.a., wish list) in the near future.

In addition, GCD discussed their plans to apply for an extension to the "temporary permit" which allows them to operate at increased production for a limited period. This permit is due to expire in September of this year. The IEPA stated that it will expedite a review of this application.

Internally, we still need to decide what roadway emission reduction credits are available to GCD, if any.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

DATE: July 28, 1995

TO: Mary Gade

FROM: Bharat Mathur

SUBJECT: Briefing regarding a pending permit application for production increase at Granite City Division (GCD) of National Steel Corporation.

GCD currently has an application pending for a 61% increase in hot metal production and 56% increase in steel production. GCD is located in Madison county which is moderate non-attainment for PM-10. The increase triggers PSD review for CO and SO2. GCD is attempting to "net out" of new source review (NSR) for VOM, NOx, PM-10, and Particulates.

GCD proposes to net out of NSR for PM-10 by relying on previously implemented enhanced control measures on unpaved roadways in order to generate creditable emission reductions. These emission credits would then be used to offset process PM-10 emission increases associated with the production increase. However, the use of these emission credits may not be allowed under NSR rules because they were relied upon as part of our PM-10 rulemaking. Resolution of this issue is being pursued with the USEPA.

Implications for GCD should they not be able to use these roadway emission reductions as credits are many, including the meeting of strict NSR requirements, which would likely kill the project.

Due to the size and nature of the increase the USEPA is expected to scrutinize the steps the Agency takes in permitting this project.

It is anticipated to require a considerable more amount of time and discussion before permit action can be taken regarding this project.

GCD has requested an expedited review of the application and issuance of a permit. Therefore, the Agency may receive some external pressure to move the process along. We intend to do everything we can in order to accommodate their request, however, it is unlikely that the permit will be issued within the time frame they wish (i.e., by mid September). In addition, GCD has requested a public hearing for the project which requires a 45 day notification period.

cc: Bernie Killian
Don Sutton

Printed on Recycled Paper

IEPA PROPOSAL *(INTERNAL VERSION)*

Additional Control Measures:

1. Unpaved roads: Increase use of dust suppressant on unpaved roads from current practice of 2 times/mo *(GCD proposes 3 times/mo)* to 4 times per month.

	current required	GCD proposed	IEPA proposed
	2 times/mo	3 times/mo	4 times/mo
PM-10 =	31 tons/yr	28 tons/yr	19 tons/yr

-capital cost = $0 (already in budget, we think are already doing)
-annual cost $0
-PM-10 reduction = 9 tons/yr

2a. Paved Roads: Purchase high efficiency street sweeper (Enviro-Whirl) and sweep paved roads daily *(GCD will have Enviro-Whirl sweeper on-site in August 95 on rent to own basis)*.

current required	GCD proposed	IEPA proposed
every other day	daily	daily with high eff. sweeper

-capital cost = $210,000
-annual cost $10,000

b. Construct ditches on edges of paved roads. This will allow dust and dirt to be routed away from the surface during flushing and rain.
-capital = annual cost = $0 *(ditches can be dug by existing manpower)*

c. Improve housekeeping in BOF ESP area to reduce carryout onto paved roadways, including the installation of a vacuum system to cleanup spilled dust.
-capital cost = $5,000 *(cost of vacuum system)*
-annual cost = $0

-PM-10 reduction a + b + c = 50 tons/yr

3. Rebuild enclosure/building around torpedo car dekishing station. *(will stop complaints)*.
-capital cost = $10,000
-annual cost = $0
-PM-10 reduction = 1 ton/yr

4. Install canopy hoods at BOF roof. *(secondary/tertiary control to capture particulates).*
-capital cost = $1,000,000
-annual cost = $100,000
-PM-10 reduction = 100 tons/yr

5. Provide and enforce SOP at BOF to prevent opacity exceedances and minimize emissions during malfunction conditions.
-capital cost = $0
-annual cost = $50,000 *(cost due to need to slow down production)*
-PM-10 reduction = 5 tons/yr

6. Construct weathershed over BOF ESP to protect T-R sets and rappers and to facilitate maintenance in that area. *(GCD claims that some opacity exceedances of ESP stack are due to moisture in stack from rain - this should help prevent that).*
-capital cost = $100,000
-annual cost = $0
-PM-10 reduction = 5 tons/yr

7. Put quench tower over east quench station.
-capital cost = $100,000
-annual cost = $0
-PM-10 reduction = 3 tons/yr

8. Install coke oven gas desulfurization. *(will reduce particulates by reducing sulfates).*
-capital cost = $3,000,000
-annual cost = $300,000
-PM-10 reduction = 120 tons/yr

9. Enhance fugitive control programs at International Mill Service and LaFarge. These are the 2 slag processing plants. *(have GCD treat their roads).*
-capital cost = $0
-annual cost = $20,000
-PM-10 reduction = 10 tons/yr

10. Enhance fugitive dust control on unpaved lot of NSR Trucking between 20th and 21st street. *(control of this lot would result in less carryout of dust onto 20th).*
-capital cost = $0
-annual cost = $10,000
-PM-10 reductions = 5 tons/yr

TOTAL COST = $4,915,000

TOTAL PM-10 REDUCTION = 308 tons/yr

Rule Changes:

1. Opacity limit on BOF roof monitor of 20% on a three minute running average.

2. Grain loading limit on ESP stack of 0.015 gr/dscf.

3. Opacity limit on ESP stack of 20% on a six minute block average.

(Should be meeting all of these already. Limits would ensure GCD's commitment to continuous compliance. Acceptance of such limits would also help IEPA in future dealings with USEPA, e.g., PM-10 SIP and acceptance of production increase).

G-WISH.DOC

IEPA PROPOSAL

Additional Control Measures:

1. Increase use of dust suppressant on unpaved roads. from current practice of 2 times/mo to 4 times per month.

	current required	GCD proposed	IEPA proposed
	2 times/mo	3 times/mo	4 times/mo
PM-10 =	31 tons/yr	28 tons/yr	19 tons/yr

-PM-10 reduction = 9 tons/yr

2a. Purchase high efficiency street sweeper (Enviro-Whirl) and sweep paved roads daily.
b. Construct ditches on edges of paved roads.
c. Improve housekeeping in BOF ESP area to reduce carryout onto paved roadways, including the installation of a vacuum system to cleanup spilled dust.

-PM-10 reduction a + b + c = 50 tons/yr

3. Rebuild enclosure/building around torpedo car dekishing station.

-PM-10 reduction = 1 ton/yr

4. Install canopy hoods at BOF roof.

-PM-10 reduction = 100 tons/yr

5. Provide and enforce SOP at BOF to prevent opacity exceedances and minimize emissions during malfunction conditions.

-PM-10 reduction = 5 tons/yr

6. Construct weathershed over BOF ESP to protect T-R sets and rappers and to facilitate maintenance in that area.

-PM-10 reduction = 5 tons/yr

7. Put quench tower over east quench station.

-PM-10 reduction = 3 tons/yr

8. Install coke oven gas desulfurization.

-PM-10 reduction = 120 tons/yr

9. Enhance fugitive control programs at International Mill Service and LaFarge.

-PM-10 reduction = 10 tons/yr

10. Enhance fugitive dust control on unpaved lot NSR Trucking between 20th and 21st street.

-PM-10 reductions = 5 tons/yr

TOTAL POSSIBLE PM-10 REDUCTION = 308 tons/yr

Rule Changes:

1. Opacity limit on BOF roof monitor of 20% on a three minute running average.

2. Grain loading limit on ESP stack of 0.015 gr/dscf.

3. Opacity limit on ESP stack of 20% on a six minute block
4 average.

7/26/95

R008606

IEPA WISH LIST FOR GCD

Additional Control Measures:

1. Increase use of dust suppressant on unpaved roads to 4 times per month.
cost = $130,000 PM-10 reduction = 23 tons/yr
2. Purchase high efficiency street sweeper (Enviro-Whirl) and sweep paved roads daily.
cost = $220,000 PM-10 reduction = 50 tons/yr
3. Construct ditches on edges of paved roads. This will allow dust and dirt to be routed away from the surface during flushing and rain.
cost = $10,000 PM-10 reduction = 80 tons/yr (2+3+9)
4. Rebuild enclosure/building around torpedo car dekishing station.
cost = $50,000 PM-10 reduction = 1 ton/yr
5. Increase draft or install additional hooding at BOF control system to provide better capture.
cost = $200,000 PM-10 reduction = 50 tons/yr
6. Provide and enforce SOP at BOF to prevent opacity exceedances and minimize emissions during malfunction conditions.
cost = $50,000 PM-10 reduction = 5 tons/yr
7. Improve fugitive control programs at International Mill Service and LaFarge. These are the slag processing plants.
cost = $25,000 PM-10 reduction = 25 tons/yr
8. Enact a sweeping program for selected city streets (e.g., 20th Street, Madison Ave.).
cost = $20,000 PM-10 reduction = 10 tons/yr
9. Improve housekeeping in BOF ESP area to reduce carryout onto paved roadways, including the installation of a vacuum system to cleanup spilled dust.
cost = $5,000 PM-10 reduction = 2 tons/yr
10. Construct weathershed over BOF ESP to protect T-R sets and rappers and to facilitate maintenance in that area.
cost = $100,000 PM-10 reduction = 5 tons/yr
11. Put quench tower over east quench station.
cost = $100,000 PM-10 reduction = 3 tons/yr

Total cost = $910,000 Total PM-10 reduction = 254 tons/yr

Rule Changes:

1. Opacity limit on BOF roof monitor of 20% on a three minute running average.
2. Grain loading limit on ESP stack of 0.015 gr/dscf.
3. Opacity limit on ESP stack of 20% on a six minute block average.

G-WISH.DOC

RATIONAL FOR IEPA "WISH LIST" FOR GCD

How IEPA is helping GCD:

1a. Allowing use of unpaved roadway credits in New Source Review netting exercise.

b. IEPA is using a "loose interpretation" of NSR rules and thus runs the risk of potentially costly (e.g., time consuming) USEPA involvement. USEPA would most likely accept a strict interpretation and would likely request lengthy justification of loose interpretation.

2. Expediting review of application.

3. Working closely in an atmosphere of cooperation (e.g., have had numerous meetings and provided valuable advice on application).

Allowing use of roadway credits provides the following benefits to GCD:

* If credits were not allowed, could possibly kill the project - since NSR would be required, including LAER.
* GCD avoids costly time delays in evaluating their options.

GCD could still attempt to avoid NSR by taking the following steps:

a) Obtain PM-10 credits by implementing items on wish list

b) Reduce requested permit emission limits for the production increase from allowable by rule to maximum actuals, thereby reducing increase in PM-10.

c) Reduce level of production increase sought, thereby reducing increase in emissions (currently seeking 61% and 56%, possibly reduce to 25%).

If did manage to avoid NSR:

* GCD would likely have to install new controls or upgrade existing ones in order to obtain credits (very expensive).
* Permit conditions would be stricter (e.g., lower allowables) since would have to make additional reductions required in NSR netting exercise enforceable.

Conclusion:

IEPA is "helping" GCD in numerous ways, most significantly by allowing the use of roadway credits. GCD would likely have to implement items on wish list anyway if credits were not allowed. GCD should help IEPA by implementing wish list. This would help IEPA in future dealings with USEPA (e.g., PM-10 SIP and justification of allowing the use of roadway credits).

G-JUSWIS.DOC

GCD - Emissions in tons/yr

Emissions are only from opertions associated with BF, BOF, continuous casters, fuel combustion units, roadways and storage piles. Does not include coke plant, coke by-products plant, and rolling mills.

Pollutant	Historic Actual	Potential After Proposed Increase	Potential Increase
PM-10	726	1,183	457

The air will most likely see an increase of 457 tons/yr of PM-10 over that emitted today as a result of the proposed production increase.

Historic period is 24 month period form 8/92 to 7/94.

Potential excludes roadway reductions and other claimed credits (539 tons) since, for the most part, they have already occurred.

Source-wide actual PM-10 in 1993 was reported by GCD at 673 tons in their annual emissions report.

R008609

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

CONFIDENTIAL
MEMORANDUM

DATE: May 31, 1995

TO: Bharat Mathur

FROM: Don Sutton DES/mee

SUBJECT: Pending permit application for production increase at Granite City Division (GCD) of National Steel Corporation.

GCD currently has an application pending for a 61% increase in hot metal production and 56% increase in steel production (6900 to 10,300 tons/day). The increase triggers PSD review for CO and SO2. GCD is attempting to "net out" of new source review (NSR) for VOM, NOx, PM-10, and Particulate. GCD is located in Madison county which is moderate non-attainment for PM-10. A meeting was held on May 25 to discuss pending issues of the application.

Discussion:
GCD proposes to net out of NSR for PM-10 by relying on enhanced control measures on unpaved roadways in order to generate creditable emission reductions. These emission credits would then be used to offset process PM-10 emission increases associated with the production increase and thereby allow GCD to net out of NSR.

Issue: The issue is whether these roadway emission reduction credits can be used in the NSR netting exercise.

Interpretation of the following rule and a clear understanding of the PM-10 SIP attainment demonstration is needed in order to make a determination, as explained below.

203.208(c)(4) states - A decrease in actual emissions is creditable to the extent that it is demonstrated by the Agency not to have been previously relied on ... for demonstrating attainment or reasonable further progress in a nonattainment area which the particular change will impact.

Background on SIP modeling: The proposed PM-10 SIP, which contains PM-10 modeling demonstrating attainment, is currently awaiting approval by the USEPA. When modeled with previous roadway emissions, attainment was not demonstrated. A new rule, 212.316(e)(1) - effective May 1993, was developed which required 5% opacity from GCD roadways. This

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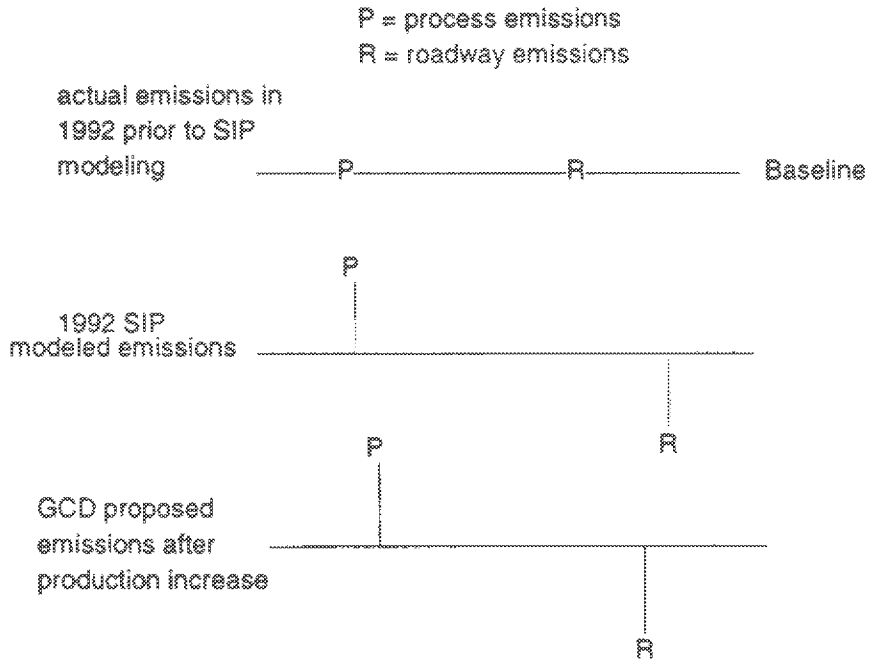
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

allowed the Agency to assume a 95% PM-10 reduction from uncontrolled roadway emissions and thereby reach attainment in the modeling. In order to meet this required opacity level, GCD agreed on additional control measures. Treatment of unpaved roads increased from once/month to twice/month, and AQPS relied on an improvement from 50% control to 95% control. Note that emissions from roadways were adjusted in the model to account for a 25% production increase, however, this merely required that a control of greater than 95% was required on certain roads in order to accommodate the associated emissions increase. Agency policy is to model at allowable levels. For the SIP model, process allowable emissions are typically significantly greater than actual emissions, whereas roadway allowable emissions are near equal to actual emissions. The SIP model is barely showing PM-10 attainment.

A visual of what appears to be occurring in modeling:



There are still a number of inconsistencies and errors in the PM-10 emissions data supplied by GCD in the application. The following summarizes the numbers involved:

- GCD proposed roadway control measure is treatment three times/month which equates to around 98% control.
- The SIP model uses a controlled unpaved roadway PM-10 emission rate of 21 tons/yr based on 95% control.

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ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

- GCD proposed PM-10 unpaved roadway emissions after the production increase are 59.32 tons/yr, based on only 90% control.
- GCD gives historic actual PM-10 (baseline) from unpaved roadways at 771.06 tons/yr, whereas attainment demonstration assumed about 420 tons/yr, given the historic level of control.
- GCD currently seeks to use 711.74 tons/yr roadway reduction credit.
- GCD proposed PM-10 increase from units other than unpaved roads = 716.54 tons/yr.

Real contemporaneous emission reductions have occurred as a result of GCD's additional roadway control measures. These reductions in emissions may nearly cancel out the potential increase in PM-10 emissions from the production increase. Much of the proposed emissions increase is a result of the difference between current levels of actual emissions and future levels of allowable emissions. However, some of the emission increases, like the BOF fugitive, are real and increase in direct proportion to the production increase.

Summary:
GCD is attempting to take credit for a decrease in roadway emissions in the NSR netting exercise when some or all of this decrease may have also been relied on in the SIP attainment demonstration. To the extent that these decreases have already been relied on in the attainment demonstration, this is not allowed by 203.208(c)(4).

Implications for GCD should they not be able to use these roadway emission reductions as credits are many, including the meeting of strict NSR requirements.

GCD Position:
GCD states that the roadway reductions were relied upon in the SIP to demonstrate attainment at an increased production level and that the emissions levels from the production increase are consistent with the levels modeled for attainment. The reductions were not relied upon to demonstrate attainment at existing production levels. Therefore, the decreases are creditable for netting out of NSR. They also state that it is a timing issue in that, since a production increase was modeled in the SIP attainment demonstration, they claimed the emission

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

decreases prior to the Agency relying on them. Also, they note that the SIP has not yet been approved and therefore the decreases have not yet been officially relied on.

Options:

1. Agency concludes that roadway emission decreases have not been previously relied on in the SIP and GCD is allowed to use as credits in NSR netting.
Agency could agree with points made by GCD. The Agency could reason that the increases from the proposed production increase were not relied on, merely accounted for, and will not exceed the emissions modeled for attainment, and hence the integrity of the SIP attainment demonstration is being maintained.

2. Agency concludes that decreases have been previously relied on in the SIP and GCD cannot use to net out of NSR. GCD may still attempt to avoid NSR by taking the following steps:
   a. Reduce requested permit emission limits for the production increase from allowable by rule to maximum actuals, thereby reducing increase in PM-10.
   b. Obtain PM-10 credit by increasing capture and/or control efficiency at process sources.
   c. Obtain credit by reducing paved and unpaved roadway emissions further.
   d. Add additional controls to provide decreases.
   e. Reduce level of production increase sought, thereby reducing increase in emissions (currently seeking 61% and 56%, possibly reduce to 25%).

If Option 1 is taken, it will need to be justified to the USEPA. Pursuant to the rule, the Agency will be required to demonstrate that the roadway reductions have not been previously relied on for demonstrating attainment.

If Option 2 is taken, will need to deal with GCD.

This is a serious and complex issue and we need to discuss with you prior to making a final decision. Please advise.

If you have any questions, please contact Jim Ross.

cc: Dennis Lawler, Harish Desai, Chris Romaine, Dave Kolaz, Rob Kaleel, Jim Ross, Jeff Benbenek, File - Appl.# 95010001 I.D.# 119813AAI

JRR.G-MEMTG.DOC

GRANITE CITY STEEL PRODUCTION INCREASE PERMIT
PM_{10} NETTING OPTIONS

- **Baseline to Projected Net PM_{10} Emissions.**

  - Permit application amended July 20, 1995. +462.84 TPY
  - Additional potential amendments.

  - Reduce BOF 2 vessel (ESP stack) net by including all test runs conducted on last compliance test.

  - Reduce net increase from all baghouse systems.

  - Assume no increase in BOF roof monitor emissions as a result of production increase due to additional control equipment (4th ESP).

  Net emissions after additional amendments +320.39 TPY

- **PM_{10} Credit in July 20, 1995 Amendment**

  - Contemporaneous reductions in fugitive emission -544.9 TPY

  - Other Contemporary Reduction -7.3 TPY

- Other Credit Options

1. PM_{10} credit from September 22, 1992 permit application (Permit issued December 22, 1992). Permit changed production limits as follows: A & B Blast Furnace 5600 to 6500, BOF 6900 to 7600, Continuous Caster 1 & 2 6,900 no change. No modification as a result of changes. PM_{10} reduction by implementation of the commitment to increase road spraying from 1 to 2 times per month on roads L and X (Control efficiency from 0-95%).

   -379.54 TPY

2. PM_{10} credit for some unpaved roads increasing from 0% control efficiency based on dust control program required as of November 19, 1990 IEPA Fugitive emission assessment, to 50% as the base controlled emissions for the PM_{10} attainment SIP. PM_{10}SIP relied on additional emission reduction as a result of increased control efficiencies from 50%.to 95%.0 - 50% reductions in PM_{10} emission for road segments G. H. L, N, X, Y, F-F, $CS_1$and CS_2.

- -238.59TPY

3. PM_{10} credit for 0-50% reduction in unpaved road segments L and X as per options 1 and 2 above. -199.75TPY

4. PM_{10} emission reduction included in PM_{10} SIP for production increase and not relied on attainment demonstration. -150 to 200 TPY

5. PM_{10} credit for BOF roof monitor emission reductions.

Base Production		Projected Production	
85.3 lb./hr.	to	35 lb./hr.	-220.31 TPY

- **PM_{10} Netting Options**

1.	Fugitive Reduction	-544.9
	Other Contemporary Changes	-7.3
		-552.3
	Production Increase	+462.84
	Net	- 89.36
2.	Fugitive Reduction (Option #1 (9/22/92 Prmit Credit)	-379.54
	Other Contemporary Changes	-7.3
		-386.84
	Production Increase	320.39
	Net	- 66.45
3.	Fugitive Reduction	
	Option #2 (0-50% Credit	-238.59
	Option #4 (PM_{10} SIP Credit)	-150.00
	Other Contemporary Changes	-7.3
		-395.89
	Production Increase	+320.39
	Net	-75.5
4.	Fugitive Reduction	
	Option #3 (0-50% Rd L and X Credit)	-199.75
	Option #4 (PM_{10} SIP Credit)	-150.00
	Other Contemporary Changes	-7.3
		-357.05
	Production Increase	+320.39
	Net	-29.36

5. Fugitive Reductions

Option #4 (PM_{10} SIP Credit)	-200.00
Option #5 (BOF Roof Credit)	-120.00
Other contemporary changes	-7.3
	-327.3
Production Increase	320.39
Net	-6.91

6. Same as Netting Options 3 and 4 except use credit Option 5 (BOF roof credit) in lieu of credit option 4 (PM_{10} SIP credit).

7. Same as Netting Option 3 and 4 except use credit Option 5 (BOF roof credit) in lieu of credit Options 2 (0-50% Credit) or Option #3 (0-50% Rd L and X Credit)

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

DATE: October 11, 1995

TO: Chris Romaine, New Source Review Manager

FROM: Jim Ross JMR

SUBJECT: Request for meeting of Technology Review Committee regarding BACT determination for Granite City Division (GCD) production increase application.

The above referenced production increase application indicates the potential for significant increases in the emissions of SO2 and CO, pursuant to PSD.

In accordance with the procedures outlined in the Permit Manual, Section 1.27-1, a meeting is requested to discuss the BACT determination made in regards to the application. Note that the determination is not considered final since a final determination depends upon additional information requested from the company, however, to delay this meeting further may not be appropriate in consideration of the intent to notice the public hearing within the next few weeks.

Affected Units

The SO2 emission units impacted by the proposed production increase and considered as part of the BACT review are;

- blast furnace casthouse baghouse
- blast furnace casthouse - uncaptured
- iron spouts controlled by baghouse
- fuel combustion units
  - ladle dryer preheaters
  - continuous casters
  - blast furnace stoves

The CO emission units impacted by the proposed production increase and considered as part of the BACT review are;

- BOF vessels
- fuel combustion units
  - ladle dryer preheaters
  - continuous casters
  - blast furnace stoves

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Associated Emissions

Historic production: iron = 2,059,557, steel = 2,413,406
* Future production: iron = 3,321,500, steel = 3,759,500

SO2:

	Emission Factor (lbs/ton)	Potential Increase (tons/yr)
blast furnace casthouse baghouse	0.2006	215.43
blast furnace casthouse-uncaptured	0.0104	11.23
iron spouts w/ baghouse	0.0073	6.37
fuel combustion units		
natural gas -	0.6 lb/mmcf	0.0
BFG -	6.65 lb/mmcf	212.77
Fuel Oil -	141.3 lb/Mgal	24.67

CO:

BOF vessels	8.993	6,052.71
fuel combustion units		
natural gas -	40 lb/mmcf	0.0
BFG -	13.7 lb/mmcf	438.34
Fuel Oil -	5 lb/Mgal	0.87

BACT REVIEW

Need to evaluate the following 3 categories in determination of BACT:
a) inherently lower emitting processes/practices;
b) add-on controls;
c) combinations of above.

SO2:

1. Blast furnace casthouse baghouse

a) The SO2 emitted from the blast furnaces and iron spouts originates in the coal used to make coke. Approximately 80% of the sulfur remains in the coke produced from coal. About 98% of this sulfur is removed by the use of limestone and fluxing agents added to the blast furnace burden. Most of the remaining sulfur is released in the blast furnace gas stream as H2S. Less SO2 would be available to be emitted if GCD used low sulfur coal. Therefore, SO2 emissions could be reduced by the use of low sulfur coal. **GCD needs to address the feasibility of the use of low sulfur coal to "prevent" SO2 emissions.**

GCD proposes current industry work practices as BACT for the blast furnace operations.
b) No known controls for blast furnace SO2 emissions are in use in the steel industry.
c) not applicable.

2. Blast furnace casthouse-uncaptured
Refer to analysis of item 1.

3. Iron spouts w/ baghouse
Refer to analysis of item 1.

4. Fuel combustion units (ladle dryer preheaters, continuous casters, blast furnace stoves)
natural gas - 0.6 lb/mmcf
BFG - 6.65 lb/mmcf
Fuel Oil - 141.3 lb/Mgal
Increased quantities of BFG will result from the production increase. If this fuel is not used in these fuel combustion emission units, it must be flared. Substituting natural gas for BFG will still result in the combustion of BFG at the flares. Therefore nothing is gained by such a substitution. Potential fuel oil use is also increasing. Natural gas will be burned whenever possible, with fuel oil used mostly as an emergency backup. GCD does burn recycled and waste oil, however, these emit only small amounts of SO2. If substituted natural gas for fuel oil, SO2 emissions would be reduced. GCD needs to address the feasibility of this.

There are no known add-on SO2 control technologies currently in use in the steel industry.
Per BACT clearinghouse - BACT for other fuel combustion units at steel facilities was determined as the use of natural gas as the fuel. As stated above, substituting natural gas for BFG will not reduce SO2 emissions because the BFG would still be flared. Fuel oil is mostly only used on an emergency basis.

BACT may be satisfied for the above units, however, a final determination is dependent upon the company's response to the following:

1. Need to address the feasibility of the use of lower sulfur coals to "prevent" SO2 emissions;

2. Need to address the feasibility of replacing oil use with natural gas use for SO2 emission prevention. Why is potential oil use increasing so much as a result of production increase?

GCD was asked to amend the application by addressing these items. No response has been received as of the date of this memo.

Conclusion: For;
1. Blast furnace casthouse baghouse
2. Blast furnace casthouse-uncaptured
3. Iron spouts w/ baghouse
BACT = Current work practice standards and/or maybe the use of a lower sulfur containing coal.

4. Fuel combustion units
BACT = Use of natural gas when not using BFG and/or using natural gas in place of fuel oil.

CO:
1. BOF vessels
GCD has an open hood emissions capture system which allows for CO to be combusted in the hood with the addition of excess air. More complete combustion should occur at the BOF due to increase in hood draft rates which will result from the changes at GCD (e.g., addition of the 4th ESP section, increase in pulpit set point required by the conditions of this permit). In addition, more CO should be combusted due to more air being drawn in a more appropriate location.

2. Fuel combustion units (ladle dryer preheaters, continuous casters, blast furnace stoves)

natural gas -	40 lb/mmcf	0.0
BFG -	13.7 lb/mmcf	438.34
Fuel Oil -	5 lb/Mgal	0.87

Note that natural gas has the highest CO emission factor. Therefore, it would appear that using BFG instead of natural gas would actually cause less CO emissions. However, BFG has a low btu value and hence more BFG would need to be used to obtain the same benefits from using natural gas. In addition, refer to analysis for SO2 in that if the BFG generated is not used in these units it would need to be flared, therefore no reduction in emissions is associated with the substitution of BFG with another fuel.
GCD proposes to use good combustion practices to prevent CO formation for the fuel combustion units. Such practices include, proper fuel/air mixture, proper mixing, and high temperature.

No known add-on controls for CO are in use for the steel industry.

BACT appears to be satisfied for the above units.

Conclusion: For;
1. BOF vessels
BACT = Existing open hood capture system operated at future required flow rates.

2. Fuel combustion units
BACT = Use of good combustion practices to prevent CO formation.

Attached are related BACT determinations which were downloaded from the TTN and the portion of the application which addressed BACT.

G-BACT.DOC

cc: Application file No. 95010001, I.D. No. 119813AAI

Downloaded 9/22/95 off of TTN - Searched all categories for BACT determinations made on steel facilities - SIC # 33

* PROCESS : BOILER, VTD
* PROCESS TYPE : 11.005
* SCC CODE : 10200602
PRIMARY FUEL : NATURAL GAS
THROUGHPUT : 46.5
THROUGHPUT UNIT : MMBTU/H
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : PM
* CAS NUMBER : PM
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: NATURAL GAS USAGE
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 0.2
PRIMARY EMISSIONS UNIT : TPY
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0.05
ALTERNATE EMISSION UNIT : LB/H
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE

CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : SO2
* CAS NUMBER : 7446-09-5
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: NATURAL GAS USAGE
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 0.1
PRIMARY EMISSIONS UNIT : TPY
* BASIS : OTHER
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0.03

ALTERNATE EMISSION UNIT : LB/H
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: USE OF NATURAL GAS & LOW NOX BURNERS
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 3.1
PRIMARY EMISSIONS UNIT : TPY
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0.7
ALTERNATE EMISSION UNIT : LB/H
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* PROCESS : FURNACE, REHEAT
* PROCESS TYPE : 11.005
* SCC CODE : 30300933
PRIMARY FUEL : NATURAL GAS
THROUGHPUT : 146
THROUGHPUT UNIT : MMBTU/H
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : PM

* CAS NUMBER : PM
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: USE OF NATURAL GAS
NUMBER OF OPTIONS CONSIDERED : 2
RANK OF OPTION SELECTED : 2
PRIMARY EMISSIONS : 10.7
PRIMARY EMISSIONS UNIT : TPY
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 2.44
ALTERNATE EMISSION UNIT : LB/H
STANDARD EMISSION : 0.0167
STANDARD EMISSION UNIT : LB/MMBTU
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : SO2
* CAS NUMBER : 7446-09-5
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: USE OF NATURAL GAS
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 0.4
PRIMARY EMISSIONS UNIT : TPY
* BASIS : OTHER
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0.09
ALTERNATE EMISSION UNIT : LB/H
STANDARD EMISSION : 0.0006
STANDARD EMISSION UNIT : LB/MMBTU
* EMISSION TYPE : P

REPORT DATE: 09/22/95 CONTROL TECHNOLOGY DETERMINATIONS (FREEFORM) PAGE

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: USE OF NATURAL GAS
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 22.4
PRIMARY EMISSIONS UNIT : TPY
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 5.1
ALTERNATE EMISSION UNIT : LB/H

NOTES :
1. SIP - STATE IMPLEMENTATION PLAN
2. SEE ALSO IN-0044
3. THE CONFIGURATION OF THE ENTIRE MELTSHOP IS CONSIDERED TOTAL ENCLOSURE:
A. SHEETING ON WALLS FROM ROOF TO W/IN 5 FT OF DECK OR TO GRADE WALLS,
B. ABSENCE OF ROOF MONITORS IN ENTIRE BUILDING, AND
C. ROLL-UP TRUCK DOORS IN OPENINGS IN FURNACE AREA.
4. BULK RAW MATERIALS RECEIVED, STORED, AND CONVEYED IN CONSUMABLE BAGS OR
RECYCLABLE CONTAINERS OR IN ENCLOSED BINS AND CONTROLLED TRANSPORTATN.
RECEIPT AND STORAGE BUILDING EQUIPPED WITH DUST CONTROL SYSTEM, INCL.
BAGHOUSE FOR RECIRCULATING AIR, RESULTING IN ESSENTIALLY NO EMISSIONS.

* PROCESS : ELECTRIC ARC FURNACE (EAF), 2
* PROCESS TYPE : 81.006
* SCC CODE : 30300906
PRIMARY FUEL :
THROUGHPUT : 100
THROUGHPUT UNIT : TONS
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : B
* CONTROL METHOD DESCRIPTION :
DIRECT SHELL EVACUATION SYSTEM (140,000 ACFM),
200% THEORETICAL COMBUSTION AIR
NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED : 0
PRIMARY EMISSIONS : 817
PRIMARY EMISSIONS UNIT : LB/HR
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 100
ALTERNATE EMISSION : 3578.8
ALTERNATE EMISSION UNIT : TON/YR
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

STANDARD EMISSION UNIT : % OPACITY
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : SO2
* CAS NUMBER : 7446-09-5
* CONTROL METHOD CODE : A
* CONTROL METHOD DESCRIPTION :
DIRECT SHELL EVACUATION SYSTEM
NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED : 0
PRIMARY EMISSIONS : 0.047
PRIMARY EMISSIONS UNIT : LB/TON STEEL PROD.
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 5.9
ALTERNATE EMISSION UNIT : LB/HR (26 TON/YR)
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE :
REPORT DATE: 09/22/95 CONTROL TECHNOLOGY DETERMINATIONS (FREEFORM) PAGE
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : VE
* CAS NUMBER :
* CONTROL METHOD CODE : B
* CONTROL METHOD DESCRIPTION :
TOTAL ENCLOSURE OF GASES FROM EAF DUST HANDLING,
CONTROL OF MATERIAL HANDLING SYSTEMS
NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED : 0
PRIMARY EMISSIONS : 3
PRIMARY EMISSIONS UNIT : % OPACITY
* BASIS : OTHER
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0
ALTERNATE EMISSION UNIT :
STANDARD EMISSION : 3
STANDARD EMISSION UNIT : % OPACITY
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0

OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : PM/PM10
* CAS NUMBER : PM
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: USE OF NATURAL GAS
NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED : 0
PRIMARY EMISSIONS : 0
PRIMARY EMISSIONS UNIT :
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 100
ALTERNATE EMISSION : 0
ALTERNATE EMISSION UNIT :
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

RBLC ID : IN-0041
SUFFIX :
*COMPANY : USS, A DIVISION OF USX CORPORATION, GARY WORKS
ADDRESS :
CITY : GARY
COUNTY :
STATE : IN
ZIP CODE :
EPA REGION : 5
AGENCY CODE : IN001
AGENCY NAME : INDIANA DEPT OF ENV MGMT, OFC OF AIR
CONTACT : DONALD G. KUH
PHONE : (317) 232-4863
*PERMIT/FILE # : PC (45) 1749
*SIC : 3312
AIRS ID : 089-00120
APPLICATION RECEIVED DATE : / /
PERMIT ISSUANCE DATE : 05/22/89 (Actual)
START UP DATE : 11/16/89 (Estimated)
COMPLIANCE VALIDATION DATE: / /
ENTRY DATE : 10/20/92
LAST UPDATE : 08/16/94
NOTES :
1. HI - HEA
* PROCESS : LADLE VESSEL PREHEAT SYSTEM (2)

* PROCESS TYPE : 81.006
* SCC CODE : 30300999
PRIMARY FUEL :
THROUGHPUT : 12
THROUGHPUT UNIT : MM BTU/HR
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* PROCESS : DEGASSER, NO. 2 Q-BOP SHOP RH
* PROCESS TYPE : 81.006
* SCC CODE : 30300999
PRIMARY FUEL :
THROUGHPUT : 2
THROUGHPUT UNIT : X10^6 TONS METAL/YR
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : N
* CONTROL METHOD DESCRIPTION :

NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED : 0
PRIMARY EMISSIONS : 6.7
PRIMARY EMISSIONS UNIT : LB/HEAT OF HOT METAL
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 28
ALTERNATE EMISSION UNIT : TPY
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : NOX
* CAS NUMBER : 10102
* CONTROL METHOD CODE : N
* CONTROL METHOD DESCRIPTION :

NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED :
PRIMARY EMISSIONS : 0.04
PRIMARY EMISSIONS UNIT : LB/HEAT OF HOT METAL
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0.15
ALTERNATE EMISSION UNIT : TPY
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : SO2
* CAS NUMBER : 7446-09-5
* CONTROL METHOD CODE : N
* CONTROL METHOD DESCRIPTION :

NUMBER OF OPTIONS CONSIDERED : 0
RANK OF OPTION SELECTED : 0
PRIMARY EMISSIONS : 1.26
PRIMARY EMISSIONS UNIT : LB/MONTH
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 0.008
ALTERNATE EMISSION UNIT : TPY
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :
*COMPANY : BETA STEEL
ADDRESS : 6600 U.S. HIGHWAY 12
CITY : PORTAGE
COUNTY : PORTER
STATE : IN
ZIP CODE : 46368-
EPA REGION : 5
AGENCY CODE : IN001
AGENCY NAME : INDIANA DEPT OF ENV MGMT, OFC OF AIR
CONTACT : ED STRESINO
PHONE : (317) 232-8322
*PERMIT/FILE # : CP 127-2326, ID 127-00036
*SIC : 3312

AIRS ID : 127-00036
APPLICATION RECEIVED DATE : 12/04/91 (Actual)
PERMIT ISSUANCE DATE : 02/24/92 (Actual)
START UP DATE : / /
COMPLIANCE VALIDATION DATE: / /
ENTRY DATE : 07/13/93
LAST UPDATE : 03/24/95
NOTES :
1. MODIFICATION WAS TREATED AS IF THE ENTIRE SOURCE WAS NEW.
2. DETERMINATION FOR A MINI-STEEL MILL WITH 2 EAF MELTSHOPS AND HOT ROLLING MILLS. EACH MELTSHOP CONTAINS 2 ELECTRIC ARC FURNACES (EAF) AND CASTERS. REHEAT FURNACES CONTAIN 2 HOT STRIP STEEL MILLS.
3. MELTSHOPS: 7 TOTAL CONTROL OPTIONS EXAMINED FOR THE TWO SHOPS -- RANKS 1 AND 2 WERE SELECTED; CAPITAL COSTS - $18 MILLION; ANNUALIZED COSTS - $2.2 MILLION.
4. SCR - SELECTIVE CATALYTIC REDUCTION.
5. SCC CODES 3-03-009-06 THROUGH 3-03-009-33.

CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : A
* CONTROL METHOD DESCRIPTION :
DSE, THERMAL DESTRUCTION IN ELBOW
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 3578.8
PRIMARY EMISSIONS UNIT : TPY
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 98
ALTERNATE EMISSION : 817
ALTERNATE EMISSION UNIT : LB/HR
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

RBLC ID : IN-0054
SUFFIX :
*COMPANY : NUCOR STEEL
ADDRESS : ROUTE 2, BOX 311
CITY : CRAWFORDSVILLE
COUNTY : MONTGOMERY
STATE : IN
ZIP CODE : 47933-9450

EPA REGION : 5
AGENCY CODE : IN001
AGENCY NAME : INDIANA DEPT OF ENV MGMT, OFC OF AIR
CONTACT : ED STRESINO
PHONE : (317) 232-8322
*PERMIT/FILE # : CP 107-2764
*SIC : 3312
AIRS ID : 107-00038
APPLICATION RECEIVED DATE : 11/11/92 (Actual)
PERMIT ISSUANCE DATE : 11/30/93 (Actual)
START UP DATE : / /
COMPLIANCE VALIDATION DATE: / /
ENTRY DATE : 05/12/94
LAST UPDATE : 03/24/95
NOTES :
ADD CONTINUOUS CASTER, ROLLER HEARTH (TUNNEL) FURNACE, AND 12 ANNEALING FURNACES TO INCREASE PRODUCTION FROM 160 TO 260 TPY OF HOT & COLD ROLLED STEEL STRIP IN COIL FORM. ENLARGE WATER COOLED 4TH HOLE EVACUATION DUCTWORK
100% OF ALL PM/PM10 FUGITIVE EMISSIONS GENERATED DURING FURNACE OPERATIONS
SHALL BE CAPTURED BY ROOT CANOPIES OR CONTAINED AND COLLECTED WITHIN EAF SHOPBUILDING. FUGITIVE EMISSIONS GENERATED AT EACH EAF DURING COMPLETE CYCLE FROM TAP TO TAP SHALL NOT EXCEED 0% OPACITY WHEN EMITTED FROM ROOF MONITOR OR BUILDING OPENING. 0% OPACITY REFLECTIVE OF 100% CAPTURE. GASES DISCHARGED INTO ATMOSPHERE FROM EAF DUST HANDLING SYSTEM LIMITED TO 0% OPACITY. REFER TO IN-0034 FOR MORE INFORMATION ON ORIGINAL PERMIT
* PROCESS : FURNACE, ELECTRIC ARC
* PROCESS TYPE : 81.007
* SCC CODE : 30300907
PRIMARY FUEL :
THROUGHPUT : 0
THROUGHPUT UNIT :
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : SO2
* CAS NUMBER : 7446-09-5
* CONTROL METHOD CODE : P
* CONTROL METHOD DESCRIPTION :
FUEL SPEC: USE OF COKE WITH 0.65% SULFUR CONTENT
NUMBER OF OPTIONS CONSIDERED : 5
RANK OF OPTION SELECTED : 5
PRIMARY EMISSIONS : 0.2
PRIMARY EMISSIONS UNIT : LB/TON STEEL
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 26

ALTERNATE EMISSION UNIT : LB/HR
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : A
* CONTROL METHOD DESCRIPTION :
DIRECT SHELL EVACUATION (DSE) W/ ENLARGED DUCT
NUMBER OF OPTIONS CONSIDERED : 7
RANK OF OPTION SELECTED : 7
PRIMARY EMISSIONS : 2
PRIMARY EMISSIONS UNIT : LB/TON STEEL
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 0
ALTERNATE EMISSION : 260
ALTERNATE EMISSION UNIT : LB/HR
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES :
RBLC ID : IN-0055
SUFFIX :
*COMPANY : KOBELCO METAL POWDER OF AMERICA, INC.
ADDRESS : 1625 BATEMAN DRIVE, POB 983
CITY : SEYMOUR
COUNTY : JACKSON
STATE : IN
ZIP CODE : 47274-
EPA REGION : 5
AGENCY CODE : IN001
AGENCY NAME : INDIANA DEPT OF ENV MGMT, OFC OF AIR
CONTACT : MARK C. STODDARD
PHONE : (317) 232-8322
*PERMIT/FILE # : CP-071-2546
*SIC : 3399
AIRS ID : 071-00016
APPLICATION RECEIVED DATE : 06/30/92 (Actual)
PERMIT ISSUANCE DATE : 12/10/93 (Actual)
START UP DATE : / /
COMPLIANCE VALIDATION DATE: / /
ENTRY DATE : 05/12/94

LAST UPDATE : 08/12/94
NOTES :
7.2 TPH ELECTRIC ARC FURNACE WITH DOGHOUSE ENCLOSURE; 67,200 SCFM BAGHOUSE;
1.45 MMBTU/HR ATOMIZING FACILITY; 12.55 MMBTU/HR STEAMTUBE ROTARY DRYER KILN; METAL POWDER CLASSIFYING; 23.55 MMBTU/HR REDUCTION/ANNEALING FURNACES
EXISTING PLANT. REVIEWED AS NEW SOURCE ADDING NEW REDUCTION/ANNEALING FURNACE AND INCREASING PRODUCTION FROM 6.9 TO 7.2 TPH. PERMIT PREVIOUSLY ISSUED (36-02-93-0110; FEB.1, 1993) LIMITING CO EMISSIONS FROM ELECTRIC ARC FURNACE EAF TO 97.2 TPY TO AVOID PSD REVIEW. COMPLIANCE WITH CONTINUOUS CO EMISSIONS MONITOR. COMPLIANCE WITH CO LIMITS FROM EAF DEMONSTRATED THROUGH
USE OF EXISTING CO CONTINUOUS MONITOR.

* PROCESS : FURNACE, ELECTRIC ARC
* PROCESS TYPE : 81.007
* SCC CODE : 30300908
PRIMARY FUEL :
THROUGHPUT : 0
THROUGHPUT UNIT :
COMPLIANCE VERIFIED : N
STACK TESTING : N
INSPECTIONS : N
CALCULATIONS : N
OTHER TESTING : N
OTHER TESTING METHOD :
PROCESS/COMPLIANCE NOTES:

* POLLUTANT : CO
* CAS NUMBER : 630-08-0
* CONTROL METHOD CODE : B
* CONTROL METHOD DESCRIPTION :
DOGHOUSE ENCLOSURE EVACUATED TO BAGHOUSE
NUMBER OF OPTIONS CONSIDERED : 1
RANK OF OPTION SELECTED : 1
PRIMARY EMISSIONS : 10.5
PRIMARY EMISSIONS UNIT : LB/TON 24 AVG PERIOD
* BASIS : BACT-PSD
* PERCENT EFFICIENCY : 99
ALTERNATE EMISSION : 23
ALTERNATE EMISSION UNIT : TPM
STANDARD EMISSION : 0
STANDARD EMISSION UNIT :
* EMISSION TYPE : P
CAP COST OF CONTROL EQUIPMENT : 0
O/M COST OF CONTROL EQUIPMENT : 0
ANNUALIZED COST : 0
COST EFFECTIVENESS : 0
COST VERIFIED BY AGENCY : N
DOLLAR YEAR USED IN COST ESTIMATES

4.0
BEST AVAILABLE CONTROL TECHNOLOGY REVIEW

4.1 REQUIREMENTS AND APPLICABILITY

BACT is defined as an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation which would be emitted from any proposed major stationary source or major modification which the Administrator (on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs) determines is achievable for such pollutant. BACT limitations must not cause the exceedance of any applicable New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Pollutants (NESHAP).

The requirement to conduct a BACT analysis and determination is set forth in Section 165(a)(4) of the Clean Air Act and in federal regulations at 40 CFR 52.21(j). BACT must also comply with all the applicable limits established by the State of Illinois.

BACT is required for each regulated major source pollutant emitted in excess of the significant emission rates. Individual BACT determinations are to be performed for each pollutant subjected to a PSD review emitted from the same emission unit. The BACT determination must also separately address, for each regulated pollutant with a significant emission increase at the source, air pollution controls for each emissions unit or pollutant emitting activity subject to review.

Based on emission estimates for the proposed project, a BACT review is required for both SO_2 and CO control for the proposed project and is presented in the following format:

- BACT procedures
- Control Technology Review
- Previous BACT Determinations
- BACT Conclusion

Preparation of the BACT analysis included in this document incorporates the most recent "top-down" BACT guidance (EPA, 1990) by United States Environmental Protection Agency (EPA) for PSD permit determinations. That is, for each pollutant, the most stringent emission limit potentially applicable for a given pollutant was considered and then compared to the proposed project to determine its technical and economic feasibility.

When the most stringent technically feasible emission limitation is not selected as BACT, justification must be provided in terms of adverse economic, environmental, or energy impacts. Several other factors may be considered in justification of rejecting more stringent controls, including:

a. A showing that utilizing the control would adversely impact the project's financial viability.

b. A showing that the costs associated with the control are significantly higher for this specific project than for other similar projects that have installed this control system or in general for controlling the pollutant.

c. A showing that those economic considerations outweigh the energy and environmental benefits.

4.2 SO_2 CONTROL TECHNOLOGY REQUIREMENTS AND APPLICABILITY

The sources of SO_2 emissions impacted by the proposed production increases and considered as a part of the BACT review include the blast furnace stoves, the blast furnace casthouse, the ladle dryer preheater and the continuous casters. The increase in iron-making by the blast furnaces may correspondingly increase the production of process blast furnace gas.

4.2.1 INHERENTLY LOWER-EMITTING PROCESSES/PRACTICES

4.2.1.1 Blast Furnace Stoves

The blast furnace stoves will burn increased amounts of blast furnace gas and comparable amounts of natural gas to accommodate the production increase. Due to the low

concentrations of SO_2 and other pollutants in blast furnace gas and natural gas, these products are typically thought of as clean burning fuels[1].

Emissions of SO_2 will be impacted by the quantity of fuel required and the sulfur content of the fuel. For example, blast furnace gas has trace amounts of sulfur but is lower in heating value than natural gas or fuel oil. Therefore, it takes a much greater volume of blast furnace gas to provide the same heat energy as these other fuels. The greater volume and respective sulfur concentration must be compared to the lower volumes and respective sulfur concentration for natural gas or fuel oil to determine a lower emitting practice.

Based on fuel data for each type of fuel used, the lowest emitting fuel for SO_2 is natural gas (approximately 6.0×10^{-4} lbs/mmBtu). The next lowest emitting fuel for SO_2 is blast furnace gas (approximately 8.3×10^{-2} lbs/mmBtu). There may be a small increase in fuel oil use associated with the production increase. Fuel oil combustion results in SO_2 emissions of approximately 1.0 lb/mmBtu.

Increased quantities of blast furnace gas will be produced by the blast furnaces with the proposed production increase. If this fuel is not used in the blast furnace stoves or in other combustion sources, it must be flared. Although blast furnace gas is a higher emitting fuel than natural gas, substituting natural gas at the blast furnace stoves would still result in the combustion of the blast furnace gas at the flare. Therefore, combustion of blast furnace gas in the blast furnace stoves is the inherently lowest emitting practice on a plant-wide basis.

4.2.1.2 Casthouse Emissions

As discussed in Section 2.2, SO_2 emissions from iron-making operations are limited by process practices employing limestone and other fluxing agents in the burden. Due to the reducing atmosphere and the fluxes used in the furnace burden to remove impurities, wide ranges of sulfur in the burden are efficiently removed (98+ %), predominately into the slag. Some trace amounts of sulfur are also in the iron. This necessary burden practice of adding limestone and fluxes effectively and effectively reduces SO_2 emissions to trace amounts[4]. No other lower emitting practices are in use in the steel industry[3,4,5].

4.2.1.3 Ladle Dryer Preheater and Continuous Caster Emissions

The ladle dryer preheater and continuous casters may require an increase in fuel usage as a result of the production increase. However, because natural gas is the only fuel used at these units, the lowest emitting practice is in place and will continue to be employed.

4.2.2 SO_2 CONTROL TECHNOLOGY OPTIONS

There are no add-on SO_2 control technologies currently in use in the steel industry for SO_2 control at blast furnace stoves using process blast furnace gas, or to control SO_2 at the blast furnace casthouse, ladle dryer preheater and continuous casters.

4.2.3 INFEASIBLE OPTIONS - SO_2

The proposed production increases to the blast furnaces will result in increased blast furnace gas generation and require additional fuel combustion in the blast furnace stoves. Blast furnace gas and natural gas are considered clean fuels and are the preferred supplemental fuels for the increased combustion needs based on inherently lower emitting practices.

Blast furnace gas is a low Btu fuel (approximately 80 Btu/cubic feet). Because of its low Btu value, large volumes of blast furnace gas are necessary to produce the required heat energy for the proposed production increases. Because the use of blast furnace gas in some processes is limited by other factors, such as physical limitations of the gas lines and burners, natural gas may also be used as a supplemental fuel. However, the overall quantity of natural gas usage throughout the plant will remain constant.

Blast furnace gas and natural gas typically contains approximately 0.01 and 0.001 percent sulfur (by weight). Based on these low sulfur concentrations, SO_2 reduction using add-on controls is technically infeasible.

4.2.4 SELECTED BACT - SO_2

Based on a review of the BACT/LAER clearinghouse, information obtained from the U.S. EPA Control Technology Group, and literature from the U.S. EPA Office of Air Quality

Planning and Standards, no add-on BACT determination has been made for SO_2 emissions at these sources. Based on the extremely low concentrations of SO_2 in blast furnace gas, control of SO_2 emissions at blast furnace stoves is not practiced in the steel industry[3,4,5].

The combustion of blast furnace gas in the blast furnace stoves to supplement existing fuel combustion is the only feasible option to support the proposed production increases. Therefore, this option is determined as BACT for SO_2.

Sulfur dioxide emissions from the blast furnace casthouse are effectively controlled by the solubility of sulfur containing gases in the liquid iron and the efficiency of fluxing to remove impurities, including SO_2. Based on the low SO_2 concentrations in casthouse emissions, reduction using add-on controls is technically infeasible. SO_2 emissions from the blast furnace casthouse are effectively reduced by using current industry work practices. This option is selected as BACT for casthouse SO_2 emissions.

The use of natural gas in the ladle dryer preheater and continuous casters is the only feasible control option to support the proposed production increases based on inherently lower emitting practices.

4.3 CO CONTROL TECHNOLOGY REQUIREMENTS AND APPLICABILITY

The major sources of CO emissions impacted by the proposed production increases include the blast furnace stoves, the basic oxygen furnaces (BOF), the ladle dryer preheater and the continuous casters. CO emissions may increase as a result of additional process blast furnace firing in the stoves, additional steel production at the BOF and additional fuel requirements at the ladle dryer preheater and continuous casters. A BACT review requires an evaluation of inherently lower-emitting processes/practices and technically feasible add-on controls.

4.3.1 INHERENTLY LOWER-EMITTING PROCESSES/PRACTICES

4.3.1.1 Blast Furnace Stoves

CO formation results from the incomplete combustion of fossil fuels and oxidation of carbon containing materials. The better the combustion practices, the lower the CO formation.

Good combustion practices requires the following elements:

- Proper fuel/air mixture
- Proper mixing
- High temperature

Good combustion practice is the inherently lowest emitting method of controlling CO emissions from combustion sources[2,6].

4.3.1.2 Basic Oxygen Furnaces (BOF)

CO is formed in the BOFs by oxidizing carbon in the molten iron. Because high-purity oxygen is the industry standard for making steel, there is no lower-emitting practice for this source.

4.3.1.3 Ladle Dryer Preheater and Continuous Casters

The ladle dryer preheater and continuous casters may require an increase in fuel usage as a result of the production increase. However, because natural gas is the only fuel used at these units, the lowest emitting practice is in place and will continue to be employed.

4.3.2 CO CONTROL TECHNOLOGY OPTIONS

The following control technologies are currently available to control CO emissions from affected sources.

4.3.2.1 Blast Furnace Stoves

The following add-on control technology options are currently available to control CO emissions from the blast furnace stoves:

- Direct Combustion (flaring)
- Thermal Oxidization
- Catalytic Oxidation

Direct Combustion

Flaring is a combustion control process in which combustible gases are burned in an open flame in the open air using a specially designed burner tip. Completeness of combustion in a flare is governed by flame temperature, residence time in the combustion zone, turbulent mixing, and available oxygen. The major factors affecting flare combustion efficiency are gas flammability, auto-ignition temperature, heating value (Btu/scf), density, and flame zone mixing.

The heating value affects flame stability, emissions, and flame structure. A lower heating value produces a cooler flame that does not favor combustion and is more easily extinguished.

Thermal Oxidizers

Thermal oxidizers refer to any device that uses a flame combined within an enclosed chamber to convert combustible gases to carbon dioxide and water. Thermal oxidizers operate most effectively at temperatures between 1,300 to 1,500°F with a residence time of 0.1 to 0.5 seconds. By raising the temperature, the residence time for complete combustion can be reduced and vice versa. However, temperature is the more important process variable. The removal efficiency for CO is in the range of 90 to 95 percent.

Besides temperature and residence time, the concentration of the pollutant in the gas stream also affects operation of the system. The concentration of the pollutant dictates the amount

of supplemental fuel required. Low concentrations of the combustible gas require increased supplemental fuel usage.

Catalytic Oxidation

Catalytic incinerators employ a bed of active material (catalyst) that facilitates the overall combustion reaction. The catalyst is a substance that speeds up the rate of a chemical reaction at a given temperature without being permanently altered. The use of a catalyst in an enclosed combustor enables oxidation at temperatures in the range of 500 to 600°F. Common catalysts used in catalytic oxidation units are platinum or other metals. The catalysts are placed on an alumina pellet support or honeycomb support. The typical removal efficiency with this type of control is 90 percent.

Certain contaminants contained in the exhaust gas streams will chemically react or alloy with the catalyst and cause deactivation, including most heavy metal compounds. Sulfur is also considered a catalyst poison, but its effect is reversible.

4.3.2.2 Basic Oxygen Furnaces (BOF)

The BOF receives a charge composed of approximately 30 percent scrap and 70 percent molten iron and converts it to molten steel by utilizing a jet of high purity oxygen. The oxygen oxidizes the carbon and silicon in the molten iron, removes them, and provides heat for melting scrap.

Two primary systems for hooding and combustion of the BOF gases are currently used. The following control technologies are currently available and in use to control CO emissions from BOF vessels.

- Closed-hood combustion with exhaust stack flare
- Open-hood combustion with no additional controls

Closed-Hood Combustion w/Flare

A closed hood system suppresses combustion at the hood and collects the gases for combustion of CO at an exhaust stack flare. In a closed-hood system movable skirts seal the top of the furnace to limit air induction. Suppressed combustion hoods discourage air infiltration, with as low as 5 percent theoretical air. By suppressing combustion, the CO concentration is increased and the gases are more easily flared.

Open-Hood Combustion

Open combustion hoods allow excess air to be introduced in quantities up to 300 percent. With open hoods there is a gap between the hood and the furnace top into which air can be induced. In an open-hood system CO gases are combusted in the primary hood system with the addition of the excess air.

4.3.2.3 Ladle Dryer Preheater and Continuous Casters

There are no add-on CO control technologies currently in use in the steel industry for CO control at the ladle dryer preheater or continuous casters.

4.3.3 INFEASIBLE OPTIONS - CO

Low concentrations of CO are not effectively and efficiently controlled by emissions control devices[8]. Due to the low concentrations of CO gas in the exhaust stream of the blast furnace stoves, which are below the lower explosive limit (LEL) of 12.5 percent for CO, sustained combustion (flaring) cannot occur[7] without the use of a supplemental fuel. Because the use of supplemental fuel at the flare would result in higher emissions of other pollutants and the formation of additional CO, this is an infeasible option.

The Granite City facility is already equipped with an open hood system on the BOFs where CO is combusted in the hood. Switching to a closed-hood system would require a large capital expense and would be economically infeasible. The residual CO from open-hood combustion is at a concentration level that is not technically feasible to treat further.

4.3.4 SELECTED BACT - CO

A review of BACT/LAER Clearinghouse, U.S. EPA Control Technology Group, and U.S. EPA Office of Air Quality and Planning literature was conducted to determine the current BACT status for sources within the steel industry. Based on this review and the previous evaluation of BACT options, the following BACT determinations for CO were made for sources impacted by the proposed production increases.

4.3.4.1 BACT - Blast Furnace Stoves

BACT literature indicates that blast furnace stoves at steel mills are not using add-on control equipment for CO emissions control. CO emissions can be adequately controlled by the use of good combustion practices. Therefore the BACT recommendation for control of CO emissions from the blast furnace stoves is the maintenance of good combustion practices.

4.3.4.2 BACT - Basic Oxygen Furnaces (BOF)

The open hood system used by Granite City Steel is a process control with the CO being combusted in the hood system. This type of process does not use add-on controls. After combustion in the open hood system, the CO average concentration is approximately 2500 ppm. This concentration is too low for additional CO control to be technically feasible[8]. Therefore, the existing open hood system, operated in the manner necessary to produce a quality product, is determined to be BACT for the BOFs.

4.4 REFERENCES

1."Pollution Effects of Abnormal Operations in Iron and Steelmaking. Vol. I. U.S. Environmental Protection Agency. EPA- 600/2-78-118.

2. A.J. Buonicore and W.T. Davis. "Air Pollution Engineering Manual. "Van Nostrand Reinhold, New York, 1992.

3. A. Vervaert, U.S. EPA Office of Air Quality Planning and Standards, Control Technology Group, personal communication.

4. D. Schuerer, American Institute of Steel Industries, Technical Representative, Pittsburgh, Pa., personal communication.

5. E. Wojcheckowski, U.S. EPA Region V, Air and Radiation Section, personal communication.

6. Air Pollution Technology Institute, Course 427 "Combustion Evaluation", manual. EPA 450/2-80-063.

7. Office of Air Quality Planning and Standards, Control Cost Manual. EPA 450/3-90-006.

8. A. Marshall, John Zink Company, personal communication.

"Basic Oxygen Process Furnaces". U.S. Environmental Protection Agency. EPA 340/1-77-02.

Air Pollution Technology Institute, Course 415, "Control Of Gaseous Emissions, " manual. EPA 450/2-81-005.

Iron and Steel Plant Inspection Workshop. Volumes I and II. Pedco Environmental, Inc., 1983.

TABLE 3-3
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - SO2

Projected Emissions Based On: Blast Furnace @ 9,100 NTPD
BOF @ 10,300 NTPD

LINE #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy	COMMENTS
1	0004	01	"A" Blast Furnace Stoves - BFG	6.65	lb/MMcf	22,774	MMcf	75.72	included in line 19	-	-	-	-
2	0009	01	"B" Blast Furnace Stoves - BFG	6.65	lb/MMcf	22,203	MMcf	73.82	included in line 19	-	-	-	-
3	0008	01	Blast Furnace Gas Flare - BFG	6.65	lb/MMcf	26,132	MMcf	86.89	included in line 19	-	-	-	-
4	0041	01	Boiler House 1 (Blrs 1-10) - BFG	6.65	lb/MMcf	37,501	MMcf	124.69	included in line 19	-	-	-	-
5	0041	91	Boiler House 1 (Blrs 1-10) - NG	0.6	lb/MMcf	361	MMcf	0.11	included in line 18	-	-	-	-
6	0044	01	Boiler #11 - BFG	6.65	lb/MMcf	5,323	MMcf	17.70	included in line 19	-	-	-	-
7	0044	91	Boiler #11 - NG	0.6	lb/MMcf	226	MMcf	0.07	included in line 18	-	-	-	-
8	0044	92	Boiler #11 - Fuel Oil	141.3	lb/Mgal	15.00	Mgal	1.06	included in line 20	-	-	-	-
9	0048	01	Boiler #12 - BFG	6.65	lb/MMcf	7,106	MMcf	23.63	included in line 19	-	-	-	-
10	0048	91	Boiler #12 - NG	0.6	lb/MMcf	218	MMcf	0.07	included in line 18	-	-	-	-
11	0048	92	Boiler #12 - Fuel Oil	141.3	lb/Mgal	1.00	Mgal	0.07	included in line 20	-	-	-	-
12	0038	01	BOF Preheaters/Dryers - NG	0.6	lb/MMcf	283	MMcf	0.08	included in line 18	-	-	-	-
13	0007 & 0012	01	"A & B" Blast Furnace - Casthouse	0.2008	lb/ton proc.	2,059,557	tons proc.	206.57	3,321,500	tons proc.	422.00	-	Est. Annual Max
14	0005 & 0010	01	"A & B" Blast Furnace - Uncap. roof	0.0104	lb/ton proc.	2,059,557	tons proc.	10.71	3,321,500	tons proc.	21.94	-	Est. Annual Max
15	----	--	Iron Spout Baghouse	0.0073	lb/ton proc.	2,059,557	tons proc.	7.52	3,321,500	tons proc.	13.89	-	Est. Annual Max
16	0071 & 0118	01	Continuous Casters #1 & #2 - NG	0.6	lb/MMcf	57	MMcf	0.02	included in line 18	-	-	-	
17			Natural Gas	0.6	lb/MMcf	-	MMcf	-	1,145	lb/MMcf	0.34	-	
18			Blast Furnace Gas	6.65	lb/MMcf	-	MMcf	-	185,030	lb/MMcf	615.22	-	
19			Fuel Oil	141.3	lb/Mgal	-	Mgal	-	365	lb/Mgal	25.79	-	
	TOTALS:							628.73			1,099.19	470.46	
			Contemperaneous Changes									(0.18)	
			Net Change									***470.28***	

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TABLE 3-1
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - CO

Projected Emissions Based On: Blast Furnace @ 9,100 NTPD
BOF @ 10,300 NTPD

LINE #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy
1	0004	01	"A" Blast Furnace Stoves - BFG	13.7	lb/MMcf	22,774	MMcf	156.00	included in line 17	-	-	-
2	0009	01	"B" Blast Furnace Stoves - BFG	13.7	lb/MMcf	22,203	MMcf	152.09	included in line 17	-	-	-
3	0008	01	Blast Furnace Gas Flare - BFG	13.7	lb/MMcf	26,132	MMcf	179.00	included in line 17	-	-	-
4	0041	01	Boiler House 1 (Blrs 1-10) - BFG	13.7	lb/MMcf	37,501	MMcf	256.88	included in line 17	-	-	-
5	0041	91	Boiler House 1 (Blrs 1-10) - NG	40	lb/MMcf	361	MMcf	7.22	included in line 18	-	-	-
6	0044	01	Boiler #11 - BFG	13.7	lb/MMcf	5,323	MMcf	36.46	included in line 17	-	-	-
7	0044	91	Boiler #11 - NG	40	lb/MMcf	226	MMcf	4.52	included in line 18	-	-	-
8	0044	92	Boiler #11 - Fuel Oil	5.0	lb/Mgal	15.00	Mgal	0.04	included in line 18	-	-	-
9	0048	01	Boiler #12 - BFG	13.7	lb/MMcf	7,106	MMcf	48.68	included in line 17	-	-	-
10	0048	91	Boiler #12 - NG	40	lb/MMcf	218	MMcf	4.36	included in line 18	-	-	-
11	0048	92	Boiler #12 - Fuel Oil	5.0	lb/Mgal	1.00	Mgal	0.00	included in line 18	-	-	-
12	0033	01	BOF 2 Vessels	8.993	lb/ton proc.	2,413,406	ton proc.	10,851.88	3,759,500	ton proc.	16,904.59	
13	0038	01	BOF Preheaters/Dryers - NG	40	lb/MMcf	283	MMcf	5.66	included in line 18	-	-	-
14	0071 & 0119	01	Continuous Casters #1 & #2 - NG	40	lb/MMcf	57	MMcf	1.14	included in line 18	-	-	-
15			Natural Gas	40	lb/MMcf	-	-	-	1,145	MMcf	22.90	-
16			Blast Furnace Gas	13.7	lb/MMcf	-	-	-	185,030	MMcf	1,267.46	-
17			Fuel Oil	5.0	lb/Mgal	-	-	-	365	Mgal	0.91	-
	TOTALS:							**11,703.94**			**18,195.86**	**6,491.92**
			Contemperaneous Changes									(13.05)
			Net Change									***6,478.87***

R008645

R0008646

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TABLE 1- EMISSIONS SUMMARY (tons/year)

Other projects changing emissions since 1990	Date	PM/ PM-10	SO2	NOx	CO	VOM	Lead
Removal of blast furnace slag spout hood	1/90	+4.9					
Addition of #2 continuous caster	12/90	+11.7					
Shutdown of ingot teeming operations	4/91	-22.4					
Shutdown of blooming mill	4/91	-3.38	-0.34	-217.8	-22.1	-0.9	
Installation of NESHAP controls at Coke By-Products plant	7/91					-31.6	
Shutdown of batch annealing	12/91	-0.18	-0.04	-8.7	-1.2	-0.3	
Initiation of fugitive dust control program[1]	11/91 - present	-416					
Installation of #8 galvanizing line	96	+4.0/ +3.8	+2.0	+18.4	+10.2	+1.2	
Subtotal		-421.3/ -421.6	-0.18	-208.1	-13.1	-31.6	
Change in emissions from proposed production increase	96	-60.6/ +51.6	+475.8	+238.8	+5,685	+59.3	+0.54
Net change in emissions over the last 5 years		**-481.9/ -370.0**	**+470.3**	**+30.7**	**+5,672**	**+27.7**	**+0.54**
Net change in emissions over the last 5 years for purposes of NSR & PSD[2]		**-98.0/ +14.0**	**+470.3**	**+30.7**	**+5,672**	**+27.7**	**+0.54**

[1]Based on reduction in roadway emissions of 401 tons (428 - 27) and material handling of 15 tons (17 - 2).

[2]Cannot include some PM/PM-10 reductions from fugitive dust control since relied upon these reductions in the implementation plan used to demonstrate attainment with the NAAQS. Of the above 416 tons, 32 tons is considered creditable for PSD and NSR.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

MEMORANDUM

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

DATE: November 20, 1995

TO: James R. Ross

FROM: Michael T. Reischel MTR

SUBJECT: Granite City Steel Lead Air Quality Analysis for Proposed Production Increase

I have reviewed the modeling support document contained in Granite City Steel's application dated December, 1994 (amended October, 1995) for a proposed production increase for compliance with the appropriate USEPA guidance for PSD modeling of Pb(lead). The analysis prepared by Woodward-Clyde Consultants did not address air quality impacts for lead since the applicant has shown that total emissions of lead for this project are less than 0.6 TPY, which is the PSD significant emissions threshold. Per your request, I have performed a screening analysis to address the air quality impact of the anticipated lead emission increases.

To model the impact of the proposed production increase on lead air quality in the Granite City area the latest version of ISCLT was used in conjunction with five years of meteorology (St. Louis/Salem 1982-1986) and the receptor grid used for the SO2 SIP modeling. Modeled lead emissions were derived using the projected actual emissions (converted to g/s) from Table 3-7 of the Permit Application provided by Woodward-Clyde Consultants. The source parameters used were obtained from the EIS and were the same as those used for the SO2 and/or PM10 SIP modeling inventories.

In reviewing the analysis submitted with this application I have used: "Example Air Quality Analysis Checklist" found in Appendix C of "Guideline on Air Quality Models-Revised (EPA-450/2-78-027R), New Source Review Workshop Manual (Oct. 1990), Illinois Air Quality Report (1993 and 1994). It is my conclusion that the applicant has adequately demonstrated that the NAAQS will be maintained. The maximum impact resulting from the lead emissions increases associated with the proposed production increase is 0.031 ug/m3 (quarterly average). This concentration is well below the monitoring de minimis threshold of 0.1 ug/m3 and the NAAQS of 1.5 ug/m3.

cc: Rob Kaleel
Toby Prevert

file:G:mtr:rom2

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

MEMORANDUM

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

DATE: November 17, 1995

TO: James R. Ross

FROM: Michael T. Reischel

SUBJECT: Granite City Steel-Air Quality Review for Proposed Production Increase

I have reviewed the modeling support document contained in Granite City Steel's application dated December, 1994 (Amended, October, 1995) for a proposed production increase for compliance with the appropriate USEPA guidance for PSD modeling of SO_2 and CO. The modeling analysis was prepared by Woodward-Clyde Consultants. The modeling analysis meets the Agency's modeling criteria and adequately demonstrates that no violation of the NAAQS or PSD increment will occur for these pollutants.

Woodward-Clyde Consultants have used the X/Q method in the submitted modeling document. This method differs from a traditional NAAQS analysis; however, the X/Q approach is more conservative, (i.e., provides higher predicted pollutant impacts), and is therefore acceptable.

It should be noted that modeled ambient impact concentrations do exceed the de minimis PSD monitoring thresholds (575 ug/m^3 for CO and 13 ug/m^3 for SO_2) and the applicant is relying on the IEPA's available monitoring network (2001 Edison Street for CO and South Roxana for SO_2) to state that preconstruction monitoring should not be required.

It should also be noted that the applicant has relied on IEPA's SIP modeling analysis to address the NAAQS for SO2. The proposed production increase will not result in SO_2 emissions which are greater than those contained in the SIP modeling analysis and resulting FESOP issued last summer. Woodward-Clyde Consultants have further stated that no increase in COG (coke oven gas) will result from the proposed production increase.

I have verified the applicant's model runs by two independent methods using as input to the latest version of ISCST2 (93109) on the IEPA computers: a) the files submitted by Woodward-Clyde, and b) the input files from the SO_2 SIP modeling adjusted to reflect the proposed production increases.

In reviewing the modeling submitted with this application I have used: "Example Air Quality Analysis Checklist" found in Appendix C of "Guideline on Air Quality Models-Revised (EPA-450/2-78-027R), New Source Review Workshop Manual (Oct. 1990), Illinois Air Quality Report (1993 and 1994). It is my conclusion that the modeling analysis performed by Woodward-Clyde meets the Agency's modeling criteria, and that the study adequately demonstrates that exceedances of the SO_2 and CO NAAQS, and exceedances of the PSD increment for SO_2, will not occur as a result of the proposed production increase.

cc: Rob Kaleel
Toby Prevert

file:Gimcr-rom

M E M O R A N D U M

RECEIVED
Division of Legal Counsel
Illinois EPA Bureau of Air
AUG 01 1995
Environmental Protection Agency

DATE: July 25, 1995

TO: Rachel Doctors

FROM: Jeff Benbenek

SUBJECT: Proposed Revisions to 35 IAC 212

I have reviewed the May 23, 1995, draft of the proposed revisions to the subject Regulations and have the following comments.

1. Compliance could also be determined by the use of an approved opacity monitor for 35 IAC 212.443(g)(2). Note that National Steel Corporation - Granite City has had an opacity monitor on the coke oven battery "B" stack since the early 1980's.

2. The opacity limit of 20% for 35 IAC 212.446(c) will be on a three-minute rolling average. In essence, any twelve consecutive opacity readings taken in accordance to Method 9 would be averaged.

3. Be advised that there is a good possibility that National Steel Corporation will agree to a grain loading limit of 0.015 gr/dscf on their BOF control equipment exhaust stack (electrostatic precipitator). This limit has been brought up to them in discussions concerning their application for a production increase at their blast furnaces and BOF. An opacity limit of 20% on a six-minute block average was also suggested for that exhaust stack.

If these limitations would be adopted for NSC's BOF in conjunction with the proposed 35 IAC 212.446(c), 35 IAC 212.446(a) would no longer be needed for that source.

JJB:jlr/2793A

cc: BOA - Collinsville
cc: Rob Kaleel - AQA

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Element 1
Basic Oxygen Furnace (BOF) Stack Emissions

There are a number of options for estimating baseline BOF emissions from the BOF stack. Future emissions are set by the attainment demonstration at 68.5 lb/hr, unless Granite City Steel is willing to accept a lower emission level.

Option 1- 46.7 lb/cycle
The test data is not indicative of the actual performance of the BOF ESP prior to recent improvements. In fact, the ESP has performed marginally as compared to the applicable limit of Section 212.446. Actual emissions for the netting excercise are based on the allowable emission rate adjusted to account for the fact that GSC normally operated in compliance with the allowable limit by some compliance margin. This compliance margin is assumed to be operation at 90% of the allowable emission rate. In addition, the Granite City Steel approach to Section 212.446, so that the full allowable limit of 51.92 lb/cycle is available as the starting level.

51.92 x 0.9 = 46.7

Comments - Unrealistically high given actual test data. Even the average of the three older tests was only 38.9 lb/cycle. Only possible with the Granite City Steel approach to Section 212.446.

Option 2- 38.3 lb/cycle
Similar to above, except that the Permit Section's approach to Section 212.446 is followed, but only considering uncaptured tapping and charging emissions. The starting level for the emissions becomes 42.56 lb/cycle.

42.56 x 0.9 = 38.3

Comments - Omission of refining emissions not justified from a technical perspective and would set a bad precedent. Baseline emissions would only be about 21 tons/yr higher than under Option 3.

Option 3- 35.27 lb/cycle
As above, but uncaptured refining emissions are also considered for a starting emission level of 37.13 lb/cycle, with a slightly poorer compliance margin of 95%. This emission rate would indicate that typical emissions have been about 50% higher than the "excellent" conditions during the most recent emissions test in 1993.

37.13 x 0.95 = 35.27

Comments - The assumed compliance margin suggests that Granite City Steel was routinely out of compliance.

Option 4- 33.42 lb/cycle
As above, including uncaptured refining emissions with the more realistic compliance margin of 90%. This emission rate would indicate that typical emissions have been about 40% higher than the "excellent" conditions during the most recent emissions test.

37.13 x 0.9 = 33.42

Comments - Reasonably justified.

Option 5- 32.0 lb/cycle
Emissions based on 1990 test as more representative of typical operation than the most recent test.

Comments - Undesirable to consider any test as the starting point for netting given the day to day operation of the ESP. This test is particularly problematic as it would require us to overlook a more recent test that shows much better results..

Option 6- 23.4 lb/cycle
Emissions based on most recent test at 23.4 lb/cycle.

Comments - Unreasonably low given the actual operation of the ESP on a day to day basis.

Element 2
Basic Oxygen Furnace (BOF) Roof Monitor Emissions

There are a number of options for estimating BOF emissions through the roof monitor. Estimates need to be made for both historical emissions and future emissions. The related issue is how the attainment demonstration is developed to account for these emissions. The soundest approach would be to develop an attainment demonstration that shows attainment with the historical level of emissions if at all possible. This would appear to mean a BOF roof monitor emission rate on the order of 90 lb PM10 per hour. An approach that only legitimizes the proposed future level of emissions is much more open to challenge by USEPA. A review of the September 19 culpability analysis for Receptor B suggests that it may be difficult to develop an attainment demonstration that accomodates this level of emissions.

Option 1 - Current Granite Steel Proposal

Granite City Steel currently proposal for the PM10 emissions of the BOF roof monitor is **"0.33 lb/ton steel".** This factor is developed as follows from USEPA emission factors for total particulate matter emissions from BOF:

USEPA factor for BOF roof monitor(total) -		0.50 lb/ton
USEPA factor for BOF Charging		- 0.16 lb/ton
Calculated factor for BOF Refining & Tapping		0.34 lb/ton

Charging	0.016	0.16 x "90% capture"
Refining & Tapping	+ 0.340	
	0.356	
Adjustment to PM10	0.356	
	x 0.92	
	0.3275 or 0.33 lb/ton	

For the future, Granite City Steel projects an emission factor of **0.10 lb/ton steel** as follows, based on the improved performance of the new control system. No explanation is provided for the assumed improvements in capture efficiency. The result of these factors is a PM10 credit of 205 tons/yr.

Charging	0.0096	0.016 x "40% improvement in capture"
Refining & Tapping	0.102	0.34 x "70% improvement in capture"
	0.1116 x .92 = 0.1027 or 0.10 lb/ton	

Observation - Granite City Steel's derivation is questionable. There is no justification to add uncaptured charging to the factor for roof monitor emissions. Presumably, the roof monitor factor already accounts for uncaptured charging emissions lost through the roof monitor. In addition, the charging factor is based

on test results published by USEPA in 1979. An unresolved issue for interpreting these tests is the fraction of PM10 present. In particular, Indiana DEM assumes that the PM10 fraction for charging emissions is only 45%. USEPA has suggested that the PM10 fraction for a BOF is 67%. The Agency has generally assumed a 92% PM10 fraction for all BOF emissions. A corrected version of Granite City Steel's evaluation, assuming a 92% PM10 fraction, results in a PM10 factor of **0.31 lb/ton**, as follows.

AP-42 Factor for BOF roof monitor(total) -	0.34 lb/ton
	x *0.92* PM10 fraction
	0.3128 or 0.31 lb/ton

Comments - The methodology for calculating uncaptured refining emissions by "difference" is scientifically less sound than a direct estimate of uncaptured emissions. The difference method relates data of limited accuracy/certainty to create a value of even less accuracy/certainty, especially when one considers the need to adjust from total particulate matter to PM10. In general, the Agency should minimize its reliance on this sort of methodology.

Option 2 - Generous evaluation based on permitting of Acme Steel

Acme Steel's recent construction permit for a continuous casting system and production increase provides a basis to evaluate Granite City Steel's BOF roof monitor emissions. (It is also appropriate that the PM10 attainment demonstration reflect the information in Agency permitting.) The assigned PM10 emission factor for issuance of Acme's permit was 0.16 lb/ton. The emission factor for the roof monitor was actually higher at 0.3 lb/ton but the factor also accounted for other emissions which are uncontrolled that escape from Acme's BOF roof monitor, such as deslagging. Acme's BOF is controlled by primary and secondary hoods and a tertiary scavenger hood in the roof monitor, to meet a 30% opacity limit. Possible derivations for this emission factor are as follows.

Derivation assuming 0.92 PM10 fraction for tapping and charging

charging	0.0107	0.1163 x "90% capture" x "92% PM10"
refining	0.131	13.1 x "99% capture"
tapping	0.0267	0.29 x "90% capture" x "92% PM10"
	0.1684, say 0.16 lb/ton	

In comparison, Granite City Steel's BOF is only controlled by primary and secondary hoods, again to meet a 30% opacity limit. Historically, the amount of aspiration through the capture hoods has been limited by ESP capability and poor maintenance of the ductwork. Also, flame suppression was not used on tapping until relatively recently. A generous evaluation supports an historical PM10 emission factor of **0.33 lb/ton**, assuming uncaptured refining emissions were twice as high at Granite City Steel, as explained below.

charging	0.0214	0.1163 x "80% capture" x "92% PM10

refining	0.262	13.1 x "98% capture"
tapping	0.0525	0.29 x "80% capture" x "92% PM10
	0.336, say 0.33 lb/ton	

In the future, the BOF will be controlled by primary and secondary hoods to meet a 20% opacity limit. There will be an increase in minimum air flow, as aspiration is not limited by ESP capability, after the recent addition of an additional ESP section. Flame suppression is also now being used on some tapping when it is effective. A range of estimates is possible for future emissions, as explained below, resulting in 143, 171, 208 and 227 tons of credit, respectively, assuming Granite City Steel is permitted for a production rate of 10,300 tons steel per day, as it has requested.

Estimates of future emissions

estimate 1:	charging	0.0107	0.107 x "90%"
	refining	0.09825	13.1 x "99%"
	tapping	0.0267	0.267 x "90%"
		0.1356, say **0.135 lb/ton**	
estimate 2:	charging	0.0107	0.107 x "90%"
	refining	0.09825	13.1 x "99%"
	tapping	0.01335	0.267 x "95%"
		0.1223, say **0.12 lb/ton**	
estimate 3:	charging	0.0107	0.107 x "90%"
	refining	0.0655	13.1 x "99.5%"
	tapping	0.0267	0.267 x "90%"
		0.1029, say **0.10 lb/ton**	
estimate 4:	charging	0.0107	0.107 x "90%"
	refining	0.0655	13.1 x "99.5%"
	tapping	0.01335	0.267 x "95%"
		0.0896, say **0.09 lb/ton**	

Credit Evaluation

Historical production - 2,400,000 tons steel/year

2,400,000 x .33 lb/ton = 792,000 lb/year = 396 ton

Future allowed production - 3,750,000 tons steel/year

3,750,000 x .135 lb/ton = 506,250 lb/year = 253 ton for 143 tons credit
3,750,000 x .120 lb/ton = 506,250 lb/year = 225 ton for 171tons credit
3,750,000 x .100 lb/ton = 375,000 lb/year = 187.5 ton for 208 tons credit
3,750,000 x .090 lb/ton = 337,500 lb/year = 168.8 ton for 227 tons credit

Comment - The historical emission rate can be justified compared to Acme, given the better control system present at Acme. Interestingly, this factor also relates

well to the AP42 factor for total roof monitor emissions and USEPA's recommended PM10 fraction for BOF refining emissions.

0.50 lb/ton x .67% PM10 = .335 lb/ton

The more critical question is how much more efficient is it reasonable to expect Granite City Steel's control practices for the BOF to be if it commits to operate to comply with 20% opacity on a three minute average. The estimates above would indicate that the future emission rate overall would be 41%, 36%, 30% and 27% of the historical emission rate! Is it reasonable to assume that future refining or tapping emissions will be one quarter of historical levels? This is an extraordinary improvement when one remembers that the Field Operations Section believes that the BOF roof monitor has historically been meeting a 20% opacity limit, three minute average, much of the time. To help justify improved control for the interim permit, the Permit Section required an explicit increase in the minimum air flow from the primary BOF hood. Can anything be made of the fact that Acme's emissions generate "less opacity" because its furnace is about half the size of Granite City Steel's?

On the other hand, can a PM10 attainment demonstration be developed that accomodates a higher factor for roof monitor emissions? In particular, if an attainment demonstration can only be developed that accomodates 50 lb PM10 from the roof monitor, the future PM10 emission factor must be no more than 0.116 lb/ton to accomodate Granite City Steel's desired production rate of 10,300 tons steel per day. The 0.135 lb/ton factor would limit production to only 8,890 tons/day!

Option 3 - Alternative generous evaluation considering Acme Steel

Although the assigned PM10 emission factor for issuance of Acme's permit was 0.16 lb/ton, this number can not be readily reconstructed if one uses the lower PM10 fractions reccommended by USEPA. for charging and tapping and USEPA factor for PM10 emissions from refining.

Derivation assuming PM10 fraction, as recommended by USEPA

charging	0.00535	0.1163 x "90% capture" x "**46% PM10**"
refining	0.131	13.1 x "99% capture"
tapping	0.01305	0.29 x "90% capture" x "**45% PM10**"
	0.1494, say 0.15 lb/ton	

This alternative evaluation only supports a historical PM10 emission factor of **0.30 lb/ton** for Granite City Steel, assuming uncaptured refining emissions were twice as high at Granite City Steel, as explained below.

charging	0.0107	0.1163 x "80% capture" x "**46% PM10**"
refining	0.262	13.1 x "98% capture"
tapping	0.0261	0.29 x "80% capture" x "**45% PM10**"
	0.2988, say 0.30 lb/ton	

The range of estimates for future credits is 126, 172, and 201 tons, as explained below, assuming Granite City Steel is permitted for future production as it has requested.

Estimates of future emissions

estimate 1:	charging	0.00535	0.0107 x "50% future"
	refining	0.1048	0.262 x "40% future"
	tapping	0.01305	0.0261 x "50% future"
		0.1232, say **0.125 lb/ton**	
estimate 2:	charging	0.00535	0.0107 x "50% future"
	refining	0.08646	0.262 x "33% future"
	tapping	0.008613	0.0261 x "33% future"
		0.1004, say **0.10 lb/ton**	
estimate 3:	charging	0.00535	0.0107 x "50% future"
	refining	0.0655	0.262 x "25% future"
	tapping	0.01305	0.0261 x "50% future"
		0.0839, say **0.085 lb/ton**	

Credit Evaluation

Historical production - 2,400,000 tons steel/year

2,400,000 x .30 lb/ton = 720,000 lb/year = 360 ton

Future allowed production - 3,750,000 tons steel/year

3,750,000 x .125 lb/ton = 506,250 lb/year = 234.4 ton for 126 tons credit
3,750,000 x .100 lb/ton = 375,000 lb/year = 187.5 ton for 172 tons credit
3,750,000 x .085 lb/ton = 337,500 lb/year = 159.4 ton for 201 tons credit

Comment - This historical emission rate cannot be directly justified based on Acme, given the discrepancy between 0.15 and 0.16!

The estimates above would also indicate that the future emission rate would be 42%, 33% and 287% of the historical emission rate! This is only slightly less efficient than Option 2, and is still open to question. Finally, the improvements in future performance appear more arbitrary.

Option 4 - Conservative evaluation based on permitting of Acme Steel

A more conservative evaluation of Acme Steel provides a PM10 emission factor of **0.25 lb/ton**, assuming uncaptured refining emissions were only 50% higher at Granite City Steel, as explained below.

charging	0.01605	0.107 x "85% capture"
refining	0.1965	13.1 x "98.5% capture"
tapping	0.04005	0.267 x "85% capture"
	0.2526, say 0.25 lb/ton	

Based on the above range of estimates for future emissions, the resulting credits are 47, 112 or 131 tons.

Credit Evaluation

Historical emissions - 300 ton/year

Future allowed production - 3,750,000 tons steel/year

3,750,000 x .135 lb/ton = 506,250 lb/year = 253 ton for 47 tons credit
3,750,000 x .10 lb/ton = 375,000 lb/year = 187.5 ton for 112 tons credit
3,750,000 x .09 lb/ton = 337,500 lb/year = 168.8 ton for 131 tons credit

Comment - The historical emission rate is very reasonable compared to Acme, given the better control system present at Acme. However, the Agency has limited support for arguing that Granite City Steel's emissions are only 50% higher than Acme's. Use of this factor would be seriously questioned by Granite City Steel as it results in insufficient credits for any significant expansion.

Option 5 - Initial Proposal by Granite City Steel
Granite City Steel initially proposed a PM10 emission factor for the BOF of **0.12 lb/ton steel**, as follows.

charging	0.0107	0.107 x "90%"
refining	0.08188	calculated by difference
tapping	0.0267	0.267 x "90%"
	0.1193, say 0.12 lb/ton	

Comments - The estimate is unrealistically low for historical emissions as compared to Acme Steel. The estimate is again based on a "difference" calculation. Finally, this factor provides minimal recognition of the importance of the actual improvements that Granite City Steel has made to the control system at the BOF, by repairing ductwork and adding an additional section to the ESP. This estimate is only of use as an estimate of future emissions from the roof monitor. Even for this purpose, it would limit production to only 10,000 tons of steel, if the attainment demonstration can only accomodate 50 lb/hour from the roof monitor.

Basic Oxygen Furnace - Roof Monitor Emissions

Acme Steel

Current operation - Controlled by primary and secondary hoods and tertiary scavenger hood in the roof monitor to meet a 30% opacity limit. Assigned PM10 emission factor - 0.16 lb/ton

Estimate:	charging	0.012	0.12 x "90%"
	refining	0.0855	28.5 x "99.7%"
	tapping	0.058	0.29 x "80%"
		0.1555, say 0.16 lb/ton	

Future operation - Similar control system operated to meet a 20% opacity limit

Estimate:	charging	0.012	0.12 x "90%"
	refining	?	28.5 x "?%"
	tapping	?	0.29 x "?%"
		?, say ? lb/ton	

Granite City Steel

Historical operation - Controlled by primary and secondary hoods to meet a 30% opacity limit. Amount of aspiration limited by ESP capability. No flame suppression used on tapping.

Estimate:	charging	0.012	0.12 x "90%"
	refining	0.1710	28.5 x "99.4%"
	tapping	0.058	0.29 x "80%"
		0.2410, say 0.24 lb/ton	

Future operation - Controlled by primary and secondary hoods to meet a 20% opacity limit. Increased minimum air flow, as amount of aspiration not limited by ESP capability, due to addition of an additional section. Flame suppression used on portion of tapping when effective.

Estimate 1:	charging	0.012	0.12 x "90%"
	refining	0.0855	28.5 x "99.7%"
	tapping	0.029	0.29 x "90%"
		0.1265, say 0.13 lb/ton	

Estimate 2:	charging	0.012	0.12 x "90%"
	refining	0.0855	28.5 x "99.7%"
	tapping	0.0145	0.29 x "95%"
		0.112, say 0.11 lb/ton	

Estimate 3:	charging	0.012	0.12 x "90%"
	refining	0.057	28.5 x "99.8%"
	tapping	0.029	0.29 x "90%"
		0.098, say 0.10 lb/ton	

Basic Oxygen Furnace - Stack Emissions

Allowed emissions set by Section 212.321 for each cycle

For a typical process weight rate of 284.5 ton/cycle to produce 230 tons of steel, allowed emissions are 51.92 lb/hour for the overall cycle, charging through tapping

The Agency's historical approach to determining compliance with this rule is to account for uncaptured emissions during charging, refining and tapping assuming a nominal level of uncaptured emissions.

charging- 10% uncaptured	230 ton steel/hour x 0.012 lb/ton	= 2.76 lb/cycle
refining- 0.1% uncaptured	" x .0285 lb/ton	= 6.56 lb/cycle
tapping- 10% uncaptured	" x 0.029 lb/ton	= 6.67 lb/cycle
		16.0 lb/cycle

Allowed emissions for the BOF ESP stack are 51.92 - 16.0 or 35.92 lb/cycle

Actual emissions for the netting excercise are 97.5% of the allowed, for a baseline emission rate of 35.0 lb/cycle

Credit Evaluation:

Historical production - 2,400,000 tons steel/year

2,400,000 x .24 lb/ton = 576,000 lb/year = 288 ton

Future allowed production - 3,750,000 tons steel/year

3,750,000 x .13 lb/ton = 487,500 lb/year = 243.75 ton or 44 ton credit
3,750,000 x .11 lb/ton = 412,500 lb/year = 206.25 ton or 72 ton credit
3,750,000 x .10 lb/ton = 375,000 lb/year = 187.5 ton or 100 ton credit

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

MEMORANDUM

DATE: October 2, 1995

TO: Dennis Lawler, Don Sutton, Rob Kaleel

FROM: Jim Ross

SUBJECT: Determination of available PM-10 emission credits for netting exercise of Granite City Division (GCD) production increase application.

A decision needs to be made regarding the amount of available emission credits which can be used by GCD in their attempt to net out of new source review (NSR) for PM-10.

Background:
GCD is attempting to net out of NSR for PM-10. For current netting situation refer to attachment A. The net PM-10 increase from the proposed project is now at 281 tons/yr. The significant increase level which triggers NSR is 15 tons. Therefore GCD needs at least 266 tons of emission credit to net out. They propose to obtain these credits from reductions occurring as a result of;

1. Over-control of fugitive roadway and material handling emissions, and
2. Increased capture and control at the BOF.

The Agency issued a construction permit for a limited production increase on September 22. This permit was issued to allow GCD some increase while the Agency resolved the above referenced issue of available credit for the larger increase. The limited increase did not undergo public notice or USEPA review, as would normally be required due to netting, since the Agency intends to go through these steps and hold a hearing for the full production increase. Current plans are to both public notice the hearing and send a draft of the full production increase permit to USEPA by the second week of October. To meet this deadline, a decision on available emission credits needs to be reached almost immediately.

Main Issue:
Agency needs to determine the amount of available credit from increased control measures at the BOF which in turn will determine if this project can be permitted for the

production increase level currently requested. The amount of available credit is dependent upon many factors including, applicability of process weight rule (PWR) to BOF roof emissions, method used to determine historic actual emissions, and the amount of emissions PM-10 modeling can accommodate. Further complicating the issue is the existence of several different approaches to estimating emissions and trying to maintain some consistency with other PM-10 modeling (Acme Steel) and historic PWR rule interpretation. GCD has claimed improved PM-10 capture efficiency at the BOF as a result of higher flow rates into the hoods which is possible due to the addition of 4th ESP section, and repairs and tightening of hoods and ductwork of the emissions capture system. Presented below are three options for determining BOF credit and the pros and cons associated with these options.

Option 1:
No credit is available for additional controls as this added control is needed to maintain emissions at the current level such that there is no increase. Based on GCD not being able to justify or directly measure the increase in capture at the hoods, no reductions in emissions result from these controls. As a result, the Agency cannot issue a permit at the current production levels requested unless GCS undergoes NSR, including LAER.

Pros;
- may eventually lead GCD to add further PM-10 control (possibly desulfurization of COG).

Cons;
- not consistent with the development of the PM-10 attainment demonstration.
- would have to Deny permit, which GCD would probably appeal and all the implications therein.
- GCD does not accept 20% opacity limit for PM-10 SIP.

Option 2 (modified GCD approach):
emission factor:
charge/refine/tap = 0.34 lbs total PM/ton steel at roof monitor, based on actual test of roof monitor emissions.

Assume 92% of PM is PM-10 based on AP-42 table C.2-2 for melting, smelting, and refining of metals. Note that USEPA recommended the following for use by Indiana: charge=0.47, refine=0.67, tap=0.45 - based on estimates of PM-10 fractions at source, not at roof. However, Illinois' PM-10

SIP uses 0.92. For Acme Steel caster project application used 0.67.

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,759,500

PM-10:

historic actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ ton steel)	assumed hood capture eff.
				charge >no assump.
				refine >needed,
				tap >test data
total	377.5	86.2	0.3128	
future potential				
				charge >70% improve
				refine >capture on
				tap >all
total	173.4	39.6	0.0922	

credit = 204.1

Pros;
- emission determinations are consistent with AP-42 and stack testing done to measure roof emissions.
- GCD would agree to lower opacity limit at the BOF roof monitor from 30% to 20%.
- estimates are lower than those which would occur using Indiana and USEPA methods.

Cons;
- **difficult to correlate and justify a 70% percent increase in capture for all hoods to the improvements at the BOF.**
- the level of historic emissions indicates non-compliance of BOF with PWR limit - **should it apply**.
- minimal data to support these reductions.
- still shy around 62 tons of credit needed to net out.

Option 3:
Lower request for annual production increase to 3,580,000 tons steel/yr.
Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced.
In this case netting exercise credit needed drops to;
(3,580,000/3,759,000)(266) = **253.3** tons

PM emission factors per AP-42:
charge = 0.6 lbs PM/ton hot metal at BOF
refine = 28.5 lbs PM/ton steel at BOF
tap = 0.92 lbs PM/ton steel at BOF
assume 92% of PM is PM-10
Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,580,000

PM-10:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	56.8	12.98	0.04711	90
refine	221.5	50.67	0.18354	99.3
tap	102.1	23.32	0.08464	90
total:	380.4	86.97	0.31529	
Future Potential				
charge	45.8	10.46	0.0256	95
refine	46.9	10.72	0.02622	99.9
tap*	72.0	16.44	0.04021	95
total:	164.7	37.62	0.09203	

CREDIT = 215.7
Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- historic actual correlates with GCD approach, therefore have two separate approaches arriving at the same emissions.
- emission determinations are consistent with AP-42 and stack testing done to measure roof emissions.

- gives high amount of credit for GCD, which can be adjusted even higher.
- emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- GCD would agree to lower opacity limit at the BOF roof monitor from 30% to 20%.
- estimates of charging hood capture eff. seem reasonable since GCD has a hood dedicated for charge capture. Reasonable to assume higher charging emissions capture at GCD as opposed to Acme Steel since Acme does not have a hood dedicated to charging capture.

Cons;
- the level of historic emissions indicates non-compliance of BOF with PWR limit - **should it apply.**
- no hard data to support these reductions.
- **need some logical transition from historic capture efficiencies to future capture efficiencies. Currently are just estimating.**
- higher capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- still shy around 51 tons of credit needed to net out.

Note that none of the options presented allow GCD to net out at the level of production increase currently requested.

cc: Harish Desai, Chris Romaine, Jeff Benbenek.
Application file No. 95010001, I.D. No. 119813AAI

G-BOFNET.DOC.JRR

ATTACHMENT A

PM-10 NETTING

Significant Increase = 15 tons/yr (triggers NSR - LAER)

FUTURE POTENTIAL from units/activities whose emissions are affected by proposed project = ? tons/yr

HISTORIC ACTUAL from units/activities whose emissions are affected by proposed project = ? tons/yr

POTENTIAL INCREASE as a result of proposed project = FUTURE POTENTIAL - HISTORIC ACTUAL

POTENTIAL INCREASE = 320 tons/yr

CONTEMPORANEOUS INCREASES = 19 tons/yr

CONTEMPORANEOUS DECREASES* = 58 tons/yr

Netting Equation:

CHANGE as a result of proposed project = (POTENTIAL INCREASE + CONTEMPORANEOUS INCREASES) - (CONTEMPORANEOUS DECREASES)

CHANGE = (320 + 19) - (58) = **281 tons/yr increase**

*Of the Contemporaneous Decreases, 32 tons is from Fugitive Dust Control Plan (roads and material handling - 20.36 and 11.76, respectively) and 26 tons is from shutdown of ingot teeming, blooming mill and batch annealing.

ATTACHMENT B

PWR RULE DISCUSSION

Historic application of rule has been that both stack (i.e., captured) and uncaptured emissions are added together and compared to allowable. Have treated other sources in this manner. In case of BOF, have measured the stack value by testing and added this to a calculated value for uncaptured (roof monitor) emissions using AP-42 factors and assuming a capture efficiency for the hoods. Problem arises in that there are many different ways to calculate BOF roof emissions (depending upon the assumptions made for hood capture and PM-10 fraction - USEPA, Indiana, Illinois all use different methods). This undermines the enforceability of this rule.

Perhaps a more appropriate method to limit emissions would be to have a mass emission limit only on the stack (e.g., lbs/hr, gr/dscf). Would have only an opacity limit for the BOF roof. That is limit captured and uncaptured emissions separately. This clarifies and simplifies as well as allows direct determinations of compliance, i.e., stack test for captured emissions and visual observations/opacity for uncaptured. Could revise rules in the PM-10 SIP to change to, or clarify that, this is the way compliance will be determined.

NSPS for BOFs says "For any type of mass limit to be effective in ensuring the capture of secondary emissions (aka, uncaptured), it would have to be possible to measure emissions that escape capture. Methodology does not exist to do this for BOPF steelmaking operations and, therefore, mass limits cannot be considered." The NSPS uses opacity limits at the roof to ensure capture.

The NSPS goes on to say that for stack emissions from a control device "A process weight format was not considered appropriate ...". Instead, the limit was chosen as:

1. mass emissions per unit volume of gas, e.g., gr/dscf (allows direct comparison with Method 5 test results), and
2. opacity (to aid in enforcement and as an indicator of proper operation and maintenance).

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Cade, Director

P. O. Box 19506, Springfield, IL 62794-9506

MEMORANDUM

DATE: September 26, 1995

TO: Gene Reineke, Howard Peters, Mike Lawrence, Al Grosboll

FROM: Mary A. Gade, Director

SUBJECT: Briefing regarding a pending Bureau of Air permit application for a production increase at Granite City Division (GCD) of National Steel Corporation in Granite City, Illinois.

This memo is to alert you of the possibility that GCD may contact you regarding the above application and to summarize the current status of the application.

GCD has an application pending for a 61% increase in iron production and 56% increase in steel production. The company is located in Madison County which is a moderate non-attainment area for PM-10. GCD is attempting to "net out" of stringent new source review (NSR) requirements for the emissions of particulate matter less than or equal to 10 micrometers in size (PM-10). GCD proposes to net out of NSR for PM-10 by relying on both previously implemented enhanced control measures on roadways and additional controls at the basic oxygen furnace shop to generate creditable emission reductions. These emission credits would then be used to offset PM-10 emission increases associated with the proposed production increase. Determining the amount of emission credits available is a complicated and time consuming process. The Agency hopes to make a final determination within two weeks, however, more time may be required. Due to the size and nature of the requested increase, the USEPA is expected to scrutinize the steps the Agency takes in permitting this project. If GCD cannot net out of NSR, the project will probably not go forward.

In order to accommodate GCD while resolution of the available emission credit issue is pursued, an interim permit was issued on September 21, 1995, allowing a smaller increase in production (i.e., 19%).

GCD has requested an expedited review of the application and issuance of a permit. They have also requested that a public hearing be held for the project. A notice time of at least 45 days is necessary for any such hearing. You may receive some external pressure to move the process along. We intend to do everything we can in order to accommodate GCD's request, however it is possible that the Agency may not be able to permit the full production increase requested if GCD cannot net out of NSR requirements.

If you have any questions regarding this project, please contact Bharat Mathur, Chief, Bureau of Air at 785-4140.

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

GRANITE CITY STEEL

FAX

Date: 6/8/95

Number of pages including cover sheet: 4

To: Bharat Mathur

Phone:

Fax phone:

CC:

From: Larry Siebenberger

Phone: 618-451-3391

Fax phone: (618) 451-4020

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Production increase PM_{10} issues

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

June 8, 1995

Bharat,

I called to relay to you our position, as contained in the attached handout, on the PM10 credits and attainment issues discussed in a meeting with the permit staff on May 25, 1995. The following is a summary as a result of the meeting, of the issues as I see them.

- PM10 credits necessary for the production increase are based on the reductions agreed to by GCD prior to the PM10, SIP being promulgated and are not in conflict with Rule 203.208(c)(4).

- The fugitive emission baseline on which the credits are based will reflect the control efficiency in place at the time GCD agreed to further reductions prior to the PM10 SIP.

- The potential PM10 emissions for the proposed production increase will be at or below those used in the attainment demonstration.

- The production increase will not cause an attainment problem in the "real world". Even with the historical increase in production at GCD, ambient monitors have indicated improved air quality and now reflect attainment. GCD is committed to maintaining attainment and will continue to work closely with the IEPA toward that end.

My impression is without the PM10 credits as claimed by GCD any production increase is in jeopardy. As you know the production increase as proposed is necessary for our long-term survival. I believe our positions are environmentally sound and legally justified, and with the Agency's continued cooperation this effort can be successfully concluded. Please let me know if we need to meet.

Sincerely,

BHARAT

GRANITE CITY PRODUCTION INCREASE PERMIT

There seems to be two main issues regarding the PM10 emissions in the proposed production increase permit.

- Amount of PM10 credit - rule 203.208(c)(4) creditable reductions in actual emissions must not have been previously relied on for demonstrating attainment.

- Resulting potential PM10 emission rates as compared to the PM10 attainment SIP. A 25% increase in production was built into the SIP and the proposed production increase is 61% at the Blast Furnaces and 56% at the BOF. It has been determined that a 25% increase is not adequate to maintain GCDs competitiveness.

Amount of PM10 credit

In 1991 the company participated in discussions with the IEPA prior to the promulgation of the regulations contained in the PM10 attainment SIP.

During the discussions the company agreed to additional road paving and increase unpaved road treatment over that required by an earlier consent decree in order to provide credit for a proposed increase in production. The production increase was then built into the attainment SIP. The PM10 credits in the permit application were developed from the same emission base, (1988 MRI study which included the emission reduction as a result of the consent decree) used in the SIP development. Therefore, the company believes all of these reductions, in actual emission from the same emission base, agreed to previously in conjunction with a production increase and prior to being relied on in a promulgated and approved SIP are creditable so long as the potential to emit from the production increase is consistent with the attainment demonstration.

Potential PM10 Emission rates in the Permit Application and PM10 attainment SIP

- The potential PM10 emissions as a result of the proposed production increase are not higher than those relied on in the PM10 SIP attainment demonstration.

  - The process and fuel combustion PM10 emissions will not be higher than those used in the attainment demonstration.

- The fugitive PM10 emissions will not be higher than those used in the attainment demonstration. Additional road paving (coke plant) and increased treatment of unpaved roads (3 times vs 2 times per month) are included.

In summary, the fugitive reductions contained in the PM10 attainment demonstration were not relied upon solely to bring the Granite City area into attainment at existing production levels. Rather, the reductions were relied upon to demonstrate attainment at an increased production rate. The potential emissions from the recently proposed production increase are consistent with the emission assumptions contained in the attainment demonstration. The 711-ton reduction identified in the Granite City application, therefore, were not relied upon to demonstrate attainment at existing production levels and is available for netting purposes.

xcrr ta

R008674

FACSIMILE MESSAGE

DATE: 6/30/95

TIME: _____

Please Deliver The Following Pages To:

NAME: Jim Ross

COMPANY: IEPA

CITY/STATE: _____

FAX NUMBER: _____

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JUL 05 1995
IEPA - DAPC - SPFLD

From:

NAME: Larry Siebenberger

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040

Our FAX Number: (618) 451-4020

We are transmitting 3 pages (including this cover letter)

If transmission is not complete, call: _____
Tele: (618-451-3457)

Subject: Production Increase Permit

Comments: Jim,
My response to your questions on the permit application.
Larry

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R008675

06/26/95

CONCERNS WITH GCD APPLICATION

1. Did not use AP-42 factor (0.5) for BOF roof monitor and did not justify use of factor they used (0.12).

2. Appear to not have used AP-42 factor for lead (i.e., [illegible] 0.5). Need to either use or justify why did not use for BOF.

3. Need estimate of BOF-ESP control efficiency so can estimate lead emissions.

4. Netting exercise shows PM and PM-10 emissions from BOF hopper baghouse at 0.0. This is inaccurate and needs corrected.

5. Need to document no increase in emissions and operations at:
   - Coke Plant,
   - Coke By-Products plant,
   - Hot Rolling Mill,
   - Cold Rolling Mill, and
   - any other operation not addressed in netting exercise.

6. Need updated flow diagram for BOF shop showing all processes and controls and their relationships.

7. An explanation of why some emission units are grouped together in the netting exercise, e.g., hot metal reladling-xfer pits and desulf. station (inside BOF shop).

8. Need to address increase in emissions from Blast Furnace Gas Flares associated with the production increase.

9. For fuel oil usage and related emissions, need to provide the different type and amount of each oil used since different emission factors apply.

G-CONCERR.DOC

R008676

From Jim Ross 6/30/95

06/30/95

ADDITIONAL INFORMATION NEEDED FOR GCD PRODUCTION INCREASE APPLICATION

1a. Provide historic actual (i.e., annual avg. of selected representative 24 month period) usage of:

- natural gas (mmft3/year),
- blast furnace gas (mmft3/year),
- fuel oil #6 (gal/yr), and
- waste oil (gal/yr)

Provided in Appendix B - corrected table will be included.

b. Provide narrative of how the use of fuels is changing as a result of the proposed production increase (e.g., BFG replacing NG at some units, NG use is not increasing because ....., Reheat furnaces are not included in netting exercise because ....., etc.). ⇒ Will include in application.

2. Throughout netting exercise, where AP-42, AIRS, or factors derived from test data included in the application are not used, GCD needs to justify the use of the factors used. If haven't already done. ⇒ Will include in application.

3. Need updated process flow diagram for the Continuous Casters and related operations (e.g., argon stirring and material handling). → Will include in application.

~~C CONCER DOC~~

Illinois Environmental Protection Agency · 2009 Mall Street, Collinsville, Illinois 62234

M E M O R A N D U M

DATE: April 5, 1995

TO: Jim Ross ID 119 813 AAI

FROM: Jeff Benbenek

SUBJECT: NATIONAL STEEL CORP. - Production Increase Permit Application (#95010001)

Although I realize there will be an internal Agency meeting on this subject in the near future, I wanted to go ahead and make comments on one aspect of this application.

In it, NSC is taking a large amount of credit in their PM-10 netting analyses for reductions in PM-10 emissions from unpaved and paved roadways. They claim that their "current" emissions from unpaved roadways are 771.06 tons/year, and after proposed and contemporaneous reductions, the emissions will be 59.32 tons/year. The basis for the uncontrolled emissions was the Agency's PM-10 inventory of 1990. That inventory was used to develop the PM-10 Regulations. These Regulations require that the roadways in the Granite City area at integrated iron and steel manufacturing plants comply with an opacity limit of 5% [35 IAC 212.361(e)(1)]. Compliance with this limit was required by May 11, 1993. In its demonstration, submitted to the USEPA, as I understand it, the Agency indicated that compliance with this limit meant that the roadways would be controlled to a 95% efficiency.

In essence, NSC is attempting to use reductions that are already required by the Regulations, as an offset in their netting analyses.

JJB:pbo/2674A

cc: BOA - Collinsville

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R008678

GRANITE CITY STEEL

FAX

Date: 5/16/95

Number of pages including cover sheet: 3

To:
Jim Ross

Phone:

Fax phone:

CC:

From:
Harry Siebenberger

Phone:

Fax phone: (618) 451-4020

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

BP, Credit memo

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GRANITE CITY PRODUCTION INCREASE PERMIT

There seems to be two main issues regarding the PM10 emissions in the proposed production increase permit.

- Amount of PM10 credit - rule 203.208(c)(4) creditable reductions in actual emissions must not have been previously relied on for demonstrating attainment.

- Resulting potential PM10 emission rates as compared to the PM10 attainment SIP. A 25% increase in production was built into the SIP and the proposed production increase is 61% at the Blast Furnaces and 56% at the BOF. It has been determined that a 25% increase is not adequate to maintain GCDs competitiveness.

Amount of PM10 credit

- In 1991 the company participated in discussions with the IEPA prior to the promulgation of the regulations contained in the PM10 attainment SIP.

  During the discussions the company agreed to additional road paving and increase unpaved road treatment over that required by an earlier consent decree in order to provide credit for a proposed increase in production. The production increase was then built into the attainment SIP. The PM10 credits in the permit application were developed from the same emission base, (1988 MRI study which included the emission reduction as a result of the consent decree) used in the SIP development. Therefore, the company believes all of these reductions, in actual emission from the same emission base, agreed to previously in conjunction with a production increase and prior to being relied on in a promulgated and approved SIP are creditable so long as the potential to emit from the production increase is consistent with the attainment demonstration.

Potential PM10 Emission rates in the Permit Application and PM10 attainment SIP

- The potential PM10 emissions as a result of the proposed production increase are not higher than those relied on in the PM10 SIP attainment demonstration.

  - The process and fuel combustion PM10 emissions will not be higher than those used in the attainment demonstration.

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5/18/95

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The fugitive PM10 emissions will not be higher than those used in the attainment demonstration. Additional road paving (coke plant) and increased treatment of unpaved roads (3 times vs 2 times per month) are included.

In summary, the fugitive reductions contained in the PM10 attainment demonstration were not relied upon solely to bring the Granite City area into attainment at existing production levels. Rather, the reductions were relied upon to demonstrate attainment at an increased production rate. The potential emissions from the recently proposed production increase are consistent with the emission assumptions contained in the attainment demonstration. The 711-ton reduction identified in the Granite City application, therefore, were not relied upon to demonstrate attainment at existing production levels and is available for netting purposes.

GCPIP.LB

[illegible]

[illegible] relied on getting [illegible] rate of 11.27 after expansion, therefore this decrease was relied upon.

R008681

National Steel

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

August 9, 1995

CERTIFIED MAIL NO. Z 351 483 745
RETURN RECEIPT REQUESTED

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AUG 11 1995
[illegible]

Mr. Bharat Mathur
Bureau of Air
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Bharat:

The attached is Granite City Division's response to the IEPA list of proposed PM_{10} reductions and rule changes as presented in our July 24, 1995 meeting. In summary Granite City Division has implemented or has committed to implement, in conjunction with the proposed production increase, the following PM_{10} reduction projects beyond those presently required:

- Road spraying increased from 2 to 3 times per month.
- Additional road paving (approx.$4.0 million).
- Increased road sweeping from every other day to every day for many Granite City Division roads.
- Purchase, assuming a successful trial, an Enviro Whirl road sweeper (approx.$200,000)
- Install a fourth ESP at the BOF to assure future compliance at increased production levels (approx. $7.0 million).

In 1991 prior to the promulgation of the PM_{10} SIP, Granite City Division agreed to additional road paving (approx. $1.8 million) and increased road spraying (from 1 to 2 times per month) over that required by an earlier consent decree in order to provide credit for a proposed production increase.

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Granite City Division has provided more than enough PM_{10} reductions (credits) to offset any potential increase in emissions as a result of the proposed production increase and maintain attainment as per the PM_{10} SIP. Also as discussed Granite City Division is committed to maintaining attainment at all monitors it impacts and will continue to work closely with the IEPA toward that end.

Should you have any questions regarding this response please contact Larry Siebenberger (618) 451-3391.

Very truly yours,

Fred Steinbuchler (FS)

Fred Steinbuchler
Director - Engineering Technology

Additional Control Measures

1. Granite City Division is increasing the commitment for road spraying from 2 times per month to 3 times per month. The control efficiency increased from 95% to 98%. Granite City Division would be concerned about increasing the road spraying commitment further and claiming a control efficiency greater than 98%. Granite City Division will continue to treat the roads as needed.

2a. Granite City Division initiated a 2 month trial use period of an Enviro-Whirl street sweeper on August 7, 1995. The street sweeper will be purchased (approx. cost $200,000) if trial use adequately proves its effectiveness and durability.

2b. Granite City Division does not believe it is cost effective or particularly beneficial to construct ditches at the edge of paved roads. The ditches would require major modification to the plant sewer system in order to properly drain or they would just fill back up. Vacuum sweeping is the predominant method used to clean paved roads at Granite City Division. The proposed road program increases the frequency of road cleaning from every other day to daily on many of the paved roads. Thus, the added benefit of ditches would be marginal at best..

2c. Granite City Division believes its current bag system used to handle dust collected at the BOF ESP provides good dust control. The trial of the new Enviro-Whirl sweeper will include minimizing any track out of BOF dust from the ESP area.

3. The previous partial enclosure at the dekishing station provided no environmental benefit. The greatest potential for particulate generation is during the clean up of the material which has been removed from the mouth of the torpedo cars. Granite City Division has developed a procedure which requires the wetting of this material prior to pick up and hauling. Granite City Division will institute more frequent training of the appropriate personnel as to the use of this procedure.

4. The installation of canopy hoods in the BOF roof is not necessary, particularly in light of the addition of a 4th ESP (approx. cost $7 million) and the present controls at the BOF including secondary emission hoods, doghouse enclosures (vessel enclosure doors), lance hole spray systems, tapside fume suppression system, and baghouse control of reladling, desulfurization, slag skimming and material handling.

5. During the month of July, 1995 one elevated opacity event was reported by the opacity monitor. A long delay occurred prior to and steam injection was interrupted during the time of the elevated reading reported resulting in an upset condition. Granite City Division believes it has the procedures and equipment necessary to control emissions to permitted limits.

6. Granite City Division is in the process of installing boots, as required, to minimize water infiltration into rapper and TR set areas of the ESP. Granite City Division considers this to be a more cost effective solution to potential water infiltration problems.

7. The approx. cost of installing a new quench tower at the east end of the coke ovens would be approx. $2.2 million. Based on a 3 TPY PM_{10} emission reduction as assumed by the IEPA this would not be a cost effective control project.

8. Granite City Division and the IEPA successfully developed and obtained Federal approval of a FESOP which assures attainment with the SO_2 ambient air quality standards while using coke oven gas as presently generated. The installation of coke oven gas desulfurization would cost approx. $35 - 40 million and is not considered a cost effective method for PM_{10} reductions.

9. International Mill Service and Standard LaForge are independent companies and not owned or operated by National Steel. The PM_{10} road emissions, at a control efficiency of 95% as assumed by the PM_{10} SIP for both, assuming continuous operation, is approx. 3.3 TPY. Based on these control efficiencies an enhanced fugitive control program would result in minimal additional PM_{10} reductions.

10. The National Steel Lines Trucking facility located between 20th & 21st Streets is basically a parking lot used by the trucks while they receive orders for loads. The trucks move in out of the lot at extremely low speed and as such minimal PM_{10} emissions are generated. Granite City Division will, however, agree to treat the lot quarterly.

Rule Changes

1. Granite City Division will agree to a 20% (3 min. avg.) opacity standard at the BOF roof monitor provided adequate PM_{10} credit is recognized.

2. As a result of the recent addition of the 4th ESP to the BOF ESP control system Granite City Division has no data to determine average flowrates or to evaluate a gain loading limitation. Granite City Division believes a 68.5 lb./hr. stack limit (as used in the PM_{10} attainment model) and a roof monitor opacity limit are adequate restrictions on the BOF to maintain attainment.

3 Based on the last BOF compliance stack test Granite City Division believes the proposed 20% opacity limit is more restrictive than the 68.5 lb./hr. limit used to demonstrate attainment and is, therefore, not necessary.

SPRTRUK.LS

R0008685

OPTION		Annualize	Adj ESP	Up Credit	Trim ESP	Trim ESP	Extra Dust	Trim Steel	Up Margin
			equiv 0.16		to 0.14 lb/t	to 0.15 lb/t	23 tons/		to 95%
	BASE		Annualize			Extra Dust			Trim ESP
						4 tons			to 0.15lb/t
BOF ESP									
Baseline(lb/cycle)	33.42	33.42	33.42	33.42	33.42	33.42	33.42	33.42	35.27
Future(lb/hour)	68.5	68.5	63.9	63.9	55.9	59.9	63.9	63.9	59.9
BOF Roof(lb/ton)									
Baseline	0.33	0.33	0.33	0.335	0.33	0.33	0.33	0.33	0.33
Future	0.10	0.10	0.10	0.09	0.10	0.10	0.10	0.10	0.10
Future Production									
Max Ton Steel/Day	10,300	10,300	10,300	10,300	10,300	10,300	10,300	10,300	10,300
Ave Ton Steel/Day	10,300	9,600	9,600	9,600	9,600	9,600	9,600	9,300	9,600
Ton Steel/Year	3,759,500	3,504,000	3,504,000	3,504,000	3,504,000	3,504,000	3,504,000	3,394,500	3,504,000
Percent Increase	55.8%	45.2%	45.2%	45.2%	45.2%	45.2%	45.2%	40.7%	45.2%
PM10 Increase(t/y)									
BOF ESP	128.8	128.8	108.6	108.6	73.6	91.1	108.6	108.6	81.6
Baghouses	81.0	65.6	65.6	65.6	65.6	65.6	65.6	59.0	65.6
BF Gas	92.8	75.2	75.2	75.2	75.2	75.2	75.2	67.6	75.2
Fuel Oil	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Misc Increases	30.5	24.7	24.7	24.7	24.7	24.7	24.7	22.2	24.7
Subtotal	334.8	296.0	275.8	275.8	240.7	258.3	275.8	259.2	248.8
PM10 Decrease(t/y)									
BOF Roof	210.2	223.0	223.0	246.6	223.0	223.0	223.0	228.5	223.0
Fugitive Dust(est.)	32.0	32.0	32.0	32.0	32.0	36.0	55.0	32.0	32.0
Subtotal	242.2	255.0	255.0	278.6	255.0	259.0	278.0	260.5	255.0
Net PM10(ton/yr)	92.5	41.0	20.8	-2.8	-14.3	-0.8	-2.2	-1.3	-6.2

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R0008686

TABLE 3-4
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - PM-10

Projected Emissions Based On: Blast Furnace @ 9,100 NTPD
BOF @ 10,300 NTPD

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Line #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy	COMMENTS
1	0004	01	"A" Blast Furnace Stoves - BFG	2.9	lb/MMcf	Included in line 39	MMcf	-	Included in line 39	-	-	-	-
2	0009	01	"B" Blast Furnace Stoves - BFG	2.9	lb/MMcf	Included in line 39	MMcf	-	Included in line 39	-	-	-	-
3	0008	01	Blast Furnace Gas Flare - BFG	2.9	lb/MMcf	Included in line 39	MMcf	-	Included in line 39	-	-	-	-
4	0041	01	Boiler House 1 (Blrs 1-10) - BFG	2.9	lb/MMcf	Included in line 39	MMcf	-	Included in line 39	-	-	-	-
5	0041	91	Boiler House 1 (Blrs 1-10) - NG	5.1	lb/MMcf	Included in line 38	MMcf	-	Included in line 38	-	-	-	-
6	0044	01	Boiler #11 - BFG	2.9	lb/MMcf	Included in line 39	MMcf	-	Included in line 39	-	-	-	-
7	0044	91	Boiler #11 - NG	5.1	lb/MMcf	Included in line 38	MMcf	-	Included in line 38	-	-	-	-
8	0044	92	Boiler #11 - Fuel Oil	9.72	lb/Mgal	Included in line 40	Mgal	-	Included in line 40	-	-	-	-
9	0048	01	Boiler #12 - BFG	2.9	lb/MMcf	Included in line 39	MMcf	-	Included in line 39	-	-	-	-
10	0048	91	Boiler #12 - NG	5.1	lb/MMcf	Included in line 38	MMcf	-	Included in line 38	-	-	-	-
11	0048	92	Boiler #12 - Fuel Oil	9.72	lb/Mgal	Included in line 48	Mgal	-	Included in line 48	-	-	-	-
12	0033	01	BOF 2 Vessels	0.149	lb/ton proc.	2,413,406	tons proc.	179.80	3,759,500	ton proc.	300.03	28.23	
13	0038	01	BOF Preheaters/Dryers - NG	5.1	lb/MMcf	Included in line 38	MMcf	-	Included in line 38	-	-	-	-
14	0005 & 0010	01	"A" & "B" Blast Furnace - Uncap. Fugitives	0.0155	lb/ton proc.	2,059,557	tons proc.	15.96	3,321,500	tons proc.	25.74	9.78	-
15	0006 & 0011	01	"A" & "B" Blast Furnace - Charging	0.0024	lb/ton proc.	2,059,557	tons proc.	2.47	3,321,500	tons proc.	3.99	1.51	-
16	0007 & 0012	01	"A" & "B" Blast Furnace - Baghouse Stack	0.0703	lb/ton proc.	2,059,557	tons proc.	72.35	3,321,500	tons proc.	116.59	44.24	
17	0034	01	BOF Roof Monitor	0.120	lb/ton proc.	2,413,406	tons proc.	144.80	3,759,500	tons proc.	225.57	80.77	
18	0037	01	Flux Conv. & Xfer Pts., Bin Floor - BOF	0.039	lb/ton proc.	2,413,406	tons proc.	1.95	3,759,500	tons proc.	3.65	1.70	
19	0040	01	Hot Metal Chging Ladle Slag Skimmer	0.0050	lb/ton proc.	2,059,557	tons proc.	5.17	3,321,500	tons proc.	8.30	3.13	

116.68

R0008687

TABLE 3-4
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - PM-10

Projected Emissions Based On: Blast Furnance @ 5,...0 NTPD
BOF @ 10,300 NTPD

Line #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy	COMMENTS
20	0070 & 0120	01	Caster Mold - Casters #1 & #2	0.006	lb/ton prod.	2,413,406	tons prod.	7.24	3,759,500	ton prod.	11.28	(X) 4.04	
21	0071 & 0119	01	Cont. Casters #1 & #2 - Spray Chamber	0.00852	lb/ton proc.	2,413,406	tons prod.	2.06	3,759,500	ton prod.	3.20	1.15	
22	0071 & 0119	01	Continuous Casters #1 & #2 - NG	5.1	lb/MMcf	Included in line 38	MMcf	-	Included in line 38	-	-	-	
23	0072 & 0118	01	Slab Cutoff - Casters #1 & #2	0.0071	lb/ton proc.	2,413,406	tons prod.	8.57	3,759,500	ton prod.	13.35	4.78	
	73	1	Slab Ripping - Casters #1 & #2	0.00722	lb/ton proc.	2,413,406	tons prod.	8.71	3,759,500	ton prod.	13.57	(X) 4.86	
25	0103, 0104 & 0121	01	Argon Stirring #1 & #2, Material Handling Tripper	0.00715	lb/ton proc.	2,413,406	tons prod.	8.63	3,759,500	ton prod.	13.44 18.60	4.81 7.97	
26	0105 & 0106	01	Deslagging Station & Material HS	0.00355	lb/ton proc.	2,413,406	tons prod.	4.28	3,759,500	ton prod.	6.67 8.23	2.39 3.95	
27			BOF Hopper Baghouse	0.00032		2,413,406	tons proc.	0.21 0.39	3,759,500	tons proc.	0.60 0.75	0.21 0.36	
28	0107 & 0035	01	Desulf. Station (inside BOF shop) & Xfer Pit	0.03721	lb/ton proc.	2,059,557	tons prod.	38.32	3,321,500	ton prod.	59.30 73.20	21.98 35.38	Com. w/0035
29	0113	01	Blast Furnace Slag Pits	0.00417	lb/ton proc.	2,059,557	tons slag	4.29	3,321,500	ton prod.	6.93	2.63	
30	9003	01	Iron Pellet Screen	0.00279	lb/ton proc.	2,059,557	tons proc.	2.87	3,321,500	tons proc.	4.63	1.76	
31		01	Iron Spout Baghouse	0.01657	lb/ton proc.	2,059,557	tons proc.	17.06	3,321,500	tons proc.	27.5 38.80	10.44 15.74	
32			Road Fugitive Emissions					31.52			28.50	(3.02)	
33			Material Handling					1.47			2.94	1.47	
34			Unpaved Parking Lots					-			-	-	
35			Paved Parking Lots					-			-	-	
36			Natural Gas	5.1	lb/MMcf	1,145	MMcf	2.92	1,145	-	2.92	0.00	
37			Blast Furance Gas	2.9	lb/MMcf	121,038	MMcf	175.51	185,030	-	268.28	92.79	
38			Fuel Oil	9.72	lb/Mgal	16	Mgal	0.08	365	-	1.77	1.70	
	TOTALS:							734.79			1,197.63	552.84	
			Contemporaneous Changes									552.20	
			Net Change									*89.36*	

153.5
116.58
320.31

NETTING EXERCISE

Current PM-10 situation per options proposed by GCD 8/3/95

NSR Significant Increase = 15 tons/yr (triggers NSR - LAER)

FUTURE POTENTIAL from units/activities whose emissions are affected by proposed project = tons/yr

HISTORIC ACTUAL from units/activities whose emissions are affected by proposed project = tons/yr

POTENTIAL INCREASE as a result of proposed project = FUTURE POTENTIAL - HISTORIC ACTUAL

POTENTIAL INCREASE = 320 tons/yr

CONTEMPORANEOUS INCREASES = 19 tons/yr

CONTEMPORANEOUS DECREASES = 29 tons/yr

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Netting Equation:

CHANGE as a result of proposed project = (POTENTIAL INCREASE + CONTEMPORANEOUS INCREASES) - (CONTEMPORANEOUS DECREASES)

CHANGE = (320 + 19) - (29) = **310 tons/yr increase**

Of the Contemporaneous Decreases, 3 tons is from Fugitive Dust Control Plan (roads and material handling) and 26 tons is from shutdown of ingot teeming, blooming mill and batch annealing.

Situation as per revised application dated July 20, 1995.

Significant Increase = 15 tons/yr (triggers NSR - LAER)

Future Potential = 1,198 tons/yr

Historic Actual = 735 tons/yr

Potential Increase = Future Potential - Historic Actual

Potential Increase = 463 tons/yr

Contemporaneous Increases = 19 tons/yr

Contemporaneous Decreases = 570 tons/yr

Netting Equation:

Change = (Potential Increase + Contemporaneous Increases) - (Contemporaneous Decreases)

Change = (463 + 19) - (570) = - 88 tons/yr

Of the Contemporaneous Decreases, 545 tons is from Fugitive Dust Control Plan (roads and material handling)

WAYS TO MAKE NETTING EXERCISE WORK

netting equation:

change = (potential increase + contemporaneous increases)
- (contemporaneous decreases)

where:
potential increase = future potential - historic actual

Reduce potential increase by 1 & 2.
Reduce change by 3 & 4.

1. lower future potential
   a. request lower production increase.
   b. request lower allowable (e.g., request limits of maximum actual instead of full allowable.
   c. add controls.

2. raise historic actual
   a. assume lower baghouse efficiencies, but still in compliance.
   b. In general, assume higher historic emissions wherever possible.

3. reduce contemporaneous increases

   a. ~~find way to reduce increase from new caster (site specific testing)~~.

4. raise contemporaneous decreases

   a. give more credit for fugitive (roadway) reductions.
   b. give credit for BOF roof monitor allowable going from opacity of 30% to 20% (does PWR rule apply to monitor?).
   c. obtain credit from reduction resulting from new module on LMF baghouse-2.

G-NETT.DOC

09/29/95

ADDITIONAL INFORMATION NEEDED FOR GCD PRODUCTION INCREASE APPLICATION

1. Data on historic capture system flow rates for each BOF operation (i.e., flow rate during charge, during refine, during tap). Also data on proposed flow rates for each.

2. Description of current BOF capture system. Include number of fans, location of fans, fan size, location of flow meters, description of meters, etc.

3. Description of fume suppression system on BOF tapping. Can fume suppression be used elsewhere (e.g., charging, hot metal transfer, blast furnace tapping and runners)?

4. List of improvements to BOF capture and control made over the last 5 years.

5. Provide acceptable production increase in tons/yr if based on an annual limit.

6. Provide data on sulfur content of coals used - max and avg.

G-CONCER.DOC

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Illinois EPA FOIA Exemption Reference Sheet

SID: 23106
R008692

Agency ID: 170000125683 Media File Type AIR
Bureau ID: 119813AAI
Site Name: US Steel Granite City
Site Address1: 1951 State St
Site Address2: Granite City Div
Site City: Granite City State: IL Zip: 62040-

This record has been determined to be partially or wholly exempt from public disclosure

Exemption Type:

Redaction

Exempt Doc #: 122 **Document Date:** 10/20/1995 **Staff:** JRM

Document Description: MEMO: BEBBENEK TO ROSS

Category ID: 03L **Category Description:** AIR PERMIT - OPERATING **Exempt Type:** Redaction

Permit ID: **Date of Determination:** 8/23/2013

R008693

RECEIVED
OCT 2 3 1995
IEPA-DAPC-SPFLD

M E M O R A N D U M

DATE: October 20, 1995

TO: Jim Ross

FROM: Jeff Benbenek

I.D. 119 813 AAI

SUBJECT: National Steel Corporation - BOF Stack Baseline Emissions

Based on the discussions during the meeting with representatives of National Steel on October 17, it [redacted] that they want to average the results of all stack tests submitted to the Agency since July, 1986 and utilize that figure as the baseline actual for the precipitator stack.

First, [redacted]

Even if it is appropriate to use test data since 1986, the 1989 test should not be considered. The Agency was very concerned about the level of emissions occurring from the BOF stack based on their monthly opacity monitor reports in 1988. NSC was in the process of refurbishing the BOF control system in 1989 and did not complete the project until 1990 (refer to the attachments to this memo). The 1989 test actually supported the conclusion that the facility was having compliance problems. At an average particulate emission rate of 44.5 lbs/hr. from the stack, the tests did not show compliance with the allowable rate of 50.1 lbs/cycle per 212.446(a) when uncaptured particulate emissions cycle from charging and tapping are added (approximately 9.0 lbs/cycle based on the method of calculation utilized by the Agency at that time). The test report was submitted in an operating permit renewal application submitted on May 1, 1989. That application was subsequently denied by the Agency. Only after the refurbishment program was completed and the BOF ESP stack was tested in July, 1990, and an enforcement action referred to the AGO was resolved with a settlement, was the BOF permit granted in 1992.

[redacted]

JJb.jlr/2887A

cc: BOA - Collinsville

EX. DIVISION OF RECORDS MANAGEMENT
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State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-4343

August 30, 1994

Michael Pelan
Woodward-Clyde Consultants
10975 El Monte
Suite 100
Overland Park, Kansas 66211

Dear Mr. Pelan:

Enclosed please find three diskettes (5 1/4") containing the files you requested. Please return the diskettes after you have copied the data. The diskettes contain the following data:

a) five meteorological data files (for 1982-86) that use St. Louis for surface data and Salem for upper air data

b) three receptor grid files of varying resolution and coverage. These grids were used for SIP related modeling.

It is our recommendation that the PSD modeling should use the above years (1982-1986) of meteorological data for consistency with the SIP modeling.

I have enclosed a cross reference listing of our source I.D. numbers with corresponding emission unit names for your convenience. If you have any questions regarding PSD inventory or sources please contact Mr. Chris Romaine of our Permits Section at (217)785-1715. If you have further needs or questions, please feel free to contact me at (217)524-4788.

Sincerely,

Michael T. Reischel
Air Quality Planning Section
Bureau of Air

Enclosure
cc: Rob Kaleel
Chris Romaine

PELAN.MRE

24-Aug-94

CURRENT SO2 EMISSIONS UNITS FOR GRANITE CITY STEEL

I.D.	SOURCE DESCRIPTION
* 17000	Blast Furnace C.H. Baghouse
* 17005	Blast Furnace I.S. Baghouse
17010	B Blast Furnace Stoves
17020	Boiler House 1; 1-7
17030	A Blast Furnace Stoves
17040	Boiler 11 Blast Furnace
17050	Boiler 12 Blast Furnace
17060	Boiler House 1; 8-10
17070	Steam Boilers 1
17080	Steam Boilers 2
17090	Steam Boilers 3
17100	Steam Boilers 4
17110	Battery A underfiring
17120	Battery B underfiring
17130	Slab Furnace No. 1
17140	Slab Furnace No. 2
17150	Slab Furnace No. 3
17170-080	No. 6 Galvanizing Furnace
17180-240	Galvanizing Line 7A Furnace
17260	By-Product Flare
17340	Slab Furnace No. 4 (Reheat)
30010-020	No. 6 Galvanizing Pot
30030-160	Ladle Drying Preheaters
30170-190	Oven Charging - A Battery
30200-220	Oven Charging - B Battery

```
CO STARTING
CO TITLEONE GRANITE CITY STEEL SO2 SOURCES: GCSSCRS0.INP: 17AUG94
CO FINISHED
SO STARTING

** Source Location Cards:
**           SRCID SRCTYP        XS           YS           ZS

SO LOCATION 17000 POINT    749675.0000  4286481.0000        .0000
SO LOCATION 17005 POINT    749780.0000  4286540.0000        .0000
SO LOCATION 17010 POINT    749730.0000  4286485.0000        .0000
SO LOCATION 17020 POINT    749815.0000  4286590.0000        .0000
SO LOCATION 17030 POINT    749880.0000  4286560.0000        .0000
SO LOCATION 17040 POINT    749945.0000  4286640.0000        .0000
SO LOCATION 17050 POINT    749945.0000  4286640.0000        .0000
SO LOCATION 17060 POINT    749760.0000  4286660.0000        .0000
SO LOCATION 17070 POINT    748015.0000  4286860.0000        .0000
SO LOCATION 17080 POINT    748000.0000  4286810.0000        .0000
SO LOCATION 17090 POINT    748010.0000  4286800.0000        .0000
SO LOCATION 17100 POINT    748000.0000  4286790.0000        .0000
SO LOCATION 17110 POINT    750170.0000  4286730.0000        .0000
SO LOCATION 17120 POINT    750180.0000  4286730.0000        .0000
SO LOCATION 17130 POINT    747740.0000  4286570.0000        .0000
SO LOCATION 17140 POINT    747770.0000  4286570.0000        .0000
SO LOCATION 17150 POINT    747750.0000  4286550.0000        .0000
SO LOCATION 17170 POINT    748820.0000  4287010.0000        .0000
SO LOCATION 17180 POINT    748820.0000  4287010.0000        .0000
SO LOCATION 17190 POINT    748410.0000  4286810.0000        .0000
SO LOCATION 17200 POINT    748420.0000  4286810.0000        .0000
SO LOCATION 17210 POINT    748440.0000  4286800.0000        .0000
SO LOCATION 17220 POINT    748460.0000  4286780.0000        .0000
SO LOCATION 17230 POINT    748440.0000  4286800.0000        .0000
SO LOCATION 17240 POINT    748460.0000  4286780.0000        .0000
SO LOCATION 17260 POINT    750050.0000  4286770.0000        .0000
SO LOCATION 17340 POINT    747680.0000  4286530.0000        .0000
SO LOCATION 30010 VOLUME   748940.0000  4287100.0000        .0000
SO LOCATION 30020 VOLUME   748951.0000  4287109.0000        .0000
SO LOCATION 30030 VOLUME   748430.0000  4286320.0000        .0000
SO LOCATION 30040 VOLUME   748435.0000  4286324.0000        .0000
SO LOCATION 30050 VOLUME   748440.0000  4286328.0000        .0000
SO LOCATION 30060 VOLUME   748460.0000  4286330.0000        .0000
SO LOCATION 30070 VOLUME   748468.0000  4286336.0000        .0000
SO LOCATION 30080 VOLUME   748475.0000  4286343.0000        .0000
SO LOCATION 30090 VOLUME   748483.0000  4286349.0000        .0000
SO LOCATION 30100 VOLUME   748440.0000  4286300.0000        .0000
SO LOCATION 30110 VOLUME   748445.0000  4286304.0000        .0000
SO LOCATION 30120 VOLUME   748450.0000  4286308.0000        .0000
SO LOCATION 30130 VOLUME   748460.0000  4286325.0000        .0000
SO LOCATION 30140 VOLUME   748468.0000  4286331.0000        .0000
SO LOCATION 30150 VOLUME   748475.0000  4286338.0000        .0000
SO LOCATION 30160 VOLUME   748483.0000  4286344.0000        .0000
SO LOCATION 30170 VOLUME   750100.0000  4286760.0000        .0000
SO LOCATION 30180 VOLUME   750139.0000  4286777.0000        .0000
SO LOCATION 30190 VOLUME   750160.0000  4286794.0000        .0000
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SO LOCATION 30200 VOLUME   750209.0000  4286823.0000          .0000
SO LOCATION 30210 VOLUME   750239.0000  4286840.0000          .0000
SO LOCATION 30220 VOLUME   750286.0000  4286857.0000          .0000
SO LOCATION 40001 VOLUME   749760.0000  4286573.0000          .0000
SO LOCATION 40002 VOLUME   749764.0000  4286575.0000          .0000
SO LOCATION 40003 VOLUME   749767.0000  4286578.0000          .0000
SO LOCATION 40004 VOLUME   749771.0000  4286581.0000          .0000
SO LOCATION 40005 VOLUME   749774.0000  4286584.0000          .0000
SO LOCATION 40006 VOLUME   749780.0000  4286587.0000          .0000

** Source Parameter Cards:
** POINT:   SRCID       QS              HS          TS          VS
      DS
** VOLUME:  SRCID       QS              HS        SYINIT      SZINIT
** AREA:    SRCID       QS              HS         XINIT

SO SRCPARAM 17000     8.862000         19.3200   339.0000    20.3300
    3.3500
SO SRCPARAM 17005     0.441000         16.7600   116.0000    20.7000
     .7600
SO SRCPARAM 17010     0.000000         68.5800   533.0000    18.5600
    2.7400
SO SRCPARAM 17020    52.920000         68.5800   460.0000     4.8500
    4.1100
SO SRCPARAM 17030     0.000000         66.1400   533.0000    26.8400
    2.1300
SO SRCPARAM 17040    28.350000         46.3300   510.0000    11.8800
    2.1300
SO SRCPARAM 17050    28.350000         46.3300   510.0000    10.6400
    2.1300
SO SRCPARAM 17060    22.680000         60.9600   460.0000     3.4400
    3.2000
SO SRCPARAM 17070    00.000000         32.9200   505.0000     7.0700
    2.1300
SO SRCPARAM 17080    00.000000         32.9200   505.0000     7.0700
    2.1300
SO SRCPARAM 17090    00.000000         29.8700   505.0000     7.0700
    2.1300
SO SRCPARAM 17100    00.000000         29.8700   505.0000     7.0700
    2.1300
SO SRCPARAM 17110    17.408000          9.1500   529.0000     3.3100
    2.7400
SO SRCPARAM 17120    17.297000          9.1500   529.0000     4.7900
    2.7400
SO SRCPARAM 17130    89.203000         33.5300   616.0000    18.9600
    2.0700
SO SRCPARAM 17140    39.947000         33.5300   616.0000    18.9600
    2.0700
SO SRCPARAM 17150     0.000000         33.5300   616.0000    18.9600
    2.0700
SO SRCPARAM 17170     0.000000         15.5400  1199.0000     4.3700
     .6000
SO SRCPARAM 17180     0.000000         15.5400  1199.0000     4.3700
     .6000
```

```
SO SRCPARAM 17190      0.000000        16.4600   505.0000     7.7900
     .5100
SO SRCPARAM 17200      0.000000        16.4600   505.0000     7.7900
     .5100
SO SRCPARAM 17210      0.000000        17.9800   505.0000     7.7900
     .5100
SO SRCPARAM 17220      0.000000        20.1200   505.0000     7.7900
     .5100
SO SRCPARAM 17230      0.000000        17.9800   505.0000     7.7900
     .5100
SO SRCPARAM 17240      0.000000        20.1200   505.0000     7.7900
     .5100
SO SRCPARAM 17260      0.000000        32.0000  1273.0000    20.0000
    3.8400
SO SRCPARAM 17340     52.255000        44.5000   644.0000     8.1500
    4.2000
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SO SRCPARAM 30020      0.000000        38.1000     6.6700    17.7200
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SO SRCPARAM 30040      1.193280        31.7500     3.0600    14.7700
SO SRCPARAM 30050      1.193280        31.7500     3.0600    14.7700
SO SRCPARAM 30060      2.091170        31.7500     4.6600    14.7700
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SO SRCPARAM 30080      2.091170        31.7500     4.6600    14.7700
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SO SRCPARAM 30120      1.193280        31.7500     3.0600    14.7700
SO SRCPARAM 30130      2.091170        31.7500     4.6600    14.7700
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SO SRCPARAM 30160      2.091170        31.7500     4.6600    14.7700
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SO SRCPARAM 30180    .40000000E-01      9.7600    15.9100     9.0700
SO SRCPARAM 30190    .40000000E-01      9.7600    15.9100     9.0700
SO SRCPARAM 30200    .40000000E-01      9.7600    15.9100     9.0700
SO SRCPARAM 30210    .40000000E-01      9.7600    15.9100     9.0700
SO SRCPARAM 30220    .40000000E-01      9.7600    15.9100     9.0700
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SO SRCPARAM 40006    .30450000         10.9000     2.1300    10.1400

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SO BUILDHGT 17005 36*15.20
SO BUILDHGT 17040 36*21.80
SO BUILDHGT 17050 36*21.80
SO BUILDHGT 17070 36*27.44
SO BUILDHGT 17080 36*27.44
SO BUILDHGT 17090 36*27.38
SO BUILDHGT 17100 36*27.38
SO BUILDHGT 17130 36*27.38
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SO BUILDWID 17070 36*51.01
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SO FINISHED
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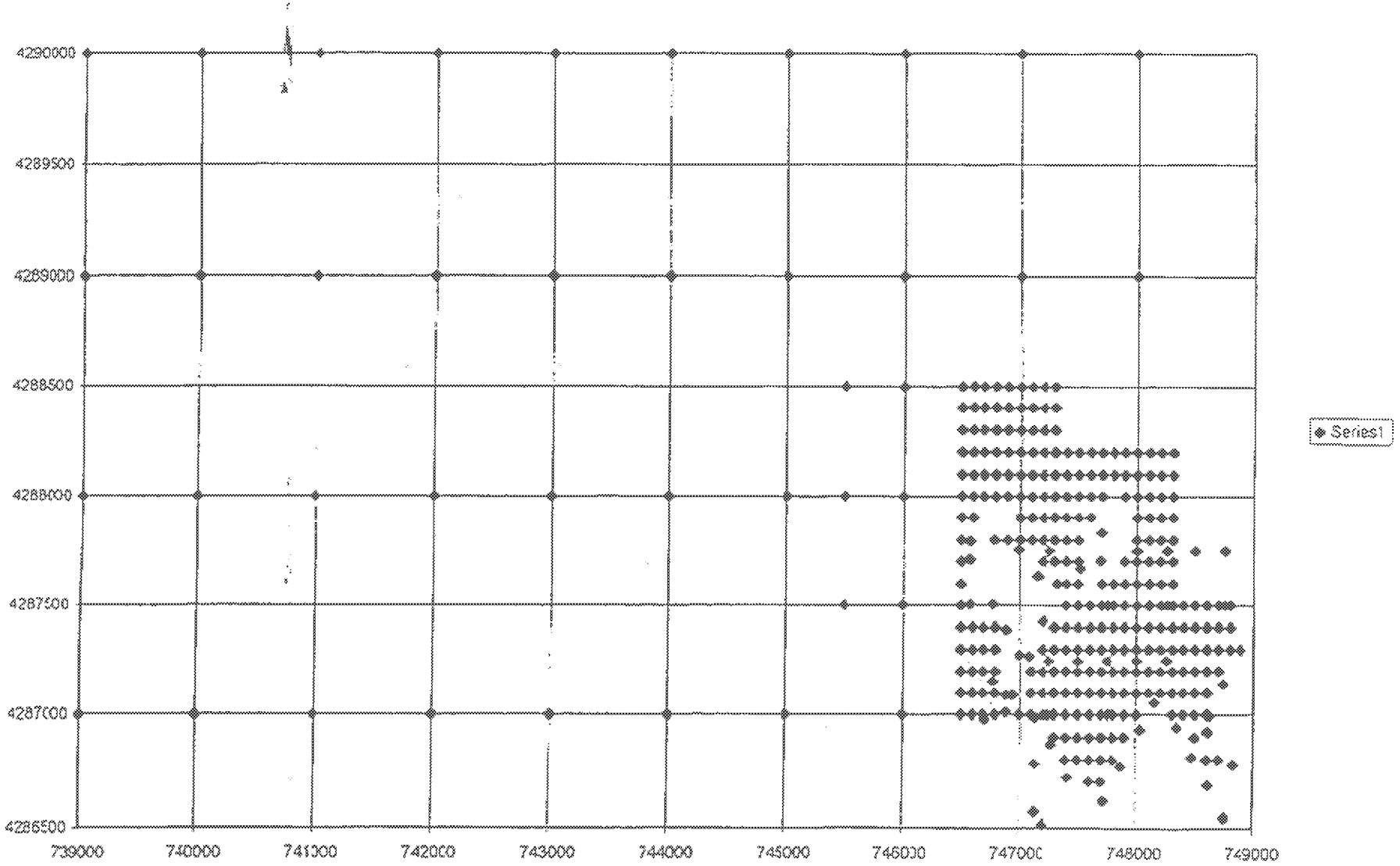
R008700

Sheet1 Chart 1



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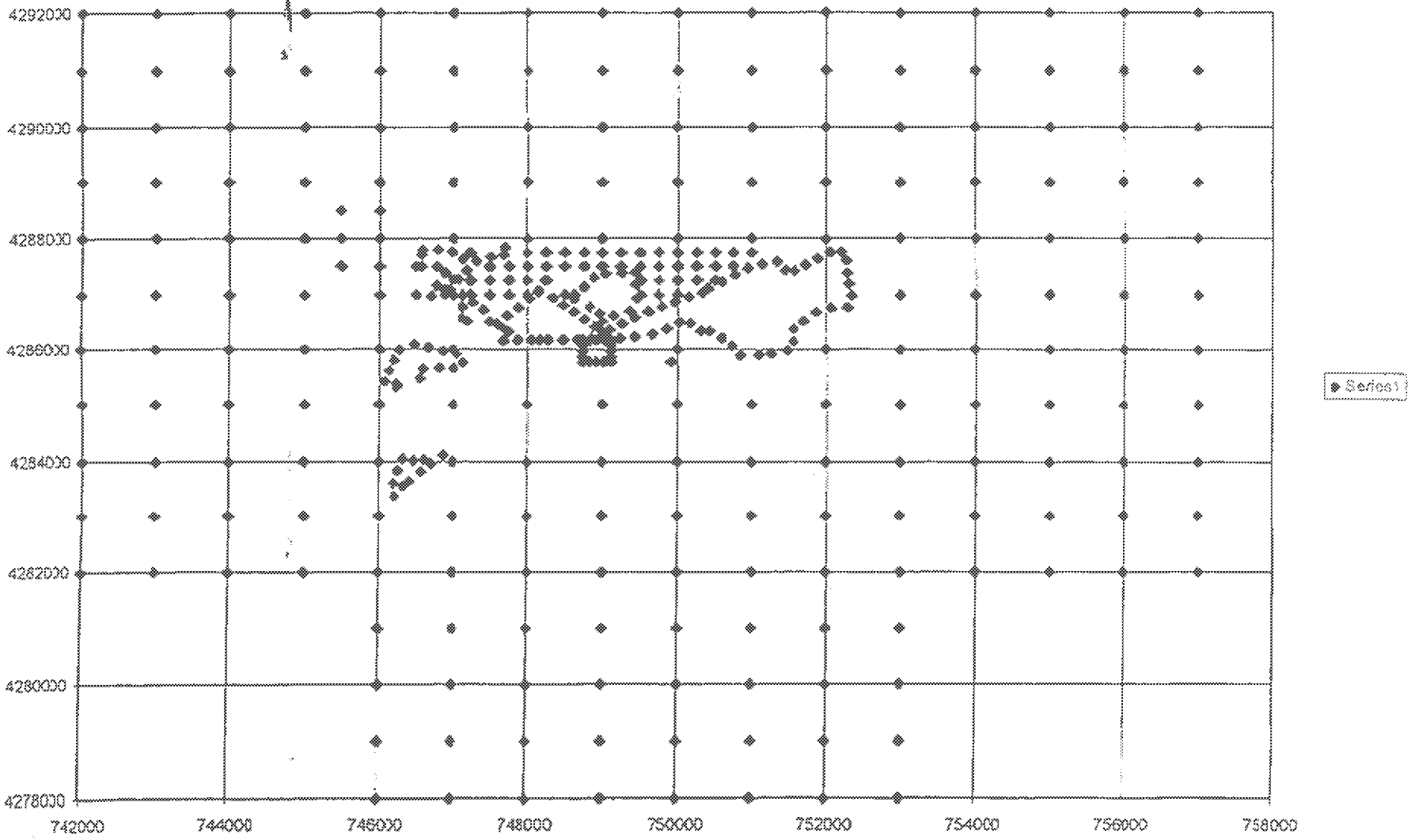

R008701

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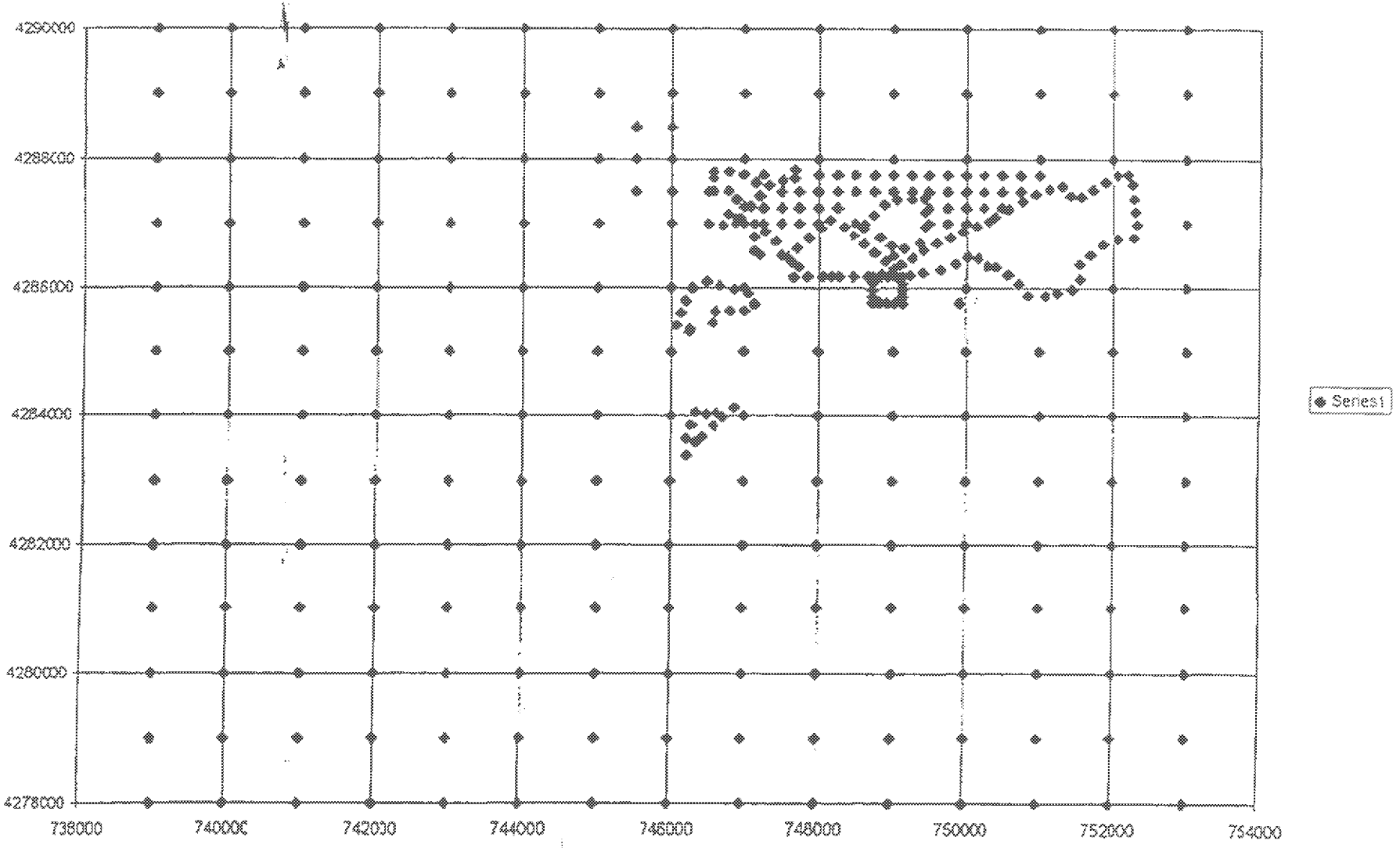

R008702

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source	Averaging Periods 1-hr	3-hr	8-hr	24-hr	Annual
Basic Oxygen Furnace					
1982	8.32992	5.11954	4.04261	3.17553	0.40857
1983	8.40577	5.14898	4.32258	3.57843	0.32592
1984	8.37546	5.91221	4.05676	3.12822	0.36519
1985	8.02242	6.30424	3.76267	2.85222	0.39603
1986	9.47827	4.04066	4.04810	3.32816	0.36204
Cont. Caster 1					
1982	41.72854	22.89801	16.26416	10.86266	1.94732
1983	32.29171	20.36359	16.39947	9.57338	1.67305
1984	31.71025	19.15633	13.23390	8.76975	1.85467
1985	33.97346	18.51436	14.45577	11.38182	1.93941
1986	36.22949	21.62249	17.93918	14.04322	2.28138
Cont. Caster 2					
1982	65.68226	36.85776	18.89259	10.82353	1.76785
1983	62.17685	36.08828	19.81877	10.11278	1.49192
1984	62.87528	33.71236	18.43674	9.49753	1.39393
1985	62.44077	28.05335	19.47174	7.98767	1.58275
1986	64.46448	40.34770	25.79822	14.15720	1.96735
Blast Furnace Stove A					
1982	2.03670	1.48685	0.90975	0.65324	0.08491
1983	2.02455	1.41562	1.01511	0.68786	0.06888
1984	2.01596	1.25256	0.93502	0.62503	0.06445
1985	1.66379	1.26479	0.92416	0.70430	0.08434
1986	2.05316	1.41788	0.91439	0.53281	0.07122
Blast Furnace Stove B					
1982	1.83402	1.49177	1.01450	0.52660	0.07639
1983	1.83477	1.27043	0.92317	0.57669	0.05900
1984	1.82304	1.16380	0.75610	0.58302	0.05680
1985	1.64615	1.11084	0.74498	0.55165	0.06810
1986	1.86933	1.18687	0.84350	0.46336	0.06435
Boilers 1-7					
1982	2.75429	1.77919	1.43687	1.01927	0.13301
1983	3.02279	2.13943	1.44578	0.99959	0.10807
1984	2.91744	2.29176	1.35573	1.00819	0.10460
1985	2.73767	1.96698	1.40735	1.13485	0.13117
1986	3.10811	1.78998	1.44748	0.81800	0.11280

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source		Averaging Periods 1-hr	3-hr	8-hr	24 hr	Annual
Boilers 8-10						
	1982	5.35731	3.89625	2.98148	1.87469	0.22715
	1983	5.25407	3.35492	2.73839	1.87139	0.21162
	1984	5.23671	4.10504	2.71289	1.73712	0.19509
	1985	6.01839	3.62993	2.63138	1.85790	0.25693
	1986	5.88483	3.42206	2.55914	1.49832	0.22485
Boiler 11						
	1982	5.53215	4.64445	3.09394	2.07691	0.25464
	1983	5.35349	4.07117	3.12422	1.86106	0.19298
	1984	4.99910	3.80702	3.23865	1.97619	0.18844
	1985	5.20339	3.77086	2.85423	2.01661	0.22532
	1986	4.82790	4.16260	2.19490	1.85885	0.18418
Boiler 12						
	1982	5.57253	4.84367	3.35639	2.27339	0.27846
	1983	5.37638	4.37468	3.42029	1.97834	0.21558
	1984	5.16843	3.97674	3.36319	2.07676	0.21379
	1985	5.35126	4.10718	2.97037	2.12109	0.25231
	1986	5.64365	4.39041	3.14718	1.93025	0.21097
By-Products Flare						
	1982	1.71711	1.17731	0.71190	0.34155	0.03809
	1983	1.67022	1.23291	0.80794	0.30850	0.03246
	1984	1.47099	1.20900	0.77422	0.35805	0.03104
	1985	1.46473	1.07527	0.61864	0.31640	0.03901
	1986	1.68110	1.12976	0.77906	0.35777	0.03810
Basic Oxygen Furnace Ladle Preheater/Dryer						
	1982	152.91600	71.24404	40.29081	30.52122	1.92532
	1983	105.10160	81.90311	38.11738	17.85423	1.57519
	1984	103.16574	65.88528	59.63541	30.77378	1.92123
	1985	123.96038	59.26729	41.58367	22.27744	1.99249
	1986	119.31400	74.24021	57.28976	23.81347	2.22434
A&B Blast Furnace Casthouse						
	1982	--	18.07605	--	10.31822	1.26819
	1983	--	20.13827	--	10.53369	0.92814
	1984	--	17.93552	--	10.79339	0.90975
	1985	--	19.07195	--	12.13430	1.18526
	1986	--	16.54042	--	8.49202	0.87335

GRANITE CITY STEEL
CHIQ MODELING RESULTS

Source	Averaging Periods 1-hr	3-hr	8-hr	24-hr	Annual
Iron Sprout Baghouse					
1982	--	100.92982	--	36.82012	4.79483
1983	--	94.94304	--	37.76471	4.77771
1984	--	84.64680	--	42.73305	4.31194
1985	--	87.12678	--	28.59888	5.01813
1986	--	94.53537	--	31.99669	5.72802
A&B Blast Furnace Uncap. Roof					
1982	--	149.78619	--	34.55944	6.27768
1983	--	150.18353	--	49.11052	5.00250
1984	--	122.64623	--	42.36183	4.49365
1985	--	121.93640	--	40.57382	5.31191
1986	--	166.83260	--	43.00364	6.32726
Slab Furnace #1					
1982	17.93674	--	9.07911	--	--
1983	17.83176	--	10.20481	--	--
1984	17.93832	--	11.31362	--	--
1985	17.36112	--	10.85532	--	--
1986	20.27599	--	10.26824	--	--
Slab Furnace #2					
1982	15.20269	--	9.91327	--	--
1983	15.53579	--	10.97924	--	--
1984	15.50592	--	9.75170	--	--
1985	16.99075	--	10.56445	--	--
1986	15.2304	--	9.91955	--	--
Slab Furnace #3					
1982	17.94873	--	10.22973	--	--
1983	18.03205	--	11.34276	--	--
1984	18.12591	--	10.52488	--	--
1985	19.46428	--	12.37726	--	--
1986	28.60361	--	10.48824	--	--
Slab Furnace #4					
1982	4.04542	--	1.98084	--	--
1983	3.44341	--	2.21318	--	--
1984	3.87351	--	2.39280	--	--
1985	4.43483	--	2.18079	--	--
1986	3.71547	--	2.18042	--	--

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source	Averaging Periods 1 hr	3 hr	8 hr	24 hr	Annual
Battery "A" Underfire					
1982	19.72516	--	14.52922	--	--
1983	19.7897	--	13.64811	--	--
1984	19.58003	--	14.73932	--	--
1985	19.41563	--	13.09506	--	--
1986	19.10546	--	14.22764	--	--
Battery "B" Underfire					
1982	14.74961	--	11.25772	--	--
1983	14.63826	--	8.69756	--	--
1984	14.7154	--	9.30580	--	--
1985	14.70493	--	8.24305	--	--
1986	14.08924	--	10.66454	--	--

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-4343

August 22, 1994

Michael Pelan
Woodward-Clyde Consultants
10975 El Monte
Suite 100
Overland Park, Kansas 66211

Dear Mr. Pelan:

Enclosed please find a diskette (5 1/4") containing a file (GCSSCRS0.INP) with the ISCST input information for Granite City Steel. The PSD inventory you requested will be forwarded to you at a later date. If you have further needs or questions, please feel free to contact me at (217)524-4788.

Sincerely,

Michael T. Reischel
Air Quality Planning Section
Bureau of Air

Enclosure
cc: Rob Kaleel

PELAN.MRE

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-4343

August 30, 1994

Michael Pelan
Woodward-Clyde Consultants
10975 El Monte
Suite 100
Overland Park, Kansas 66211

Dear Mr. Pelan:

Enclosed please find three diskettes (5 1/4") containing the files you requested. Please return the diskettes after you have copied the data. The diskettes contain the following data:

a) five meteorological data files (for 1982-86) that use St. Louis for surface data and Salem for upper air data

b) three receptor grid files of varying resolution and coverage. These grids were used for SIP related modeling.

It is our recommendation that the PSD modeling should use the above years (1982-1986) of meteorological data for consistency with the SIP modeling.

I have enclosed a cross reference listing of our source I.D. numbers with corresponding emission unit names for your convenience. If you have any questions regarding PSD inventory or sources please contact Mr. Chris Romaine of our Permits Section at (217)785-1715. If you have further needs or questions, please feel free to contact me at (217)524-4788.

Sincerely,

Michael T. Reischel
Air Quality Planning Section
Bureau of Air

Enclosure
cc: Rob Kaleel
Chris Romaine

PELAN.MRE

24-Aug-94

CURRENT SO2 EMISSIONS UNITS FOR GRANITE CITY STEEL

I.D.	SOURCE DESCRIPTION
* 17000	Blast Furnace C.H. Baghouse
* 17005	Blast Furnace I.S. Baghouse
17010	B Blast Furnace Stoves
17020	Boiler House 1; 1-7
17030	A Blast Furnace Stoves
17040	Boiler 11 Blast Furnace
17050	Boiler 12 Blast Furnace
17060	Boiler House 1; 8-10
17070	Steam Boilers 1
17080	Steam Boilers 2
17090	Steam Boilers 3
17100	Steam Boilers 4
17110	Battery A underfiring
17120	Battery B underfiring
17130	Slab Furnace No. 1
17140	Slab Furnace No. 2
17150	Slab Furnace No. 3
17170-080	No. 6 Galvanizing Furnace
17180-240	Galvanizing Line 7A Furnace
17260	By-Product Flare
17340	Slab Furnace No. 4 (Reheat)
30010-020	No. 6 Galvanizing Pot
30030-160	Ladle Drying Preheaters
30170-190	Oven Charging - A Battery
30200-220	Oven Charging - B Battery

```
CO STARTING
CO TITLEONE GRANITE CITY STEEL SO2 SOURCES: GCSSCRS0.INP: 17AUG94
CO FINISHED
SO STARTING

** Source Location Cards:
**           SRCID SRCTYP         XS             YS             ZS

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SO LOCATION 17030 POINT    749880.0000  4286560.0000         .0000
SO LOCATION 17040 POINT    749945.0000  4286640.0000         .0000
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SO LOCATION 17240 POINT    748460.0000  4286780.0000         .0000
SO LOCATION 17260 POINT    750050.0000  4286770.0000         .0000
SO LOCATION 17340 POINT    747680.0000  4286530.0000         .0000
SO LOCATION 30010 VOLUME   748940.0000  4287100.0000         .0000
SO LOCATION 30020 VOLUME   748951.0000  4287109.0000         .0000
SO LOCATION 30030 VOLUME   748430.0000  4286320.0000         .0000
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SO LOCATION 30150 VOLUME   748475.0000  4286338.0000         .0000
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SO LOCATION 40002 VOLUME   749764.0000  4286575.0000          .0000
SO LOCATION 40003 VOLUME   749767.0000  4286578.0000          .0000
SO LOCATION 40004 VOLUME   749771.0000  4286581.0000          .0000
SO LOCATION 40005 VOLUME   749774.0000  4286584.0000          .0000
SO LOCATION 40006 VOLUME   749780.0000  4286587.0000          .0000

** Source Parameter Cards:
** POINT:   SRCID       QS              HS        TS          VS
      DS
** VOLUME:  SRCID       QS              HS       SYINIT      SZINIT
** AREA:    SRCID       QS              HS        XINIT

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     .7600
SO SRCPARAM 17010     0.000000        68.5800   533.0000    18.5600
    2.7400
SO SRCPARAM 17020    52.920000        68.5800   460.0000     4.8500
    4.1100
SO SRCPARAM 17030     0.000000        66.1400   533.0000    26.8400
    2.1300
SO SRCPARAM 17040    28.350000        46.3300   510.0000    11.8800
    2.1300
SO SRCPARAM 17050    28.350000        46.3300   510.0000    10.6400
    2.1300
SO SRCPARAM 17060    22.680000        60.9600   460.0000     3.4400
    3.2000
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    2.1300
SO SRCPARAM 17080    00.000000        32.9200   505.0000     7.0700
    2.1300
SO SRCPARAM 17090    00.000000        29.8700   505.0000     7.0700
    2.1300
SO SRCPARAM 17100    00.000000        29.8700   505.0000     7.0700
    2.1300
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    2.7400
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    2.7400
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    2.0700
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    2.0700
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    2.0700
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     .5100
SO SRCPARAM 17210     0.000000          17.9800   505.0000     7.7900
     .5100
SO SRCPARAM 17220     0.000000          20.1200   505.0000     7.7900
     .5100
SO SRCPARAM 17230     0.000000          17.9800   505.0000     7.7900
     .5100
SO SRCPARAM 17240     0.000000          20.1200   505.0000     7.7900
     .5100
SO SRCPARAM 17260     0.000000          32.0000  1273.0000    20.0000
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    4.2000
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SO SRCPARAM 30020     0.000000          38.1000     6.6700    17.7200
SO SRCPARAM 30030     1.193280          31.7500     3.0600    14.7700
SO SRCPARAM 30040     1.193280          31.7500     3.0600    14.7700
SO SRCPARAM 30050     1.193280          31.7500     3.0600    14.7700
SO SRCPARAM 30060     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30070     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30080     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30090     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30100     1.193280          31.7500     3.0600    14.7700
SO SRCPARAM 30110     1.193280          31.7500     3.0600    14.7700
SO SRCPARAM 30120     1.193280          31.7500     3.0600    14.7700
SO SRCPARAM 30130     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30140     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30150     2.091170          31.7500     4.6600    14.7700
SO SRCPARAM 30160     2.091170          31.7500     4.6600    14.7700
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SO SRCPARAM 30190    .40000000E-01       9.7600    15.9100     9.0700
SO SRCPARAM 30200    .40000000E-01       9.7600    15.9100     9.0700
SO SRCPARAM 30210    .40000000E-01       9.7600    15.9100     9.0700
SO SRCPARAM 30220    .40000000E-01       9.7600    15.9100     9.0700
SO SRCPARAM 40001    .30450000          10.9000     2.1300    10.1400
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SO SRCPARAM 40003    .30450000          10.9000     2.1300    10.1400
SO SRCPARAM 40004    .30450000          10.9000     2.1300    10.1400
SO SRCPARAM 40005    .30450000          10.9000     2.1300    10.1400
SO SRCPARAM 40006    .30450000          10.9000     2.1300    10.1400

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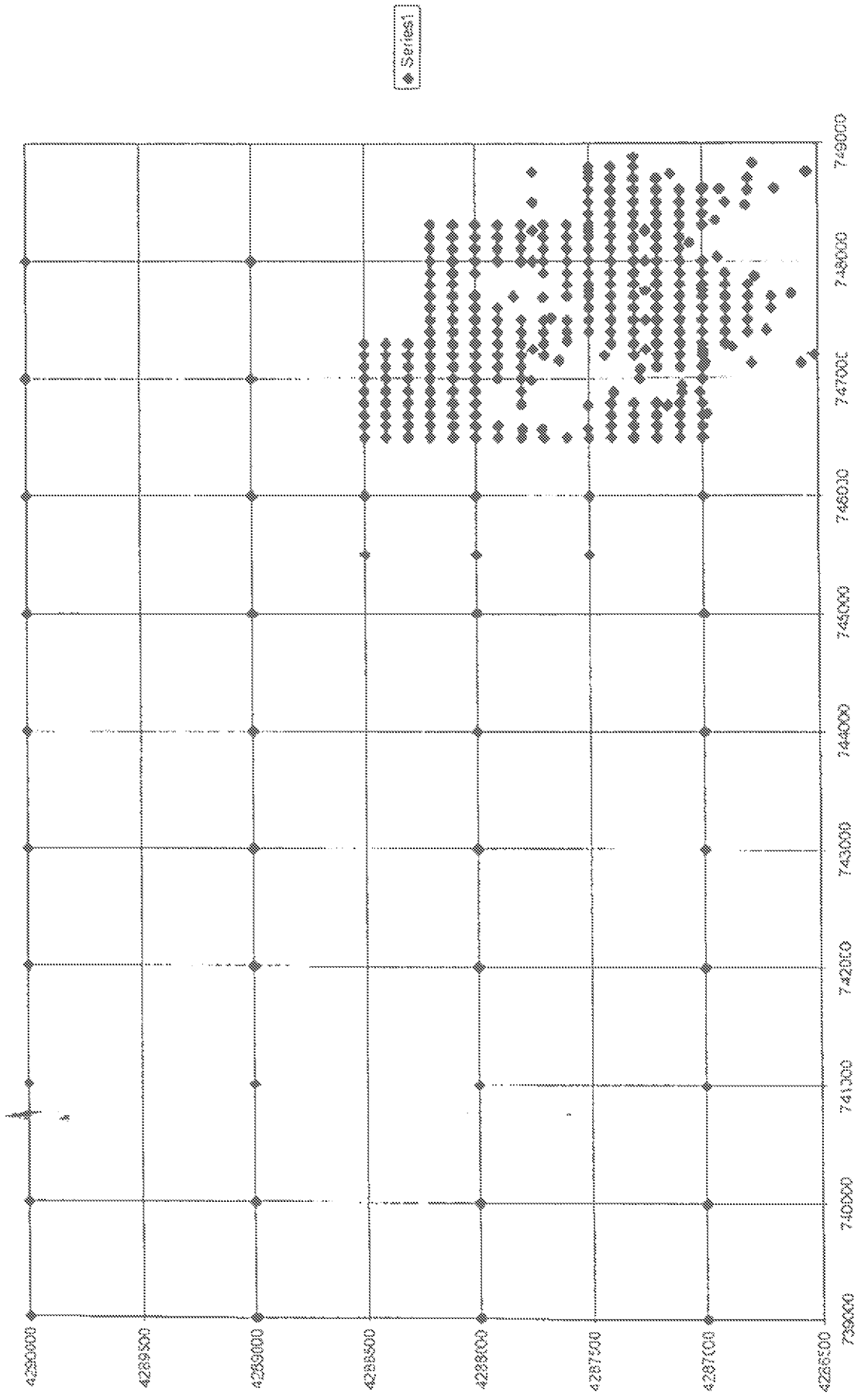

Sheet1 Chart 1

RCP0.REC

Sheet1 Chart 1

RCP2.REC

Sheet1 Chart 1

RCP4.REC

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source		Averaging Periods 1-hr	3-hr	8-hr	24-hr	Annual
Basic Oxygen Furnace						
	1982	8.32992	5.11954	4.04261	3.17553	0.40857
	1983	8.40577	5.14898	4.32258	3.57843	0.32592
	1984	8.37546	5.91221	4.05676	3.12822	0.36519
	1985	8.02242	6.30424	3.78267	2.85222	0.39603
	1986	9.47827	4.04066	4.04810	3.32816	0.36204
Cont. Caster 1						
	1982	41.72854	22.89801	16.26416	10.86266	1.94732
	1983	32.29171	20.36359	16.39947	9.57338	1.67305
	1984	31.71025	19.15633	13.23390	8.76975	1.85467
	1985	33.97346	18.51436	14.45577	11.38182	1.93941
	1986	36.22949	21.62249	17.93918	14.04322	2.28138
Cont. Caster 2						
	1982	85.68226	36.85776	18.89259	10.82353	1.75785
	1983	62.17685	36.08628	19.81877	10.11278	1.49192
	1984	62.87529	33.71236	18.43574	9.49753	1.39393
	1985	62.44077	28.05335	19.47174	7.98767	1.58275
	1986	64.46448	40.34770	25.79822	14.15720	1.96735
Blast Furnace Stove A						
	1982	2.03670	1.48685	0.90975	0.65324	0.08491
	1983	2.02455	1.41562	1.01511	0.68786	0.06888
	1984	2.01596	1.25256	0.93502	0.62503	0.06445
	1985	1.86379	1.26479	0.92416	0.70430	0.08434
	1986	2.05316	1.41788	0.91439	0.53281	0.07122
Blast Furnace Stove B						
	1982	1.83402	1.49177	1.01450	0.52660	0.07639
	1983	1.83477	1.27043	0.92317	0.57669	0.05900
	1984	1.82304	1.16380	0.75610	0.58302	0.05680
	1985	1.64615	1.11064	0.74498	0.55165	0.06810
	1986	1.86933	1.18687	0.84350	0.46336	0.06435
Boilers 1-7						
	1982	2.75429	1.77919	1.43887	1.01927	0.13301
	1983	3.02279	2.13943	1.44578	0.99959	0.10907
	1984	2.91744	2.29176	1.35573	1.00819	0.10460
	1985	2.73767	1.96698	1.40735	1.13495	0.13117
	1986	3.10811	1.78998	1.44748	0.81800	0.11280

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source		Averaging Periods 1-hr	3-hr	8-hr	24-hr	Annual
Boilers 8-10						
	1982	5.35731	3.89625	2.98148	1.87469	0.22715
	1983	5.25407	3.35492	2.73839	1.87139	0.21162
	1984	5.23671	4.10504	2.71289	1.73712	0.19509
	1985	6.01839	3.62993	2.63138	1.85790	0.25693
	1986	5.88483	3.42206	2.55914	1.49832	0.22485
Boiler 11						
	1982	5.53215	4.64445	3.09394	2.07691	0.25464
	1983	5.35349	4.07117	3.12422	1.86106	0.19298
	1984	4.99910	3.80702	3.23865	1.97619	0.18844
	1985	5.20339	3.77086	2.85423	2.01661	0.22532
	1986	4.82790	4.16260	2.19490	1.85895	0.18418
Boiler 12						
	1982	5.57253	4.84367	3.35639	2.27339	0.27846
	1983	5.37638	4.37466	3.42029	1.97834	0.21558
	1984	5.16843	3.97674	3.38319	2.07676	0.21379
	1985	5.35126	4.10718	2.97037	2.12109	0.25231
	1986	5.54365	4.39041	3.14718	1.93025	0.21097
By-Products Flare						
	1982	1.71711	1.17731	0.71190	0.34155	0.03809
	1983	1.67022	1.23291	0.80794	0.30850	0.03246
	1984	1.47099	1.20900	0.77422	0.35805	0.03104
	1985	1.46473	1.07527	0.61864	0.31640	0.03901
	1986	1.68110	1.12976	0.77906	0.35777	0.03810
Basic Oxygen Furnace Ladle Preheater/Dryer						
	1982	152.91600	71.24404	40.29081	30.52122	1.92532
	1983	105.10160	81.90311	38.11738	17.85423	1.57519
	1984	103.18574	65.88528	59.53541	30.77378	1.92123
	1985	123.98038	59.26729	41.58367	22.27744	1.99249
	1986	119.31400	74.24021	57.29976	23.81347	2.22434
A&B Blast Furnace Casthouse						
	1982	--	18.07605	--	10.31622	1.26819
	1983	--	20.13827	--	10.53389	0.92814
	1984	--	17.93552	--	10.79339	0.90975
	1985	--	19.07195	--	12.13430	1.18526
	1986	--	16.54042	--	8.49202	0.87335

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source	Averaging Periods 1-hr	3-hr	8-hr	24-hr	Annual
Iron Sprout Baghouse					
1982	--	100.92982	--	36.82012	4.79483
1983	--	94.94304	--	37.76471	4.77771
1984	--	84.64680	--	42.73305	4.31194
1985	--	87.12678	--	28.59888	5.01813
1986	--	94.53537	--	31.89669	5.72802
A&B Blast Furnace Uncap. Roof					
1982	--	149.78619	--	34.55944	6.27768
1983	--	150.18353	--	49.11052	5.00250
1984	--	122.64623	--	42.36183	4.49365
1985	--	121.93640	--	40.57382	5.31191
1986	--	166.83260	--	43.00364	6.32726
Slab Furnace #1					
1982	17.93674	--	9.07911	--	--
1983	17.83176	--	10.20481	--	--
1984	17.93832	--	11.31362	--	--
1985	17.36112	--	10.85532	--	--
1986	20.27599	--	10.26824	--	--
Slab Furnace #2					
1982	15.20269	--	9.91327	--	--
1983	15.53579	--	10.97924	--	--
1984	15.50592	--	9.75170	--	--
1985	16.99075	--	10.56445	--	--
1986	15.2304	--	9.91955	--	--
Slab Furnace #3					
1982	17.94873	--	10.22973	--	--
1983	18.03205	--	11.34276	--	--
1984	18.12591	--	10.52488	--	--
1985	19.46428	--	12.37725	--	--
1986	28.60361	--	10.48824	--	--
Slab Furnace #4					
1982	4.04542	--	1.98084	--	--
1983	3.44341	--	2.21318	--	--
1984	3.87351	--	2.38280	--	--
1985	4.43483	--	2.18079	--	--
1986	3.71547	--	2.18042	--	--

GRANITE CITY STEEL
Chi/Q MODELING RESULTS

Source	Averaging Periods 1-hr	3-hr	8-hr	24-hr	Annual
Battery "A" Underfire					
1982	19.72516	--	14.52922	--	--
1983	19.7897	--	13.64811	--	--
1984	19.58003	--	14.73932	--	--
1985	19.41563	--	13.09506	--	--
1986	19.10546	--	14.22764	--	--
Battery "B" Underfire					
1982	14.74961	--	11.25772	--	--
1983	14.63826	--	8.69756	--	--
1984	14.7154	--	9.30580	--	--
1985	14.70493	--	8.24305	--	--
1986	14.08924	--	10.66454	--	--

GRANITE CITY STEEL
MODELING FILES

File Name	Description
COBFSA8*	Blast Furnace Stove A, CO, Chi/Q
COBFSB8*	Blast Furnace Stove B, CO, Chi/Q
COCC18*	Continuous Caster 1, CO, Chi/Q
COCC28*	Continuous Caster 2, CO, Chi/Q
COBFF8*	Blast Furnace Flare, CO, Chi/Q
COBH178*	Boiler House 1 1-7, CO, Chi/Q
COBH818*	Boiler House 1 8-10, CO, Chi/Q
COB118*	Boiler 11, CO, Chi/Q
COB128*	Boiler 12, CO, Chi/Q
COBOFL8*	Basic Oxygen Furnace Ladle, CO, Chi/Q
COBOF8*	Basic Oxygen Furnace, CO, Chi/Q
GCSCO8*	A & B Blast Furnace Casthouse, Iron Spout Baghouse, A & B Blast Furnace Uncap Roof, CO, Chi/Q
GCSSO8*	A & B Blast Furnace Casthouse, Iron Spout Baghouse, A & B Blast Furnace Uncap Roof, SO_2, Chi/Q
GCS18*	Basic Oxygen Furnace, Continuous Caster 1, Continuous Caster 2, Blast Furnace Stove A, Blast Furnace Stove B, SO_2, Chi/Q
GCS28*	Boiler House 1 1-7, Boiler House 1 8-10, Boiler 11, Boiler 12, Flare, SO_2, Chi/Q

GCS38*	BOF Ladle, Boiler 1, Boiler 2, Boiler 3, Boiler 4, SO_2, Chi/Q
GCS48*	Flare, Boiler 1, Boiler 2, Boiler 3, Boiler 4, CO, Chi/Q
GCS58*	Flare, Boiler 1, Boiler 2, Boiler 3, Boiler 4, SO_2, Chi/Q
1GCSCO8*	Slab Furnaces 1-4, CO, Chi/Q
2GCSCO8*	Battery Underfiring A & B, CO, Chi/Q
1GCSSO8* 2GCSSO8* 3GCSSO8*	Most Recent SO_2 Scenarios, Actual Emission Rates

*1982 - 86 Five files per each source set for each of five years of met. data.

4GCSSO8*
5GCSSO8*
6GCSSO8*
7GCSSO8*

BASE PERIOD FUEL USE

	BFG (MMBtu)					BFG (MM cf)						
Source	Aug - Dec '92	1993	Jan - Jul '94	Total	Average	Average						
"A" Stoves	547,311	1,861,751	1,234,705	3,643,767	1,821,884	22,774						
"B" Stoves	752,892	1,792,114	1,007,535	3,552,451	1,776,226	22,203						
Boilers 1-10	1,125,481	3,268,275	1,586,438	6,000,202	3,000,101	37,501						
Boiler 11	184,301	417,788	269,581	851,880	425,940	5,323						
Boiler 12	319,314	582,520	235,183	1,137,027	568,514	7,106						
B.F. Flare	850,135	2,124,204	1,406,818	4,181,158	2,090,579	26,132						
Slab Furnaces 1 - 4												
Casters												
Totals				19,368,295	9,683,143	121,039						
	#6 Oil (MMBtu)					# 6 Oil (Mgals)	NG (MMBtu)					NG (MMcf)
Source	Aug - Dec '92	1993	Jan - Jul '94	Total	Average	Average	Aug - Dec '92	1993	Jan - Jul '94	Total	Average	Average
"A" Stoves												
"B" Stoves												
Boilers 1-10							102,015	185,510	437,409	734,934	367,467	361
Boiler 11	0	1,613	3,838	4,651	2,326	15	43,815	240,380	175,846	460,151	230,076	226
Boiler 12	0	300	0	300	150	1	87,064	240,780	108,381	445,885	222,943	219
B.F. Flare										0	0	0
BOF Preheaters/Dryers							123,982	280,858	164,814	577,735	288,868	283
Totals				4,951	2475.5	16				2,217,905	1,109,953	1,089

Granite City Division of National Steel Corporation
Blast Furnace and BOF Production

BOF PRODUCTION (net tons/month)									
month	1986	1987	1988	1989	1990	1991	1992	1993	1994
1	173,972	111,383	190,588	112,096	207,516	176,208	205,846	202,208	182,626
2	120,008	95,872	166,852	109,648	184,568	157,456	196,156	183,411	201,262
3	162,006	189,720	137,144	180,017	211,206	163,633	205,846	205,652	226,972
4	176,100	182,040	185,160	178,410	205,182	184,658	198,229	200,932	211,520
5	173,507	181,102	201,965	195,672	212,644	202,159	205,258	213,685	218,556
6	174,540	184,380	186,960	188,820	199,833	195,417	184,015	209,603	211,124
7	174,716	188,449	193,409	201,438	208,108	170,827	202,551	216,556	213,900
8	170,872	183,334	187,426	125,767	208,627	207,474	213,186	217,920	
9	160,680	183,570	185,160	205,360	183,596	198,852	136,526	211,498	
10	157,914	183,086	195,858	202,213	204,291	194,996	151,808	218,585	
11	175,260	191,670	184,800	185,430	203,250	198,712	207,000	210,646	
12	132,556	188,201	153,760	176,390	192,767	203,843	156,635	205,000	
total	1,952,131	2,062,807	2,169,082	2,061,251	2,421,588	2,255,235	2,263,056	2,495,696	

BLAST FURNACE PRODUCTION (net tons/month)									
month	1986	1987	1988	1989	1990	1991	1992	1993	1994
1	143,437	89,931	153,171	93,682	164,925	150,713	173,739	170,141	157,484
2	98,392	77,756	135,772	91,616	148,404	133,608	162,818	154,107	175,540
3	132,711	151,559	113,491	150,474	169,449	143,364	173,613	173,453	196,360
4	143,340	91,380	148,890	147,690	167,318	161,388	168,325	173,707	182,527
5	139,345	150,970	161,169	159,698	173,396	174,700	174,661	178,714	187,766
6	140,610	155,220	153,840	154,800	162,136	166,374	157,507	175,806	184,430
7	141,577	154,535	156,302	163,928	169,738	149,959	174,651	163,744	186,723
8	139,407	152,210	150,784	104,656	170,399	178,011	182,629	187,742	
9	134,490	150,480	156,090	165,780	148,870	172,407	114,551	179,321	
10	132,494	151,621	156,984	160,518	167,405	168,123	126,780	185,734	
11	135,900	154,350	150,210	150,780	167,573	170,330	175,665	178,574	
12	107,012	152,737	124,434	150,319	160,251	173,513	129,677	178,938	
total	1,588,715	1,632,749	1,761,137	1,694,141	1,969,864	1,942,490	1,913,616	2,119,981	

R008724

Blast Furnace and BOF Shop Production
Base Period for Netting Analysis

BOF PRODUCTION (net tons/month)

month	*1992*	*1993*	*1994*	*Total (24 months)*	*Avg. (12 months)*	*Average (NTPD)*
1		202,208	162,626			
2		183,411	201,262			
3		205,652	226,972			
4		200,932	211,520			
5		213,685	218,556			
6		209,603	211,124			
7		216,556	213,900			
8	213,186	217,920				
9	136,526	211,498				
10	151,808	218,585				
11	207,000	210,646				
12	156,635	205,000				
total	865,155	2,495,896	1,465,960	4,826,811	2,413,406	6,612

BLAST FURNACE PRODUCTION (net tons/month)

month	1992	1993	1994			
1		170,141	157,484			
2		154,107	175,540			
3		173,463	186,360			
4		173,707	182,527			
5		178,714	187,766			
6		175,806	184,430			
7		183,744	186,723			
8	182,629	187,742				
9	114,551	179,321				
10	126,780	185,734				
11	175,665	178,574				
12	129,677	176,938				
total	728,302	2,119,981	1,270,830	4,119,113	2,059,557	5,643

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-4343

August 22, 1994

Michael Pelan
Woodward-Clyde Consultants
10975 El Monte
Suite 100
Overland Park, Kansas 66211

Dear Mr. Pelan:

Enclosed please find a diskette (5 1/4") containing a file (GCSSCRS0.INP) with the ISCST input information for Granite City Steel. The PSD inventory you requested will be forwarded to you at a later date. If you have further needs or questions, please feel free to contact me at (217)524-4788.

Sincerely,

Michael T. Reischel
Air Quality Planning Section
Bureau of Air

Enclosure
cc: Rob Kaleel

PELAN.MRE

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618-451-3241
fax: 618-451-3707
email: djrintoul@uss.com

David J. Rintoul
General Manager

January 31, 2008

CERTIFIED MAIL NO.7007 0710 0005 1642 0547
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P. E.
Acting Manager, Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794

RECEIVED
STATE OF ILLINOIS
FEB 04 2008
Environmental Protection Agency
BUREAU OF AIR

RE: Modification of Production
Increase Permit (No. 95010001)
Facility ID No.: 119813AAI

Dear Mr. Bakowski:

Enclosed please find an original and three copies of United States Steel Corporation's application to modify Permit No. 95010001 known as the Production Increase Permit. The application to modify is to correct the emission factors used to develop the original application and permit in light of newly identified information on emissions and emission factors. The proposed permit modification will increase SO_2 emission factors for the combustion of Blast Furnace Gas (BFG) and CO and VOM emission factors for the combustion of natural gas. No physical changes or changes in the method of operations are being proposed.

Submittal of this application including air quality modeling fulfills the requirements of condition D 4 (a) "Compliance Schedule for the Blast Furnace Gas SO_2 Emissions" as contained in Consent Order No. 05-CH-750 (ordered on December 18, 2007 by the Third Judicial Circuit, Madison County, Illinois).

Should you have questions or require further information, please do not hesitate to contact Larry Siebenberger at 618-451-3391.

Sincerely,

David J. Rintoul
General Manager

jm

Enclosure(s)

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

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STATE OF ILLINOIS
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cc: Ray Pilapil
Bureau of Air
Section Manager, Compliance
Illinois EPA
1021 North Grand Avenue East
P. O. Box 19276
Springfield, IL 62794-9276
CERTIFIED MAIL NO.7007 0710 0005 1642 0554

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Division of Legal Counsel
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P. O. Box 19276
Springfield, IL 62794-9276
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David Smiga – USS
David W. Hacker - USS

I.B.D. → 5-15-01 C. ROMAINE R008729

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3241
fax: 618 451 3707
email: djrintoul@uss.com

David J. Rintoul
General Manager

January 31, 2008

CERTIFIED MAIL NO.7007 0710 0005 1642 0547
RETURN RECEIPT REQUESTED

119813AAI
95010001
x 2-4-08
ck# 769009 U.S. STEEL CORP
Rec'd.
$8,000.00

Mr. Edwin C. Bakowski, P. E.
Acting Manager, Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794

IEPA - DIVISION OF RECORDS MANAGEMENT
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REVIEWER JRM

RE: Modification of Production
Increase Permit (No. 95010001)
Facility ID No.: 119813AAI

Dear Mr. Bakowski:

Enclosed please find an original and three copies of United States Steel Corporation's application to modify Permit No. 95010001 known as the Production Increase Permit. The application to modify is to correct the emission factors used to develop the original application and permit in light of newly identified information on emissions and emission factors. The proposed permit modification will increase SO_2 emission factors for the combustion of Blast Furnace Gas (BFG) and CO and VOM emission factors for the combustion of natural gas. No physical changes or changes in the method of operations are being proposed.

Submittal of this application including air quality modeling fulfills the requirements of condition D 4 (a) "Compliance Schedule for the Blast Furnace Gas SO_2 Emissions" as contained in Consent Order No. 05-CH-750 (ordered on December 18, 2007 by the Third Judicial Circuit, Madison County, Illinois).

Should you have questions or require further information, please do not hesitate to contact Larry Siebenberger at 618-451-3391.

Sincerely,

David J. Rintoul
General Manager

jm

Enclosure(s)

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United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618-451-3391
Fax: 618-451-3707
email: lgsiebenberger@uss.com

David J. Rintoul
General Manager

January 21, 2008

CERTIFIED MAIL NO. 7007 0710 0005 1642 0356
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until February 29, 2008, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

David J. Rintoul
General Manager

jm

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United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3391
fax: 618 451 3707
email: dlintoul@uss.com

David J. Rintoul
General Manager

December 18, 2007

CERTIFIED MAIL NO. 7007 0710 0002 1598 6917
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

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REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until January 31, 2008, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

David J. Rintoul
General Manager

jm

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United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618.451.3333
fax: 618.451.3707
email: djrintoul@uss.com

David J. Rintoul
General Manager

November 19, 2007

CERTIFIED MAIL NO. 7006 0100 0000 7699 6391
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Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until December 31, 2007, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

David J. Rintoul
General Manager

jm

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United States Steel Corporation
Granite City Works
3001 State Street
Granite City, IL 62040
618 451 3341
fax: 618 451 3707
email: djrintoul@uss.com

David J. Rintoul
General Manager

October 22, 2007

CERTIFIED MAIL NO. 7006 0100 0000 7699 6087
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REVIEWER JRM

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until November 30, 2007, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

David J. Rintoul
General Manager

jm

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United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3241
fax: 618 451 3707
email: [illegible]@uss.com

David J. Rintoul
General Manager

September 17, 2007

CERTIFIED MAIL NO. 7006 0100 0000 7699 5813
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until October 31, 2007, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

David J. Rintoul
General Manager

jm

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Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3391

August 23, 2007

CERTIFIED MAIL NO. 7006 0100 0000 7699 5677
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Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until September 30, 2007, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

Larry Siebenberger
Manager – Environmental Control

jm

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R008736

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

Region Copy → C.R.

July 23, 2007

CERTIFIED MAIL NO. 7006 2150 0003 0374 7283
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Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

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REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until August 31, 2007, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

David J. Rintoul
General Manager
Granite City Works
U. S. Steel Corporation

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Permits → Data Entry

Final Test Report

ID No.:	119813AAI	Test Date: October 15 & 16, 2006	
Source Name:	U.S. Steel Granite City Works		
Location:	Granite, Illinois		
Permit No.:	95010001	**TYPE OF TEST PROGRAM:**	
☐ FESOP ☒ Title V ☐ Lifetime ☐ Construction		☐ Initial Performance	☐ Annual
Emission Unit(s):	BOF ESP	☒ Compliance Performance	☐
Testing Company	Company Name	ARI Environmental, Inc.	
	Contact	Terrence Davis, Jeff Goldfine and Graig James	
	Phone Number	847-487-1580 ext.106	
	Report No.	436-133	
Control Equipment:	☐ Dry Scrubber Followed by Filter ☐ Wet scrubber ☐ Regenerative Thermal Oxidizer ☒ ESP		
APPLICABLE RULE:	☐ 35 IAC 218.204 ☐ 40 CFR PART 60, ☒ 40 CFR PART 63, SUBPARTS FFFFF		

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Parameters	**Proposed USEPA Reference Methods**	Yes	No
☒ PM, ☐ CO, ☐ SO_2 ☐ NOx, ☐ HCl ☐ Cd ☐ Hg ☐ Pb ☐ HF ☐ Opacity	☒ 1 ☒ 2 ☒ 3 ☐ 3A ☒ 4 ☒ 5 ☐ 6 ☐ 6c ☐ 7E ☐ 9 ☐ 10 ☐ 18 ☐ 20 ☐ 24 ☐ 25 ☐ 25A ☐ 26 ☐ 26A ☐ 29 ☐ 202	✓	
Alternative method(s)			✓
Compliance Demonstration		✓	
Was protocol submitted?	Date: 7/7/2006	✓	
Was protocol submitted timely?		✓	
Was test protocol approved?	No review		
Did testing follow the approved protocol?		NA	
Required by permit?			✓
Were three test-run performed for the appropriate duration?		✓	
Were three opacity test runs performed?		CAM	
Were raw field and laboratory data submitted?		✓	
Process Information			
Average processed weight	821.6 T/hr	Processed information was requested and received on July 2, 2007.	
Was the process rate during stack test within 90 or 100% of allowable? (i.e. was stack test done under conditions representative of maximum emissions?)		✓	

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Unit	Pollutant	Run 1	Run 2	Run 3	Average	Limits
BOF ESP	PM (gr/dscf)	0.0029	0.0079	.0031	0.0046	0.02gr/dscf 40CFR 63.7790(a)
	PM (lb/hr)	12.23	34.40	13.60	20.08	
One hour average opacity measurements form CAM indicates compliance						10 Percent

	Yes	No
Are test results in compliance with applicable requirements, permit special conditions, and Agency averaging policy/rule?	✓	

Comments: The purpose of this test was to determine emission rate of particulate matter from the BOF ESP exhaust stack in accordance with 40 CFR 63, Subpart FFFFF. The calculations and methodologies comply with the requirements for NESHAP for Integrated Iron and Steel Manufacturing Facilities as required in 40 CFR 63.7822 (g). Test results demonstrated compliance with the 0.02gr/dscf limits in 40 CFR 63.7790(a) Table 1.

Reviewed by:	Ken Erewele	Date: 7/12/2007	Recommendation:	Accept

c: BOA/Permit Section
BOA/FOS Region 3
BOA/Source Monitoring Unit File-Springfield
BOA/Source Monitoring Unit File-Des Plaines

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3241
fax: 618 451 3707
email: mafedorenko@uss.com

Michael A. Fedorenko
General Manager

June 18, 2007

CERTIFIED MAIL NO. 7006 2150 0003 0374 7900
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

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AUG 23 2013
REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until July 31, 2007, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

M.A. Fedorenko
General Manager
Granite City Works
U. S. Steel Corporation

jm

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PRODUCTION INCREASE PERMIT

U.S. STEEL CORPORATION
GRANITE CITY WORKS

Application to Modify

Permit No. 95010001

Prepared for

U.S. Steel Corporation Granite City Works
1951 State Street
Granite City, Illinois 62040

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January 29, 2008

URS Corporation
1001 Highlands Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project #20236935.00400

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SECTIONONE Introduction

The United States Steel Corporation Granite City Works (the Facility) is herein making application to modify Permit No. 95010001 known as the Production Increase Permit. The Facility is an integrated iron and steel manufacturing plant located in Granite City, Illinois as seen in **Figure 1-1** Site Location Map. The Facility is a major source as defined by 35 IAC 203.206.

This application to modify is to correct the emission factors used to develop the original application and permit in light of newly identified information on emissions and emission factors. The proposed permit modification will increase SO_2 emission factors for the combustion of BFG and CO and VOM emission factors for the combustion of natural gas. No physical changes to the operations at the facility are proposed. This modification strictly addresses deficiencies in the emission factors used in the original Production Increase Permit application and the Illinois Environmental Protection Agency (IEPA) issued permit (Permit No. 95010001).

This application includes a general facility description below. Section Two includes a discussion of relevant processes at the Granite City Works and the resulting changes to Permit No. 95010001 as a result of the proposed emission factors. Section Three contains a revised emissions analysis for the Production Increase Permit. Section Four includes an analysis of the regulatory requirements resulting from the revised Production Increase Permit emission factors. Section Five includes an updated and revised analysis of Best Available Control Technology (BACT) that takes into account the revised emissions estimates. The revised air quality modeling performed for the Production Increase Permit is presented in Section Six. Section Seven includes the additional impact analysis required as part of a Prevention of Significant Deterioration (PSD) application.

1.1 GENERAL FACILITY DESCRIPTION

The United States Steel – Granite City Works is located in Madison County, Illinois. The largest city near the facility is St. Louis, Missouri, which is located approximately 15 kilometers southwest of the Granite City mill. The latitude and longitude of the mill are approximately 38:41:55 and 90:08:42. The facility occupies approximately 1,100 acres of land in an area primarily used for industrial and agricultural purposes. A site location map is provided in **Figure 1-1**. A site map is provided in **Figure 1-2.**

The United States Steel – Granite City Works is owned and operated by United States Steel Corporation. The responsible official is David Rintoul, General Manager of Granite City Works.

The primary contact for questions regarding this application is Mr. Larry Siebenberger, Manager of Environmental Quality Control. His telephone number is 618-451-3391. The secondary contact for questions regarding this application is Mr. Robert Ribbing who may be reached at 618-451-4026.

The street address for the Facility is:

United States Steel – Granite City Works
1951 State Street
Granite City, Illinois 62040

In general, the Granite City Works receives raw materials by rail and truck, and produces steel coils of various sizes and finishes to meet customer needs. Products are shipped from the mill by rail and truck.

The Standard Industrial Classification (SIC) Code for the facility is 3312.

1.2 PERMITTING HISTORY

The Granite City Works submitted an application for a Clean Air Act Permit Program (CAAPP) permit in February 1996. IEPA is currently preparing the Facility's draft CAAPP Permit. Until the Granite City Works CAAPP permit is finalized the Facility operates under 30 separate operating permits for various units. Relevant operating permits are detailed below.

IEPA Permit Nos. 72080034 and 72080036 limit operations at the "A" and "B" Blast Furnaces, the Blast Furnace Casthouse, the BFG Scrubber and the Iron Spout and Casthouse Baghouses. These two permits allow the injection of intermediate light oil from the By-Products Plant and recycled oil from operations in the plant to be injected into both blast furnaces as alternative carbon sources.

In 1994 Granite City Works obtained a SO_2 Federally Enforceable State Operating Permit (FESOP) for combustion of Coke Oven Gas (COG) in certain fuel combustion units. The SO_2 FESOP (IEPA Permit No. 94120017) limited SO_2 emissions from COG combustion at all COG combustion units. SO_2 ambient air quality modeling for this application is dependent on the SO_2 limits in the SO_2 FESOP.

In late 1994, Granite City Works submitted a PSD permit application for a production increase at the Granite City Works. The Production Increase Permit Application showed the project would result in a significant increase in SO_2 and CO. The project netted out of PSD review for NO_x, PM, PM_{10} and VOC. The Production Increase Permit (IEPA Permit No. 95010001) was issued in 1996. This permit sets SO_2 emission limits for the Casthouse Baghouse (422 tons SO_2 per year), the uncaptured Casthouse Fugitives (21.94 tons SO_2 per year), the Slag Pits (15.83 tons SO_2 per year), and Iron Spout Baghouse (13.89 tons SO_2 per year).

2.1 BLAST FURNACES

The Facility has two blast furnaces, "A" Blast Furnace and "B" Blast Furnace. The blast furnace process is used to transform iron ore into raw molten iron. In the process iron ore, scrap and other metallics, coke and other carbon containing materials, limestone, and other fluxes (referred to as the burden) are loaded into the blast furnace where they slowly descend. Near the bottom of the furnace through the tuyeres, blast air is blown into the furnace and rises up through the burden. Blast air is high temperature air blown into the furnace in high volumes supporting the burden. At times, liquid materials such as oils or natural gas can be injected through the tuyeres with the hot blast as an additional source of carbon.

In the furnace, the hot blast air and the carbon in coke, oils, or natural gas react to form carbon monoxide. In the presence of carbon monoxide, the iron oxide in the iron ore reduces to metallic iron. In general, the reactions occurring in the Blast Furnace are described as follows:

$$Fe_2O_3 + 3\ CO \rightarrow 2\ Fe + 3\ CO_2$$

$$CO_2 + C \rightarrow 2\ CO$$

The result is molten iron, molten slag (calcium oxides and impurities), and a by-product gas rich in carbon monoxide called BFG. The BFG is collected at the top of the Blast Furnace and cleaned in a dust catcher and gas cleaning system. BFG is then utilized as a high volume, low heat content fuel at the Facility. BFG combustion is further described in Section 2.3 below.

Impurities in the Blast Furnace process include silica and sulfur. The majority of these materials are carried out of the process in the slag. Based on recent testing, US Steel estimates that approximately 80 % of the sulfur in the Blast Furnace Burden is bound up in the slag and transferred to the slag pits. Another 8 % of the sulfur remains in the iron and is removed prior to conversion of the iron to steel in the Basic Oxygen Furnace (BOF) Shop. Another 4 % of the sulfur is carried out in the flue dust and is removed by the dust catcher. An additional 8-9 % of the sulfur is removed in the BFG with 4 % being cleaned by the gas cleaning system and 4 to 5 % remaining in the BFG.

2.2 BLAST FURNACE CASTING

Iron and slag are cast through a tap hole drilled in the bottom of the furnace. Molten iron and slag pours through the tap hole into the trough. The iron and slag is separated and then flows through runners in the casthouse floor. Some of the runners are covered to minimize emissions. The runners direct the iron to a spout where the iron is poured into an iron ladle. The iron ladle is transported via train to the steel shop for conversion to steel. This process is called casting.

The molten slag flows through slag runners and is directed to a pit. While in the pit the slag is cooled using a water spray. Cooled slag is loaded via front-end loader to a truck and shipped off-site as a by-product material.

2.3 BLAST FURNACE GAS COMBUSTION

BFG has a low heat content ranging from under 60 to more than 100 million British thermal units per standard cubic foot of gas (MMBtu/scf). At the Granite City Works, BFG is permitted to be combusted in the Blast Furnace Stoves, Boilers 1-12, and the BFG Flare. Any BFG the Facility is unable to combust for usable heat in the Blast Furnace Stoves or Boilers is combusted in the BFG Flare. The Facility does not store or ship BFG off-site.

The BFG collected at the top of the Blast Furnaces is piped to a dust catcher and a gas cleaning system to remove particulate from the BFG. The Blast Furnace Permits (IEPA Nos. 72080034 & 72080036) require the dust removal system remove particulate to less than 0.01 grains per dry standard cubic foot (gr/dscf). After the bulk of the dust is removed, the BFG is piped to various combustion devices in the facility to be used as a fuel.

BFG has small amounts of sulfur bearing compounds that cause the creation of SO_x compounds during combustion. Analysis of BFG fuel samples indicates BFG sulfur levels currently range from 20 to 50 ppmv of sulfur compounds. As described previously, recent testing of the relationship between sulfur in the Blast Furnace burden and sulfur in the BFG indicates that as much as 5 % of the sulfur in the burden ends up in the BFG after the dust cleaning system. Based on typical sulfur levels for the Blast Furnaces, this results in emissions of SO_x of 16 lbs. per MMcf of BFG combusted.

2.4 CHANGES REQUIRED IN THE PRODUCTION INCREASE PERMIT

The Production Increase Permit (IEPA Permit No. 95010001) allows the facility to combust up to 30,800 million cubic feet (MMcf) of BFG per month and 185,030 MMcf of BFG per year resulting in up to 615.22 tons per year of SO_2 from all BFG combustion units. This limitation was based on an emission factor used for an ACME Steel Permit. Based on US Steel's own recent testing, US Steel now believes the ACME Steel emission factor does not accurately represent the nature of SO_2 emissions from BFG combustion at the Granite City Works either now or at the time of the permit issuance.

The ACME Steel SO_2 emission factor was used as the best available estimate of BFG SO_2 emissions available at the time. However, based on recently developed data, the ACME SO_2 factor underestimated both the actual emissions and the proposed emission increase identified in the Production Increase Permit application. Therefore, US Steel seeks to revise the Production

Increase Permit (95010001) to account for US Steel's revised method for calculating the SO_2 emission rate from BFG combustion. This will increase the total allowable emissions of SO_2 on an annual basis from the combustion of BFG in the Production Increase Permit.

In accordance with this request for modification of the Production Increase Permit, US Steel has included a revised calculation of SO_2 emission increases from BFG combustion and a revised analysis of BACT. Revised ambient air quality modeling for the Production Increase Permit Application is presented in Section Six.

3.1 AFFECTED EMISSION UNITS

This application includes emission estimates for the seven (7) BFG combustion sources listed below:

BFG Combustion Sources

- Blast Furnace "A" Stoves
- Blast Furnace "B" Stoves
- Boilers 1-7
- Boilers 8-10
- Boiler 11
- Boiler 12
- Blast Furnace Gas Flare.

These sources will require changes to the BFG Combustion emission limit in the Production Increase Permit (IEPA Permit No. 95010001).

3.2 EMISSION FACTORS / PERMITTED LIMITS

The Production Increase Permit limits SO_2 emissions from the Blast Furnace Casting Sources as well as from the combined combustion of all BFG at the facility. The existing SO_2 limits in the Production Increase Permit are detailed below:

- Casthouse Baghouse — 422 tons SO_2 per year
- Uncaptured Casthouse Fugitives — 21.94 tons SO_2 per year
- Slag Pits — 15.83 tons SO_2 per year
- Iron Spout Baghouse — 13.89 tons SO_2 per year
- BFG Combustion (185,030 MMcf/yr) — 615.22 tons SO_2 per year

As discussed in Section 2.4, US Steel requests to revise the Production Increase Permit emission limits based on recent testing that shows that approximately 5 % of sulfur in the blast furnace burden travels with the BFG through the gas cleaning devices. Based on this calculation method, the Production Increase Permit should have based SO_2 emissions from BFG combustion on an emission factor of 16 lbs. SO_x / MMcf of BFG combusted. This emission factor is representative of the typical sulfur burden in the blast furnaces prior to and after the issuance of the Production Increase Permit.

3.3 EMISSIONS INCREASES

Average actual BFG combustion volumes prior to the Production Increase Permit Application were 121,039 million cubic feet (MMcf). The Production Increase Permit limits the total volume of BFG combustion to 185,030 MMcf. Using the recently calculated emission factor for BFG combustion of 16 lbs. SO_x per MMcf results in a potential emission increase of 511.93 tons SO_x per year from the combustion of BFG. This is the corrected increase for BFG combustion from the original Production Increase Permit Application of which 212.77 tons was previously accounted for in the Production Increase Permit. US Steel believes that the 16 lbs. SO_x per MMcf emission factor used here to develop the revised BFG emission increase should have been used in the 1994 Production Increase Permit and the associated increase has already occurred.

Using the revised emission factor and the permitted BFG consumption rate, the proposed Production Increase Permit limit for BFG combustion emissions of SO_2 is 1,480.24 tons per year.

An analysis of the actual BFG combustion SO_x emissions that have occurred since the Production Increase Permit indicates that the actual emissions increases are much lower than the 511.93 tons of SO_x per year potential increase. In fact, the actual emission increase that has occurred at the Granite City Works is lower than the 212.77 ton per year increase that was permitted in 1995. The table below compares the actual emissions since the Production Increase Permit (PIP) compared to the Pre-Production Increase Permit levels.

CO and VOM emission factors for the combustion of NG identified in the Production Increase Permit are from earlier revisions of AP-42. AP-42 factors for CO and VOM have increased to 84 and 5.5 lbs/MMscf. Based on the NG throughput permit limit in the Production Increase Permit of 1,346 MMscf per year, emissions of CO and VOM would be 56.53 and 3.70 tons per year, respectively. Even without considering baseline emissions, this would not result in a significant increase in either pollutant. Therefore, US Steel requests the permit be modified to include the revised emission factors and new permit limits.

Table 3-1: Revised Analysis of SO_x Emissions Changes Resulting from Production Increase Permit

Analysis Year	BFG Prod. (MMscf)	SO_x Emission Factor (lbs./mmscf)	SO_x Emissions (tpy)	Actual Annual Change from Pre PIP Levels (tpy)
Pre-PIP	121,039	16.00	968.31	Baseline
1997	137,590	16.00	1100.72	132.41
1998	137,165	16.00	1097.32	129.01
1999	128,556	16.00	1028.45	60.14
2000	132,857	16.00	1062.86	94.54
2001	131,058	16.00	1048.46	80.15
2002	134,842	16.00	1078.74	110.42
2003	131,642	16.00	1053.14	84.82
2004	127,539	16.00	1020.31	52.00
2005	127,165	16.00	1017.32	49.01
2006	123,930	16.00	991.44	23.13

Note: BFG Production based on US Steel Granite City Works utility distribution spreadsheet for the years 1997 to 2006.

SECTION FOUR Regulatory Analysis

This section analyzes the federal and state air quality regulations potentially applicable to the Production Increase Permit application being revised. It also includes those regulatory exemptions that make potentially applicable rules inapplicable.

4.1 PRODUCTION INCREASE PERMIT APPLICATION

The change to the BFG combustion SO_2 emission rate in the Production Increase Permit application does not alter the applicable regulatory requirements analyzed in the original application. Based on the revised SO_2 emission increase calculation detailed in Section Three, this application contains all necessary information for a revised PSD analysis of the SO_2 emissions resulting from increased BFG production due to the production increase. As stated in Section One, the information required for the PSD analysis includes the analysis of BACT in Section Five and the additional impact analysis contained in Section Six. Ambient air quality modeling results are presented in Section Six.

Best Available Control Technology (BACT) is defined in 40 CFR 52 Subpart A Paragraph 52.21(b)(12) as an emissions limitation based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case by case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of BACT result in emissions of any pollutant, which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

BACT is required for each regulated pollutant emitted from a major source in excess of significant emission rates. Individual BACT determinations are to be performed for each new or modified emission unit emitting the PSD pollutant. The BACT determination must address, for each regulated pollutant with a significant emission increase at the source, air pollution control technologies capable of reducing emissions of the pollutant.

Preparation of the BACT analysis included in this document incorporates the most recent "top-down" BACT guidance (EPA,1990) by United States Environmental Protection Agency (EPA) for PSD permit determinations. That is, for each pollutant, the most stringent emission limit potentially applicable for a given pollutant was considered and then compared to the proposed project to determine its technical and economic feasibility.

When the most stringent technically feasible emission limitation is not selected as BACT, justification must be provided in terms of adverse economic, environmental, or energy impacts. Several other factors may be considered in justification of rejecting more stringent controls, including:

A showing that utilizing the control would adversely impact the project's financial viability.

A showing that the costs associated with the control are significantly higher for this specific project than for other similar projects that have installed this control system or in general for controlling the pollutant.

A showing that those economic considerations outweigh the energy and environmental benefits.

5.1 SO_2 CONTROL TECHNOLOGY REQUIREMENTS AND APPLICABILITY

The sources of SO_2 emissions impacted by the revised production increase analysis include the Blast Furnace Stoves, the Blast Furnace Flare and Boilers 1 –12.

5.2 INHERENTLY LOWER-EMITTING PROCESSES/PRACTICES

5.2.1 Blast Furnace Gas Combustion Units

Under the Production Increase Permit, increased amounts of BFG combustion were identified as a by-product of the increased production of iron in the blast furnaces. The original Production Increase Permit was based on the BACT analysis showing that BFG is a low sulfur fuel as a result of the natural removal of sulfur in the blast furnace process (see Section Two). The revised estimate of SO_2 concentrations in BFG identified in this application does not alter that finding. BFG is still a low sulfur fuel with concentrations of H_2S on the order of 30 parts per million on a volume basis (ppmv) in the fuel. This is equivalent to less than 0.02 grains of H_2S per dry standard cubic foot of BFG (gr/dscf). For comparison pipeline natural gas (NG) has

sulfur levels of 0.002 gr/scf of NG, raw coke oven gas (COG) has sulfur levels of around 4 gr/dscf and desulfurized COG has sulfur levels of around 0.25 gr/dscf.

Due to the low concentrations of SO_2 and other pollutants in BFG and NG, these fuels are considered clean burning fuels. Although BFG emits higher levels of SO_2 than NG, substituting NG at combustion units burning BFG such as the Blast Furnace Stoves or Boilers results in the combustion of additional BFG at the flare. By combusting BFG at the Blast Furnace Stoves and Boilers in the largest quantities that operating conditions allow, the facility minimizes SO_2 emissions by limiting NG and fuel oil combustion requirements. Therefore, combustion of the BFG in the Blast Furnace Stoves and Boilers is inherently the lowest emitting practice on a plant-wide basis.

5.3 SO_2 CONTROL TECHNOLOGY OPTIONS

When dealing with SO_2 control in combustion devices the most widely utilized add-on controls are fuel sulfur removal technologies and post-combustion SO_2 removal technologies. However, because of the unique nature of BFG, there are no add-on SO_2 control technologies currently in use in the steel industry for SO_2 control at combustion units using process BFG.

In addition to BFG being a low sulfur fuel, BFG is a low Btu fuel (approximately 80 Btu/cubic feet). Because of its low Btu value, large volumes of BFG are necessary to produce the same amount of heat input as higher heat content fuels such as NG or fuel oil. The BFG produced by Granite City Works is produced and consumed in large volumes (approximately 500 MMscf per day at rated capacity) with low concentrations of sulfur compounds and low heat content. The high volume and low Btu value make the processing of this fuel or its exhaust very difficult.

As a result, no known use of fuel sulfur removal technologies have been identified for low sulfur fuels such as BFG. Because of the high volumes and low concentration of H_2S in BFG, the additional removal of fuel sulfur would be prohibitively expensive.

Additionally, due to the low heat value for BFG and the low H_2S concentration of the uncombusted fuel, exhaust gases from BFG combustion typically contain less than fifty (50) ppmv of SO_2. No instances of SO_2 control of exhaust gases has been identified for such low concentrations of SO_2 in stack gases.

Based on a review of the BACT/LAER clearinghouse, information obtained from the U.S. EPA Control Technology Group, and literature from the U.S. EPA Office of Air Quality Planning and Standards, no add-on BACT determination has been made for SO_2 emissions at BFG combustion sources. Due to the low concentrations of H_2S in BFG and SO_2 in combustion stacks, control of SO_2 emissions at BFG combustion units is not practiced in the steel industry.

A review of BACT determinations for other in-plant by-product fuel sources indicates that refinery fuel gas BACT determinations for four (4) refinery fuel gas combustion devices were based on the use of low sulfur fuel with H_2S concentrations of 0.1 gr/dscf or greater. No fuel sulfur removal technologies or post combustion controls were required for these BACT determinations. The refinery by-product fuels permitted in these BACT determinations all have higher fuel sulfur levels than BFG. These BACT determinations are shown in the table below.

Table 5-1: Previous BACT Determinations

RBLC ID	Fuel	Date	SO_2 limit (lb/mmBtu)	Additional Limit Information
TX-0415	Refinery Gas	3/4/1999	0.0035	Refinery gas limit: 160 PPMV hydrogen sulfide
TX-0375	Petro Refinery Gas	3/14/2002	0.025	Low S fuel: fuel gas with H_2S content no more than 0.1 gr/dscf over a 3 hr rolling basis
LA-0166	Refinery Gas	1/10/2002	0.027	Low sulfur refinery fuel gas equivalent to approximately 0.1 gr/dscf based on TX-0375
LA-0149	NG and Refinery Gas	10/21/1999	0.04	Use of low sulfur fuel equivalent to greater than 0.1 gr/dscf based on TX-0375

5.3.1 Infeasible Control Options

The permitted production increase resulted in increased BFG generation and corresponding increased BFG combustion in the BFG combustion sources. BFG and NG are considered clean fuels and are the preferred supplemental fuels for the increased combustion needs based on inherently lower emitting practices.

Because BFG is produced and consumed on-site in the Blast Furnace Stoves, Boilers or in the Blast Furnace Flare, substitution of BFG with a lower sulfur fuel in the Blast Furnace Stoves or Boilers is deemed infeasible. Substituting a lower sulfur fuel such as NG in these units does not reduce BFG combustion at the facility. All BFG produced at the Granite City Works is combusted. Substituting NG for BFG results in additional SO_2 emissions from NG combustion at those units and shifts SO_2 emissions from BFG combustion to the Blast Furnace Flare. Therefore, fuel substitution is considered infeasible.

Because of the high volumes and low concentrations of sulfur compounds in the BFG, fuel sulfur removal is deemed infeasible. No BACT analysis of by-product fuels has determined that fuel sulfur removal is feasible for a fuel sulfur level less than 0.1 gr/dscf. BFG has a fuel sulfur level of less than 0.02 gr/dscf and the removal of sulfur below this level is deemed infeasible.

Post combustion control of SO_2 from BFG combustion is deemed infeasible due to the high exhaust volumes and low SO_2 concentrations in stack gases. Removal of SO_2 at levels below the

existing fifty (50) ppmv could not be accomplished in an economical manner due to the extremely high exhaust volumes.

5.4 SELECTED BACT – SO_2

The BACT selected is the use of the inherently lower emitting practice of combusting BFG to the extent possible at BFG combustion units. No post combustion or fuel sulfur removal technologies are required.

6.1 INTRODUCTION

Under the New Source Review (NSR) process, major stationary sources must demonstrate that undergoing a major modification will not cause or significantly contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS). NSR also requires the source to demonstrate that emissions of specific pollutants such as SO_2 will not deteriorate the existing air quality above incremental amounts established by the Clean Air Act (CAA).

The Prevention of Significant Deterioration (PSD) program is a part of the NSR process that states have implemented for major new and modified sources of air pollution in regions currently in attainment of the NAAQS. An air quality impact assessment is one of the requirements which must be completed in order to receive a PSD permit to modify a source. The air quality analysis presented in this section satisfies the requirements in the Code of Federal Regulation 40 CFR 52.21(k) and 40 CFR 52.21(m).

6.2 HISTORY

The air quality impact assessment for the Production Increase Permit was performed for the SO_2 emission increase plant-wide in the original permit application as required under PSD. That air quality impact assessment has been revised for this application for a permit modification to show that no adverse air quality impacts have occurred or will occur as a result of the revised BFG combustion SO_2 emission rate proposed for the Production Increase Permit. Consequently, this section shows that despite the erroneous SO_2 emission rate identified in the original permit application, the Production Increase Project did not cause or significantly contribute to any exceedance of the NAAQS nor did it result in a deterioration of existing air quality above incremental amounts established by the CAA.

The permit application for the original Production Increase Permit relied in part on extensive dispersion modeling conducted by the Illinois Environmental Protection Agency (IEPA) in and around the Granite City Works (GCW). The purpose of the IEPA modeling was to demonstrate NAAQS attainment for SO_2 and particulate matter. The IEPA modeling successfully demonstrated NAAQS compliance based on Federally Enforceable State Operating Permit (FESOP) SO_2 emission rates for the Granite City Works. SO_2 emission rates included in the Production Increase Permit for the combustion of BFG (IEPA Permit No. 95010001) were no greater than the SO_2 FESOP limits (IEPA Permit No. 94120017) and therefore did not affect the SO_2 attainment demonstration modeling conducted by the IEPA. For this reason, the 1995 Production Increase Permit Application did not need to demonstrate NAAQS attainment for SO_2.

The permit limits included in the SO_2 FESOP limited SO_2 emissions from the combustion of coke oven gas (COG) at each COG combustion unit. Because COG combustion results in higher SO_2 emissions than BFG combustion on an equivalent heat input basis, this permit effectively limited total SO_2 emissions from the facility. Replacing COG with BFG at emission units that burn both COG and BFG results in lower SO_2 emissions from those units because BFG has a much lower sulfur content. Because the Production Increase Permit affected only BFG production and BFG emissions and did not affect COG production or COG emissions, there was no need to repeat the SO_2 FESOP modeling NAAQS demonstration.

Although the revised SO_2 emission rates for BFG combustion in this application are higher than those rates used for developing limits in the Production Increase Permit, the revised BFG SO_2 emission rates are still much lower than the COG SO_2 emission rates on a lb/MMBtu basis. Therefore the BFG SO_2 emission rates will not affect the SO_2 emission limits in the SO_2 FESOP as COG combustion will still result in higher emissions than BFG. However, after preliminary discussions with IEPA, it was determined that a NAAQS demonstration would be required to modify the BFG SO_2 emission limit in addition to a revised PSD Increment analysis. As a result, this section of the application details the NAAQS demonstration and the PSD Increment analysis conducted.

In the discussion below, Granite City Works details the air quality modeling analysis that was conducted to demonstrate that the revised emission rates for the Production Increase Permit will not result in significant contributions to violations of the National Ambient Air Quality Standard nor any deterioration of existing air quality above SO_2 increment levels for Class II areas. The applicable SO_2 NAAQS and Class II area SO_2 increment levels are detailed in Table 6-1 below.

Table 6-1: National Ambient Air Quality Standards for SO_2 ($\mu g/m^3$)

Significance Level Or NAAQS	Averaging Period		
	3-hour	24-hour	Annual
Significance Level	25	5	1
NAAQS	1300	365	80
Class II Increment	512	91	20

6.2.1 Air Quality Analysis

The dispersion model used for assessing the air quality impacts from the facility is the USEPA's AERMOD (version 07026), which is incorporated into Beeline Software's modeling package BEEST (version 9.60a).

The AERMOD model was selected primarily for the following reasons:

- The EPA and IEPA have approved the general use of the model for air quality dispersion analysis because the model assumptions and methods are consistent with those in *Appendix W to Part 51 – Guideline of Air Quality Models* (EPA, 2005).
- The model calculates plume rise as a result of momentum, buoyancy, and variations of wind speed with height.
- Building downwash and wake effects as well as stack tip downwash are calculated and incorporated into the model.
- The AERMOD model is capable of predicting the impacts from stack, area, and volume sources that are spatially distributed over large areas and located in flat or gently rolling terrain.
- The outputs of the AERMOD model are appropriate for addressing compliance with NAAQS and PSD increments.

The model calculates concentrations due to point, area, and volume sources based on using the steady-state Gaussian plume equation for a continuous source in the horizontal and vertical stable conditions, and the non-Gaussian probability density function in the vertical dimension for unstable conditions.

AERMOD operates in three units. The first is AERMET, a meteorological data preprocessor that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts as discussed in Section 1.1. The next is AERMAP, a terrain data preprocessor that incorporates complex terrain using United States Geological Survey (USGS) Digital Elevation Data as discussed in Section 1.2. The final unit, AERMOD, is the air dispersion modeling unit as discussed in Section 1.3.

6.3 METEOROLOGICAL DATA PREPROCESSING

6.3.1 Dispersion Coefficients/Land Use Classification

The surface data collection point, St. Louis Lambert Airport, and the anchor location, US Steel – Granite City Works, are categorized as having urban and rural land characteristics for a 3 km

radius at each site according to *Appendix W to Part 51- Guideline on Air Quality Models* (EPA, 2005). The procedure to determine land-use sectors is described below:

> *Land Use Procedure: (1) Classify the land use within the total area, A_0, circumscribed by a 3 km radius circle about the source using the meteorological land use typing scheme proposed by Auer; (2) if land use types I1, I2, C1, R2, and R3 account for 50 percent or more of A_0, use urban dispersion coefficients; otherwise, use appropriate rural dispersion coefficients.* (Appendix W to Part 51- Guideline on Air Quality Models, USEPA, 2005)

Based on aerial photos, the area surrounding Lambert Airport was classified as possessing urban and rural characteristics. This area is categorized into two sectors. The first sector is to the east-southeast, which includes the runway. The area in this sector has a decreased surface roughness, a medium albedo, and a medium bowen ratio. The second sector appears to be more urban in nature and therefore has a high surface roughness, a medium albedo, and a high bowen ratio.

The basic site characteristics for US Steel – Granite City Works are similar to the Lambert site characteristics and both can be split into two sectors. One sector, to the east-southeast from 105 to 135 degrees, has a decreased surface roughness, a medium albedo, and a medium bowen ratio. The urban land-use albedo values, and the average of the bowen ratio and surface roughness values for urban and cultivated land use were selected for the first wind sector. The second sector was classified as urban with a high surface roughness, a medium albedo, and a high bowen ratio. Urban surface characteristics were selected for the second sector.

Tables 4-1 through 4-3 from the *User's Guide for the AERMOD Meteorological Preprocessor (AERMET)* identify surface characteristics by season. Section 4.7.7 of the guide identifies the seasons as on a latitude and vegetative growing cycle.

> *Spring refers to the period when vegetation is emerging or partially green and applies to the 1-2 months after the last killing frost. The term summer applies to the period when vegetation is lush. The term autumn refers to the period of the year when freezing conditions are common, deciduous trees are leafless, soils are bare after harvest, grasses are brown and no snow is present. Winter conditions apply to snow-covered surfaces and subfreezing temperatures.*

Therefore, the seasons were identified as the following months for the facility:

- Spring: March, April and May
- Summer: June, July, August, and September

- Autumn: October and November
- Winter: December, January and February.

Table 6-2 shows the surface albedo, bowen ratio, and surface roughness for each month and each sector of the 3 km radius from the facility.

Table 6-2: Dispersion Coefficient Input Parameters

Time Frequency	Wind Sector	Surface Albedo	Bowen Ratio	Surface Roughness
January	1	0.35	1.5	0.505
January	2	0.35	1.5	1
February	1	0.35	1.5	0.505
February	2	0.35	1.5	1
March	1	0.14	0.65	0.515
March	2	0.14	1	1
April	1	0.14	0.65	0.515
April	2	0.14	1	1
May	1	0.14	0.65	0.515
May	2	0.14	1	1
June	1	0.16	1.25	0.6
June	2	0.16	2	1
July	1	0.16	1.25	0.6
July	2	0.16	2	1
August	1	0.16	1.25	0.6
August	2	0.16	2	1
September	1	0.16	1.25	0.6
September	2	0.16	2	1
October	1	0.18	1.35	0.525
October	2	0.18	2	1
November	1	0.18	1.35	0.525
November	2	0.18	2	1
December	1	0.35	1.5	0.525
December	2	0.35	1.5	1

6.3.2 Meteorological Data

The *Guideline on Air Quality Models* (EPA, 2005) recommends the use of representative meteorological data for use in air quality modeling from the most recent readily available 5-year period.

Surface meteorological data was retrieved from www.webmet.com for the St. Louis Lambert Airport Weather Station, WBAN 13994, in SCRAM format for the years 1987 to 1991. The station location description is 38.752° latitude and 90.374° longitude.

The St. Louis Lambert Airport Weather Station is approximately 11 miles north northwest of the facility. Because of the proximity, similar terrain, prevailing wind direction, and similar climate of this station compared to the facility, the St. Louis Lambert Airport Weather Station meteorological data is considered representative of meteorological conditions occurring at the facility.

Upper air data was retrieved from www.webmet.com for the Peoria Airport, WBAN 14842, in TD 6201 format for the years 1987 to 1991. The station location description is 40.667° latitude and 89.684° longitude.

Surface meteorological data was reviewed for quality assurance and quality control purposes in accordance with recommendations in the *Guideline on Air Quality Models* (EPA, 2005). Calm wind conditions were observed in the upper air meteorological data, however, no adjustment to wind data is required for the input of surface meteorological data into AERMOD. According to the guideline, "None of the observed wind speeds in a measured wind profile that are less than the threshold speed are used in construction of the modeled wind speed profile in AERMOD."

Meteorological Monitoring Guidance for Regulatory Modeling Applications (EPA, 2000) provides information for the treatment of missing or invalid data. Meteorological data must be 90% complete before substitution of any missing data. AERMET reviewed the surface meteorological variables of dry bulb temperature, wind direction, and wind speed for completeness and exceedance of upper and lower data limits. The surface meteorological data was more than 90% complete for all years and variables reviewed. No variables were missing for the surface meteorological data, however a limited amount of data did exceed upper and lower boundary limits. It was not necessary to treat the data that exceeded upper and lower limits since AERMET flags the data for processing in AERMOD.

AERMET reviewed the upper air meteorological variables of dry bulb temperature, wind speed, and dew point for completeness and exceedance of upper and lower data limits. As part of the QA AERMET also checks for calm winds, zero wind speeds, dew point greater than dry bulb temperature, and unusual (though possibly valid) lapse rates. Several variables were missing for the upper air data. However, the reviewed guidance is not applicable to upper air data, and therefore, missing and invalid upper air data was not treated. AERMET flags the missing and invalid upper air data for processing in AERMOD.

6.4 TERRAIN DATA PROCESSING

Terrain data was obtained in DEM format from Micropath Corporation. This data was selected for use in AERMAP to calculate the base elevations for the sources, buildings, and receptors in UTM coordinates (zone 15 NAD 83 datum). AERMAP also calculates the local terrain maximum for the receptors based on the highest node exceeding the 10% slope from the receptor. The local terrain maximum and the base elevation of the receptor set a Gaussian terrain profile for the AERMOD calculations.

6.5 AERMOD OPTIONS

EPA regulatory default options including final plume rise, stack tip downwash, buoyancy-induced dispersion, default wind profile exponents, default temperature gradients, and calms processing were used for all model runs. The modeling runs were setup to include consideration of potential downwash effects in accordance with the algorithms used in the AERMOD model.

6.5.1 Downwash Considerations

The Building Profile Input Program Plume Rise Model Enhancement (BPIP-Prime) was used to calculate the downwash using wind direction specific building dimensions for the nearby buildings. Downwash considerations take into account air downwash caused by winds hitting nearby buildings and increasing pollutant concentrations near the source.

The building dimensions were obtained from US Steel – Granite City Works facility drawings or measured by Granite City Works personnel. When multiple buildings were in sufficient proximity to each other to create only narrow paths between large building complexes, only one building was modeled with an average building height to keep the complexity of the model to a minimum. Granite City Works provided stack heights.

6.5.2 Receptor Grid

For the AERMOD model runs, the receptor grid consisted of receptors spaced every 50 meters along the fence line of the plant property. In addition, a Cartesian receptor grid with the following spacing was developed:

- 100 meter spaced grid surrounding fenceline out to 400 meters from the east and west fencelines and 200 meters from the north and south fencelines.

- 500 meters spacing from the fenceline out to approximately 3 kilometers (km) from the source.
- 1000 meter spacing from the fenceline out to the distance where the pollutant concentrations continually decrease.

6.6 NAAQS MODELING SOURCE PARAMETERS

6.6.1 U.S. Steel – Granite City Works Sources

Granite City Works' source stack parameters for point sources included in the NAAQS modeling are detailed in Table 6-3. Parameters for area sources included in the NAAQS modeling are detailed in Table 6-4. Stack parameters for each source were identified from previous modeling, engineering calculations, and stack test data as available. Sources venting through roof vents and open pits were modeled as area sources. Stack and area source locations were determined by super-imposing facility drawings on USGS quadrangles and verified using a handheld GPS unit when needed.

The initial modeled SO_2 rates are based on several conservative assumptions. Modeled SO_2 emission rates initially assume COG production is sufficient to meet maximum allowable inputs for all units using COG. It also assumes unlimited BFG production. Short term COG SO_2 emission rates also assume 454 grains H_2S per 100 SCF of COG which is assumed to be worst case non-desulfurized gas. Because of the conservative COG production assumptions, USS has modeled 2.8 times the amount of COG it can produce at maximum coke production levels. The detailed calculation of the emission rates used in the NAAQS demonstration modeling is included as Appendix C.

Table 6-3: Point Source Stack Parameters

Stack No.	Description	Easting (m)	Northing (m)	Base elevation (m)	Stack Height (m)	Stack Temp (K)	Exit Velocity (m/s)	Stack Diameter (m)
BF0007S	BFAStove	749824	4286804	126.5	70.6	533.2	26.8	2.1
BF0011S	BFGFlare	749794	4286836	126.5	45.7	1273.0	20.0	6.1
BF0111S	Newflare	749820	4286852	127.0	46.0	1273.0	20.0	6.0
BF0012S	BFBStove	749682	4286717	126.5	72.0	533.2	18.6	2.7
UT0053S	blrs1to7	749759	4286829	126.5	68.6	460.9	10.1	3.9
UT0054S	blrs8t10	749709	4286787	126.5	61.0	460.9	8.2	2.8
UT0059S	boil11	749885	4286880	126.5	46.9	510.0	21.8	1.9
UT0064S	boil12	749901	4286884	126.5	46.5	510.0	13.7	2.4
BP0097S	COGflare	749983	4286983	126.5	32.0	1273.0	20.0	4.3
CO0071S	BatAfire	750101	4286983	126.0	76.2	529.3	7.2	3.4
CO0092S	BatBfire	750110	4286988	126.0	76.2	529.3	7.2	3.4
FIN0016S	slabfur1	747734	4286764	126.2	27.6	616.5	19.0	2.4
FIN0028S	slabfur4	747701	4286703	126.5	58.5	781.0	18.1	4.2

Table 6-3: Point Source Stack Parameters

Stack No.	Description	Easting (m)	Northing (m)	Base elevation (m)	Stack Height (m)	Stack Temp (K)	Exit Velocity (m/s)	Stack Diameter (m)
FIN0020S	slabfur2	747721	4286747	126.3	27.6	616.5	19.0	2.4
FIN0024S	slabfur3	747707	4286734	126.4	27.4	616.5	19.0	2.4
BF0010S	Csthsbgh	749635	4286730	126.5	9.1	338.7	22.5	3.4
BF0150S	Ironspot	749840	4286813	126.5	19.2	323.7	13.1	2.1
BOF0149S	Ladldryr	748385	4286647	126.6	61.0	460.9	0.0	0.1
CC0084S	slabcut1	748622	4286606	126.5	16.8	460.9	0.0	0.1
CC0145S	slabcut2	748571	4286569	126.5	39.6	460.9	0.0	4.6
CO0069S	BatAPush	750080	4286982	126.0	6.0	326.5	30.3	1.2
CO0090S	BatBPush	750118	4287005	126.0	6.0	326.5	30.3	1.2

Table 6-4: Area Source Model Parameters

Stack No.	Description	Easting m	Northing m	Base Elevation m	Release Height m	Easterly Length m	Northerly Length m	Angle from North degrees	Vertical Dimension m
BF008S	BFAfugit	749710	4286731	126.49	70.62	37.00	4.57	-31.00	0.61
BF0013S	BFBfugit	749765	4286762	126.49	70.62	37.00	4.57	-31.00	0.61
BF0126S	slagpits	749697	4286749	126.49	0.00	101.00	10.00	-31.00	5.00

6.6.2 Illinois Background Sources

IEPA provided two SO_2 background source datasets to USS for inclusion in the NAAQS modeling. One dataset was for short-term modeling and the second dataset contained annualized emission rate data. Some of the data provided by IEPA was in UTM Zone 16 coordinates based on the NAD 27 coordinate datum. Previous modeling data developed for USS sources was based on the contemporary NAD 83 coordinate system using UTM Zone 15 coordinates because the Facility is located in Zone 15. Therefore, all IEPA background sources were changed to Zone 15 coordinates in the NAD 83 coordinate system to coincide with the USS data. The conversions to Zone 15 coordinates were verified using Google Earth when stacks could be identified and adjustments to stack locations were made if appropriate. The Illinois background sources and their short-term and long-term model parameters are detailed in Tables 6-5 and 6-6 below.

Table 6-5: IEPA Short-Term Background Source Data

Stack No.	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
8	747581	4307489	143.3	30.5	394.3	1.2	7.4	49.6
19	817745	4325793	179.8	152.4	449.3	17.3	8.8	93675.9
38	748685	4305573	131.0	106.7	416.5	19.8	4.6	7097.4
39	748685	4305573	131.0	76.2	449.8	15.4	4.7	541.0
40	748685	4305573	131.0	76.2	427.6	8.5	5.2	1924.0
41	770545	4231443	126.2	184.4	426.5	26.8	5.9	34008.7
42	770542	4231383	125.9	184.4	423.7	26.8	5.9	34062.5
44	770543	4231322	125.6	184.4	425.4	26.8	5.9	33488.6
51	705323	4369075	134.1	61.9	322.0	11.9	1.8	1668.0
97	747701	4281167	127.1	10.7	505.4	16.6	0.8	15.1
98	747701	4281167	127.1	10.1	505.4	14.3	0.9	15.1
101	746591	4276418	125.9	30.5	644.3	18.1	0.2	74.2
103	746690	4276292	124.7	14.3	338.7	0.0	0.6	44.2
106	746677	4276387	125.9	44.5	810.9	13.1	0.1	64.0
112	745515	4283326	125.0	13.7	745.9	15.6	4.3	14.9
114	745515	4283326	125.0	9.1	727.6	0.1	0.1	3.4
122	748603	4287235	128.5	14.6	449.8	3.0	0.8	1.6
123	748608	4287240	128.5	14.6	533.2	5.4	1.4	3.2
124	746451	4285723	126.5	18.3	505.4	9.3	0.6	4.4
126	750566	4282318	123.4	6.1	339.3	3.1	1.0	2.4
127	750566	4282318	123.4	7.9	710.9	26.3	0.3	0.7
128	750566	4282318	123.4	7.9	710.9	26.3	0.3	0.7
129	750566	4282318	123.4	7.9	710.9	26.3	0.3	0.7
130	750566	4282318	123.4	6.1	1255.4	17.4	0.2	0.3
131	750566	4282318	123.4	3.1	775.9	26.4	0.1	0.6
147	754993	4302512	135.0	76.2	555.4	9.8	4.6	80.8
148	754991	4302604	135.0	106.7	472.0	11.4	4.6	200.7
149	754991	4302604	135.0	106.7	672.0	1.6	4.6	54.0
150	754578	4302683	135.0	23.8	538.2	10.1	1.0	196.7
151	754991	4302604	135.0	106.7	672.0	14.3	4.6	184.4
152	755178	4302796	135.0	30.5	838.7	9.9	2.1	165.9
153	755073	4303009	135.1	45.7	699.8	7.2	2.3	86.9
155	754394	4303110	135.0	45.7	433.2	6.1	2.0	56.0
156	754394	4303110	135.0	56.4	432.6	6.7	2.4	93.5
157	754578	4302683	135.0	45.7	602.6	8.6	1.3	57.2
158	754495	4302990	135.0	95.1	472.0	10.9	4.3	3953.1
160	754595	4302900	135.0	45.7	649.8	8.0	1.8	120.0
166	754578	4302683	135.0	42.4	504.8	16.2	2.2	2249.1
170	754776	4302505	135.0	45.4	644.3	4.4	1.9	49.4
171	754776	4302505	135.0	54.6	605.4	7.3	1.9	87.4
175	754985	4302789	135.0	40.2	491.5	13.2	2.1	47.7
184	755187	4302487	135.0	45.7	699.8	8.8	2.4	49.0

Table 6-5: IEPA Short-Term Background Source Data

Stack No.	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
185	755187	4302487	135.0	45.7	672.0	8.2	2.4	208.8
186	755187	4302487	135.0	45.7	672.0	4.3	2.4	121.0
193	754991	4302604	135.0	106.7	483.7	0.3	4.6	253.2
196	754495	4302990	135.0	95.1	483.7	0.4	4.3	196.1
208	754578	4302683	135.0	4.9	319.3	4.8	2.7	172.4
209	754598	4302463	133.8	41.5	799.8	7.7	3.2	116.8
210	754581	4302683	135.0	12.2	588.7	14.3	2.3	1553.4
211	754598	4302463	133.8	41.5	799.8	7.7	3.2	118.7
212	754598	4302463	133.8	10.1	294.0	0.1	0.1	57.9
221	762473	4266691	152.5	21.3	505.4	1.4	1.4	58.9
222	746418	4276345	125.9	29.3	315.4	15.2	0.8	630.2
228	747467	4287532	129.3	22.9	463.7	19.8	0.8	1.2
229	746360	4289240	125.9	9.1	294.0	0.1	0.1	1.0
251	748933	4286043	126.8	10.1	455.9	8.2	1.1	17.2
266	747087	4287451	129.2	11.6	394.3	9.3	2.5	4.0
267	747087	4287451	129.2	11.6	394.3	9.3	2.5	4.0
268	747087	4287451	129.2	24.1	672.0	2.2	0.9	1.7
269	747070	4287670	128.6	30.8	394.8	10.6	3.0	0.3
270	747087	4287451	129.2	25.0	535.9	9.6	1.9	0.2
272	754159	4283243	128.3	9.8	388.7	25.5	1.2	36.3

Table 6-6: IEPA Long-Term Background Source Data

Stack No.	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (g/s)
19	817745	4325793	179.8	152.4	449.3	17.3	8.8	7305.5
38	748685	4305573	131.0	106.7	416.5	19.8	4.6	818.4
39	748685	4305573	131.0	76.2	449.8	15.4	4.7	20.9
40	748685	4305573	131.0	76.2	427.6	8.5	5.2	230.5
41	770545	4231443	126.2	184.4	426.5	26.8	5.9	4026.6
42	770542	4231383	125.9	184.4	423.7	26.8	5.9	3703.8
44	770543	4231322	125.6	184.4	425.4	26.8	5.9	4207.8
51	705323	4369075	134.1	61.9	322.0	11.9	1.8	189.4
101	746591	4276418	125.9	30.5	644.3	18.1	0.2	9.3
103	746690	4276292	124.7	14.3	338.7	0.0	0.6	5.6
106	746677	4276387	125.9	44.5	810.9	13.1	0.1	8.0
112	745515	4283326	125.0	13.7	745.9	15.6	4.3	1.9
122	748596	4287435	128.5	14.6	449.8	3.0	0.8	0.0
123	748601	4278440	128.5	14.6	533.2	5.4	1.4	0.0
124	746451	4285723	126.5	18.3	505.4	9.3	0.6	0.6

Table 6-6: IEPA Long-Term Background Source Data

Stack No.	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (g/s)
126	750566	4282318	123.4	6.1	339.3	3.1	1.0	0.3
127	750566	4282318	123.4	7.9	366.5	26.3	0.3	0.1
128	750566	4282318	123.4	7.9	699.8	26.3	0.3	0.1
129	750566	4282318	123.4	7.9	699.8	26.3	0.3	0.1
130	750566	4282318	123.4	6.1	1255.4	7.3	0.2	0.0
131	750566	4282318	123.4	3.1	775.9	26.4	0.1	0.1
147	754993	4302512	135.0	76.2	555.4	9.8	4.6	10.2
148	754991	4302604	135.0	106.7	472.0	11.4	4.6	25.2
149	754991	4302604	135.0	106.7	672.0	1.6	4.6	6.8
150	754578	4302683	135.0	23.8	538.2	10.1	1.0	24.7
151	754991	4302604	135.0	106.7	672.0	14.3	4.6	23.2
152	755178	4302796	135.0	30.5	838.7	9.9	2.1	20.8
153	755073	4303009	135.1	45.7	699.8	7.2	2.3	10.9
155	754394	4303110	135.0	45.7	433.2	6.1	2.0	7.0
156	754394	4303110	135.0	56.4	432.6	6.7	2.4	11.8
157	754578	4302683	135.0	45.7	602.6	8.6	1.3	7.2
158	754495	4302990	135.0	95.1	472.0	10.9	4.3	496.7
160	754595	4302900	135.0	45.7	649.8	8.0	1.8	15.1
166	754578	4302683	135.0	42.4	504.8	16.2	2.2	138.4
170	754776	4302505	135.0	45.4	644.3	4.4	1.9	6.2
171	754776	4302505	135.0	54.6	605.4	7.3	1.9	11.0
175	754985	4302789	135.0	40.2	491.5	13.2	2.1	6.0
184	755187	4302487	135.0	45.7	699.8	8.8	2.4	6.2
185	755187	4302487	135.0	45.7	672.0	8.2	2.4	26.2
186	755187	4302487	135.0	45.7	672.0	4.3	2.4	15.2
193	754991	4302604	135.0	106.7	483.7	0.3	4.6	31.8
196	754495	4302990	135.0	95.1	483.7	0.4	4.3	56.2
208	754578	4302683	135.0	4.9	319.3	4.8	2.7	21.7
209	754598	4302463	133.8	41.5	799.8	7.7	3.2	14.7
210	754581	4302683	135.0	12.2	588.7	14.3	2.3	178.1
211	754598	4302463	133.8	41.5	799.8	7.7	3.2	14.9
212	754598	4302463	133.8	10.1	294.0	0.1	0.1	7.3
222	746418	4276345	125.9	29.3	315.4	15.2	0.8	76.1
228	747467	4287532	129.3	22.9	463.7	19.8	0.8	0.2
229	746360	4289240	125.9	9.1	294.0	0.1	0.1	0.1
266	747087	4287451	129.2	11.6	394.3	9.3	2.5	0.4
267	747087	4287451	129.2	11.6	394.3	9.3	2.5	0.4
268	747087	4287451	129.2	24.1	672.0	1.4	0.9	0.2
269	747070	4287670	128.6	30.8	394.8	10.6	3.0	0.0
270	747087	4287451	129.2	25.0	535.9	9.6	1.9	0.0

6.6.3 Missouri Background Sources

Missouri background sources were requested from the Missouri Department of Natural Resources (MDNR). MDNR provided information on background sources in the out-state regions, however, MDNR indicated that modeling data on sources in the city and county of St. Louis would have to be provided separately by St. Louis City and St. Louis County. USS requested that St. Louis City and St. Louis County provide background and increment consuming SO_2 sources for PSD modeling and received only information on background sources. Background sources for St. Louis City and St. Louis County were then reviewed to screen out sources which did not meet IEPA's 10d=Q screening criteria.

The stack locations were verified using Google Earth when stacks could be identified and adjustments to stack locations were made if appropriate. Background sources located in the City of St. Louis meeting the IEPA screening criteria are shown in Table 6-7 below along with model data for both short term and long term averaging periods.

Table 6-7: City of St. Louis Background Source Data

Stack No.	Plant Name	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
M0000381	AB	742763	4275613	147.0	6.1	422.0	21.3	0.3	195.4
M0003151	AB	742763	4275613	147.0	53.3	373.7	9.3	2.0	0.0
M0003S15	AB	742763	4275613	147.0	53.3	373.7	9.3	2.0	63.8
M0003S05	AB	742763	4275613	147.0	68.6	449.8	5.6	3.0	115.3
M0003S01	AB	742763	4275613	147.0	68.6	438.7	6.5	3.0	974.5
M0003S02	AB	742763	4275613	147.0	68.6	460.9	5.8	3.0	1145.6
M0003S3A	AB	742763	4275613	147.0	22.9	449.8	143.7	0.9	155.2
M000305B	AB	742763	4275613	147.0	68.6	449.8	5.6	3.0	117.7
M0017F1	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	0.0
M0017F1A	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	1.5
M0017238	Mallinckrodt	744174	4283340	129.0	4.9	298.2	0.0	0.1	1.4
M001738A	Mallinckrodt	744174	4283340	129.0	4.9	298.2	0.0	0.1	0.0
M0017X3	Mallinckrodt	744174	4283340	129.0	13.7	338.7	21.3	0.6	0.0
M0017X2	Mallinckrodt	744174	4283340	129.0	13.7	338.7	21.3	0.6	0.0
M0017C02	Mallinckrodt	744174	4283340	129.0	27.4	522.0	4.1	1.5	59.8
M0017514	Mallinckrodt	744174	4283340	129.0	30.5	335.9	19.1	1.4	0.0
M0017F1D	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	0.0
M001751A	Mallinckrodt	744174	4283340	129.0	30.5	335.9	19.1	1.4	0.0
M0017C2A	Mallinckrodt	744174	4283340	129.0	27.4	522.0	4.1	1.5	0.2
M0017507	Mallinckrodt	744174	4283340	129.0	24.4	294.3	18.6	0.3	0.0
M0017X1	Mallinckrodt	744174	4283340	129.0	13.7	338.7	21.3	0.6	0.0
M0017F1C	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	3.0
M0017Z02	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	1.5

Table 6-7: City of St. Louis Background Source Data

Stack No.	Plant Name	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
M0017260	Mallinckrodt	744174	4283340	129.0	3.1	691.5	0.0	0.1	1.8
M0017250	Mallinckrodt	744174	4283340	129.0	13.1	298.2	2.5	0.0	0.2
M0017C01	Mallinckrodt	744174	4283340	129.0	33.5	560.9	5.6	1.5	0.0
M001750A	Mallinckrodt	744174	4283340	129.0	24.4	294.3	18.6	0.3	0.0
M001750B	Mallinckrodt	744174	4283340	129.0	24.4	294.3	18.6	0.3	0.0
M0017UNK	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	1.5
M0017UNB	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	1.2
M0017C3B	Mallinckrodt	744174	4283340	129.0	53.3	427.6	1.1	2.7	116.4
M0017G02	Mallinckrodt	744174	4283340	129.0	0.3	422.0	0.0	0.0	0.8
M00386	Trigen	749013	4280218	129.0	54.9	444.3	2.6	3.2	207.2
M00385	Trigen	749013	4280218	129.0	56.7	444.3	2.6	4.0	173.4
M0038003	Trigen	749013	4280218	129.0	56.7	444.3	2.6	4.0	207.2
M00405	WashU	783300	4279600	165.0	21.0	440.9	15.6	1.1	17.0
M00401	WashU	783300	4279600	165.0	67.1	435.4	1.1	2.3	18.1
M00401A	WashU	783300	4279600	165.0	67.1	435.4	1.1	2.3	20.7
M00402	WashU	783300	4279600	165.0	53.3	455.4	3.5	2.7	31.6
M0053006	Bisselpoint	743527	4286283	130.0	21.0	449.8	10.8	1.2	0.0
M0053008	Bisselpoint	743527	4286283	130.0	6.7	422.0	3.7	0.7	0.0
M0053	Bisselpoint	743527	4286283	130.0	0.3	422.0	0.0	0.0	0.0
M0053001	Bisselpoint	743527	4286283	130.0	68.6	310.9	3.4	3.7	2.2
M0053007	Bisselpoint	743527	4286283	130.0	3.1	294.3	0.0	0.0	0.0
M0053009	Bisselpoint	743527	4286283	130.0	7.3	449.8	0.0	0.3	0.0
M005300A	Bisselpoint	743527	4286283	130.0	68.6	310.9	3.4	3.7	8.5
M0053004	Bisselpoint	743527	4286283	130.0	20.4	449.8	5.4	2.4	0.0
M005304A	Bisselpoint	743527	4286283	130.0	20.4	449.8	5.4	2.4	0.0
M005301A	Bisselpoint	743527	4286283	130.0	68.6	310.9	3.4	3.7	1.6
M005301B	Bisselpoint	743527	4286283	130.0	68.6	310.9	3.4	3.7	31.7
M005301C	Bisselpoint	743527	4286283	130.0	68.6	310.9	3.4	3.7	1.0
M005304B	Bisselpoint	743527	4286283	130.0	20.4	449.8	5.4	2.4	0.0
M005301D	Bisselpoint	743527	4286283	130.0	68.6	310.9	3.4	3.7	1.3
M0056S2	VA Medical Center	740795	4280645	158.0	15.2	410.9	10.7	0.6	26.4
M0056S3	VA Medical Center	740795	4280645	158.0	15.2	410.9	10.7	0.6	26.4
M007096	Astaris	737988	4270069	125.0	12.8	444.3	11.5	1.2	96.4
M007013	Astaris	737988	4270069	125.0	17.1	477.6	4.9	1.2	68.1
M00871	St. Louis State Hospital	736929	4276364	177.0	70.1	552.6	0.0	2.1	48.8
M00872	St. Louis State Hospital	736929	4276364	177.0	70.1	552.6	0.0	2.1	51.7
M0096NA	The PD George Co.	743180	4284976	128.0	0.3	422.0	0.0	0.0	0.0

Table 6-7: City of St. Louis Background Source Data

Stack No.	Plant Name	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
M009637	The PD George Co.	743180	4284976	128.0	10.7	365.9	1.8	0.5	0.0
M009620S	The PD George Co.	743180	4284976	128.0	0.3	422.0	0.0	0.0	0.0
M02003	St. Alexius Hospital	741572	4274960	159.0	3.1	422.0	0.0	1.5	0.8
M0204	BJC	737962	4279881	153.0	28.4	477.6	0.6	1.8	61.7
M020401	BJC	737962	4279881	153.0	61.0	405.4	5.4	0.9	66.1
M0204A	BJC	737962	4279881	153.0	28.4	477.6	0.6	1.8	135.0
M0391S12	Hermann Oak Leather Co.	743650	4284000	162.0	3.7	422.0	0.0	0.5	0.0
M0391	Hermann Oak Leather Co.	743650	4284000	162.0	0.3	422.0	0.0	0.0	0.0
M0391S8	Hermann Oak Leather Co.	743650	4284000	162.0	9.1	422.0	0.0	0.8	0.0
M0391S7	Hermann Oak Leather Co.	743650	4284000	162.0	0.3	422.0	0.0	0.0	0.0
M0391S6	Hermann Oak Leather Co.	743650	4284000	162.0	0.3	422.0	0.0	0.0	0.0
M0391S5	Hermann Oak Leather Co.	743650	4284000	162.0	11.6	422.0	17.6	0.5	0.0
M08093	PQ Corporation	739205	4285226	147.0	16.8	672.0	3.4	1.3	28.2
M13632	National Linen Service	745124	4276024	131.0	11.3	449.8	7.8	0.9	25.3
M13631	National Linen Service	745124	4276024	131.0	11.3	449.8	7.8	0.9	25.7
M15051	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	62.9
M15051A	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	26.0
M15051B	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	28.3

Table 6-7: City of St. Louis Background Source Data

Stack No.	Plant Name	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
M15051C	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	62.3
M15051D	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	62.3
M15051E	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	66.0
M15051F	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	26.0
M15051G	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	62.3
M15051H	The Energy Center, SLU MS	740405	4278327	153.0	67.1	422.0	30.5	1.5	26.0
M15051I	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	28.3
M15051J	The Energy Center, SLU MS	740405	4278327	153.0	67.1	449.8	30.5	1.5	68.1
M17611	Nestle Purina Petcare Company	743952	4277911	147.0	24.4	466.5	0.0	0.6	26.1
M2013S2	Midco Industries, Inc.	740474	4279247	147.0	2.4	422.0	62.2	0.2	227.8
M2501	Metro Materials, Inc.	744309	4284455	147.0	0.3	422.0	0.0	0.0	0.0
M2802S1	SSM Cardinal Glennon Children's Hospital	738930	4278275	153.0	12.2	366.5	0.0	0.9	69.4

Background sources located in St. Louis County meeting the IEPA screening criteria are shown in Table 6-8 below along with model data for both short term and long term averaging periods. The stack locations were verified using Google Earth when stacks could be identified and adjustments to stack locations were made if appropriate.

Table 6-8: County of St. Louis Background Source Data

Stack No.	Plant Name	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
MO00101	Ameren UE	732717	4253746	125.0	76.2	422.0	27.3	3.4	1458.2
MO00102	Ameren UE	732717	4253746	125.0	76.2	422.0	27.3	3.4	1445.5
MO00103	Ameren UE	732717	4253746	125.0	106.7	422.0	30.8	4.3	2975.4
MO00104	Ameren UE	732717	4253746	125.0	106.7	422.0	33.2	4.9	3471.3
MO00106	Ameren UE	732717	4253746	125.0	9.8	366.5	31.6	3.7	455.3
MO0001525	Ford	729612	4294972	162.0	22.3	422.0	1.5	2.3	127.2
MO0001526	Ford	729612	4294972	162.0	22.3	422.0	1.5	2.3	127.2
MO00231	Ameren UE	713307	4284244	134.0	9.8	422.0	2.5	2.7	373.7
MO0042H1	Wash U	733589	4281264	165.0	53.3	422.0	1.5	2.7	16.9
MO0042H2	Wash U	733589	4281264	165.0	19.2	422.0	12.0	0.9	16.9
MO0042H3	Wash U	733589	4281264	165.0	14.9	422.0	9.0	0.6	16.9
MO004232	Wash U	733589	4281264	165.0	14.9	422.0	9.0	0.6	16.9
MO004233	Wash U	733589	4281264	165.0	14.9	422.0	9.0	0.6	16.9
MO0042H5	Wash U	733589	4281264	165.0	15.2	422.0	1.8	0.8	16.9
MO00651A	Lambert	727630	4292359	165.0	8.5	422.0	6.8	1.2	26.5
MO00651B	Lambert	730191	4290777	165.0	10.1	422.0	6.8	1.2	20.9
MO00652C	Lambert	727630	4292359	165.0	8.5	422.0	4.4	1.2	26.5
MO00652D	Lambert	730191	4290777	165.0	10.1	422.0	3.8	1.2	20.9
MO00653E	Lambert	727630	4292359	165.0	8.5	422.0	7.4	1.2	26.5
MO00653F	Lambert	730191	4290777	165.0	10.1	422.0	6.8	1.2	20.9
MO023001	Boeing	728612	4293255	165.0	24.7	422.0	11.8	0.8	53.5
MO023002	Boeing	728612	4293255	165.0	24.7	422.0	11.8	0.8	53.5
MO10291	DePaul Hospital	708045	4251188	135.0	13.7	422.0	6.7	0.9	572.4
MO129901	IBM	728564	4294449	165.0	9.1	366.5	48.9	0.5	56.9
MO129902	IBM	728564	4294449	165.0	9.1	366.5	48.9	0.5	56.9
MO129903	IBM	728564	4294449	165.0	9.1	366.5	48.9	0.5	56.9
MO129904	IBM	728564	4294449	165.0	9.1	366.5	48.9	0.5	56.9
MO129905	IBM	728564	4294449	165.0	9.1	366.5	48.9	0.5	56.9
MO129907	IBM	728564	4294449	165.0	0.6	366.5	48.9	0.5	56.9

The MDNR provided background source data was identified as for both short term and long term averaging periods. The MDNR background source model parameters are detailed in Table 6-9 below.

Table 6-9: Missouri Background Source Data

Stack No.	Plant Name	Easting (m)	Northing (m)	Base elev. (m)	Stack Height (m)	Stack Temp. (K)	Exit Velocity (m/s)	Stack Diam. (m)	SO_2 Hourly (lb/hr)
HERCP8	Doe Run 8	729600	4237680	125.0	167.6	350.4	17.7	6.1	10714.5
AMRIP1	Ameren Rush Island	739688	4223980	117.3	213.4	405.3	25.0	8.8	3799.3
AMRIP2	Ameren Rush Island	739688	4223980	117.3	76.2	577.5	7.6	1.5	3737.4
AMLAS1	Labadie	688436	4270455	148.0	213.4	444.2	28.0	6.2	3580.1
AMLAS2	Labadie	688436	4270455	148.0	213.4	444.2	28.0	6.2	3599.9
AMLAS3	Labadie	688436	4270455	148.0	213.4	444.2	28.0	6.2	3609.1
AMLAS4	Labadie	688436	4270455	148.0	213.4	444.2	28.0	6.2	3551.5
AMSPS1	Ameren Sioux	734264	4309907	130.0	182.9	427.5	29.3	5.8	8022.4
AMSPS2	Ameren Sioux	734264	4309907	130.0	182.9	427.5	29.3	5.8	7544.3
AMSPS3	Ameren Sioux	734264	4309907	130.0	64.6	435.9	15.2	1.4	84.0
MLC1	Mississippi Lime	756750	4205955	205.5	38.1	505.0	10.3	2.1	84.9
MLC2	Mississippi Lime	756750	4205955	205.5	38.1	505.0	10.3	2.1	84.9
MLC3	Mississippi Lime	756750	4205955	205.5	38.1	505.0	10.3	2.1	84.9
MLC4	Mississippi Lime	756750	4205955	205.5	38.1	505.0	10.3	2.1	84.9
GST700	GM	689495	4298990	128.0	76.2	458.1	0.1	3.0	653.3
HLCM049	Kiln	740331	4221466	128.6	158.5	384.2	14.0	5.6	595.2
HLCM115	Coal mill	740331	4221475	128.6	158.5	384.2	14.0	1.0	99.2

6.7 BACKGROUND SO_2 CONCENTRATIONS

Background SO_2 concentrations were developed from USEPA monitoring data available from the USEPA AirData website. Background SO_2 concentrations are based on average values for the second highest monitored 3-hour and 24-hour values over the 2004-2006 period from a monitoring site located in Wood River, IL (54 N. Walcott). Background for the annual averaging period was also determined from the mean annual concentrations for 2004-2006 at this monitor.

This location was chosen due to its proximity to Granite City, Il. Other potential monitoring sites which were excluded from use included the Wood River site at 1710 Vaughn Rd., South Roxana, IL (Michigan St.), the Granite City site and the East St. Louis Site. The Vaughn Rd. Wood River site was excluded due to its location to the north of a major petroleum refinery.

Likewise, the Michigan St. South Roxana site was not used to develop background SO_2 concentrations due to its location southeast of the same refinery. Because winds in the St. Louis region are predominantly out of the south and the west, these locations are largely downwind from the refinery. Therefore, the refinery is believed to affect the monitor values at these locations. Additionally, the refinery sources were included in the background sources supplied by IEPA. They were therefore included in the modeling and inclusion of these monitors to develop background concentrations may result in double counting resultant concentrations. The Granite City monitoring site was not chosen because that site was discontinued in 2001. The East St. Louis monitoring site was not chosen as it is believed to be influenced by a zinc refinery and chemical plants to the south which have been included in the background sources for the modeling.

The relevant monitor values and the resultant background values are shown in Table 6-10.

Table 6-10: Background Monitor Values and Proposed Background Values

Monitor Location	Year of Data	Monitor Values (ppm)		
		3-hr (high)	24-hr (High)	Annual Mean
54 N. Walcott	2004	0.041	0.018	0.004
54 N. Walcott	2005	0.052	0.016	0.004
54 N. Walcott	2006	0.037	0.011	0.003
Average		0.046	0.015	0.004
Background ($\mu g/m^3$)		119	40	11
Standard ($\mu g/m^3$)		1300	365	80

6.8 NAAQS MODELING RESULTS

The detailed results of each of the model runs are included in the sections below. USS GCW was able to meet SO_2 and NAAQS results for all three averaging periods.

6.8.1 NAAQS 3-Hour Averaging Period Model Results

The modeling was split into two runs in order to improve model run time. The near-field modeling contained the 100m and 500m grids described in section 6.5.2. The far-field modeling contained the 1000m grids described in section 6.5.2.

The results of the 3-hour model runs indicate that the Facility will not cause or significantly contribute to an exceedance of the 3-hour SO_2 ambient air quality standard when Slab Furnace 4 (Stack No. FIN0028s) is limited to 1,800 lbs. / 3-hours.

Using the conservative emission rate assumptions discussed in section 6.6.1 modeling of the 3-hour averaging period resulted in three receptors in the far-field receptor grid exceeding the 3-hour SO_2 NAAQS standard (1300 $\mu g/m^3$) in one or more years.

The model was run again with only the offending receptors. Each year was modeled individually in order to run the Events Model within AERMOD. The Events Model tracks any violation of a user-defined threshold concentration at any receptor, and then calculates individual contributions from each source to that violation, or "event." In this case the threshold was set at 1181 $\mu g/m^3$ (3-hour NAAQS standard of 1300 $\mu g/m^3$ minus background).

The Events Model output includes the contributions from each GCW source to each event. These contributions were summed to compare to the significance level. The significance level for the 3-hour NAAQS standard is 25 $\mu g/m^3$. Results of the 3-hour events modeling show no event had a GCW contribution greater than the significance level. Results from the 3-hour modeling are shown in Table 6-11.

Table 6-11: 3-hour Model Results ($\mu g/m^3$)

Year	Model Results High 2nd High	H2H with Background	NAAQS	Highest GCW Contribution to an Exceedance	Significance Level
1991	1877	1996	1300	< 1	25
1990	1876	1995	1300	< 1	25
1989	1961	2080	1300	< 1	25
1988	1915	2034	1300	< 1	25
1987	1953	2072	1300	< 1	25

6.8.2 24-Hour Averaging Period Model Results

The modeling was split into two runs in order to improve model run time. The near-field modeling contained the 100m and 500m grids described in section 6.5.2. The far-field modeling contained the 1000m grids described in section 6.5.2.

Using the conservative emission rate assumptions discussed in section 6.6.1, initial modeling of the 24-hour average SO_2 concentrations resulted in 15 receptors in the far-field grid violating the 24-hour NAAQS standard in one or more of the five years modeled. The model was run again with 500m grids around the offending receptors, resulting in 73 receptors. Each year was modeled individually in order to run the Events Model. In this case the threshold was set at 324 $\mu g/m^3$ (24-hour NAAQS standard of 365 $\mu g/m^3$ minus background). These initial results are presented in Table 6-12.

Table 6-12: Initial 24-hour Model Results ($\mu g/m^3$)

Year	Model Results High 2nd High	H2H with Background	NAAQS
1991	1305.3	1345.3	365
1990	1167.3	1207.3	365
1989	1115.2	1155.2	365
1988	1177.3	1217.3	365
1987	1240.1	1280.1	365

The Events Model output includes the contributions from each Granite City Works source to each event. These contributions were summed to compare to the significance level. The significance level for the 24-hour NAAQS standard is 5 $\mu g/m^3$. Reviewing the results of the 24-hour events model shows that of the 73 receptors exceeding NAAQS, 15 receptors had GCW contributions exceeding the significance level during events that exceeded the NAAQS standard.

Because initial modeling using the overly conservative assumptions described in section 6.6.1 resulted in modeling exceedances, USS developed less conservative assumptions for additional model runs. Additional model runs for the 24-hour averaging period were developed to remove the overly conservative assumption of unlimited COG availability. Because USS wishes to maintain the ability to shift COG to any unit modeling must show the worst case impacts from COG fuel use at this facility. In order to show the worst case impacts, four scenarios were developed, each containing the maximum potential COG production over a 24-hour period of 31.5 MMscf of COG. All four scenarios operate the coke oven batteries (A and B) at maximum COG underfire because this is necessary for maximum COG production. Scenario 1 diverts the remaining COG to the blast furnace stoves and the ladle dryer. Scenario 2 apportions the remaining COG to boilers 1-10. Scenario 3 distributes COG to the slab furnaces. Scenario 4 sends the remaining COG to boilers 11 and 12. The highest SO_2 emissions occur in scenario 3 because it maximizes BFG usage and minimizes NG usage (COG is approximately constant over the four scenarios). Since BFG has a higher sulfur contents than NG this results in the highest emissions. The emissions scenarios are presented in Table 6-13 (a) – (d).

Table 6-13: Emissions Scenarios for GCW Facility

(a) Scenario 1

Scenario 1	COG mmcf/day	BFG mmcf/day	NG mmcf/day
BFAStove	8.04	63.43	
BFGFlare		216.00	
BFGFlare2		216.00	
BFBStove	8.04	80.83	
blrs1to7		126.00	
blrs8to10		54.00	
boil11		67.50	
boil12		67.50	
COGflare			
BatAfire	7.50		
BatBfire	7.50		
slabfur1			7.73
slabfur4			9.12
slabfur2			7.73
slabfur3			7.73
Csthsbgh			
Ironspot			
Ladldryr	2.27		1.13
slabcut1			0.01
slabcut2			0.01
total:	33.34	891.27	33.45

(b) Scenario 2

Scenario 2	COG mmcf/day	BFG mmcf/day	NG mmcf/day
BFAStove		119.70	
BFGFlare		216.00	
BFGFlare2		216.00	
BFBStove		137.10	
blrs1to7	11.54	45.19	
blrs8to10	4.95	19.37	
boil11		67.50	
boil12		67.50	
COGflare			
BatAfire	7.5		
BatBfire	7.5		
slabfur1			7.73
slabfur4			9.12
slabfur2			7.73
slabfur3			7.73
Csthsbgh			
Ironspot			
Ladldryr			2.40
slabcut1			0.01
slabcut2			0.01
total:	31.49	888.36	34.72

(c) Scenario 3

Scenario 3	COG mmcf/day	BFG mmcf/day	NG mmcf/day
BFAStove		119.70	
BFGFlare		216.00	
BFGFlare2		216.00	
BFBStove		137.10	
blrs1to7		126.00	
blrs8to10		54.00	
boil11		67.50	
boil12		67.50	
COGflare			
BatAfire	7.5		
BatBfire	7.5		
slabfur1	2.6		6.25
slabfur4	9.7		3.71
slabfur2	2.6		6.25
slabfur3	2.6		6.25
Csthsbgh			
Ironspot			
Ladldryr			2.40
slabcut1			0.01
slabcut2			0.01
total:	32.58	1003.80	24.87

(d) Scenario 4

Scenario 4	COG mmcf/day	BFG mmcf/day	NG mmcf/day
BFAStove		119.70	
BFGFlare		216.00	
BFGFlare2		216.00	
BFBStove		137.10	
blrs1to7		126.00	
blrs8to10		54.00	
boil11	8.37	8.93	
boil12	8.37	8.93	
COGflare			
BatAfire	7.50		
BatBfire	7.50		
slabfur1			7.73
slabfur4			9.12
slabfur2			7.73
slabfur3			7.73
Csthsbgh			
Ironspot			
Ladldryr			2.40
slabcut1			0.01
slabcut2			0.01
total:	31.73	886.77	34.72

The model was put through four more iterations, each representing one of these GCW emissions scenarios. Results from modeling with 500m resolution grids around offending receptors were analyzed to identify which receptors had events with both a NAAQS exceedance and a GCW contribution greater than significance. This narrowed the receptor grid down to 15 receptors for the scenario modeling. Each year and each scenario were modeled, utilizing the Events Model to obtain individual source contributions for every exceedance of the NAAQS standard. Source contributions from all GCW emissions units were summed for each exceedance in each scenario. Scenario modeling results are presented in Table 6-14.

Table 6-14: 24-hour Scenario Modeling Results – Maximum GCW Contribution to NAAQS Exceedance Events (μg/m³)

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4
1991	3.2	3.1	3.3	3.3
1990	4.1	3.9	4.3	4.5
1989	2.8	2.8	2.9	2.9
1988	2.7	2.6	3.0	2.9
1987	3.7	3.6	3.3	4.1

Even though there are receptors which violate the NAAQS standard, using these emission scenarios the GCW facility does not have a contribution to those exceedances beyond the designated significance level.

6.8.3 Annual Averaging Period Model Results

The modeling was split into two runs in order to improve model run time. The near-field modeling contained the 100m and 500m grids described in section 6.5.2. The far-field modeling contained the 1000m grids described in section 6.5.2.

Modeling of the far receptor grid in the annual averaging period results in eight receptors exceeding the standard of 80 μg/m³. At each receptor exceeding the annual standard the GCW contribution was compared to the significance level of 1 μg/m³. GCW source contributions at all offending receptors remain less than the significance level. A summary of annual average modeling results is presented in Table 6-15.

Table 6-15: Annual Average Model Results (μg/m³)

Year	Annual average	Annual average with background	NAAQS	GCW Contribution	Significance Level
1991	188	199	80	< 1	1
1990	185	196	80	< 1	1
1989	201	212	80	< 1	1
1988	209	220	80	< 1	1
1987	208	219	80	< 1	1

6.9 INCREMENT MODELING SOURCE PARAMETERS

Granite City Works' source emissions in the increment modeling are based on the incremental increase in emissions from the pre-Production Increase Permit SO_2 emission levels. The Production Increase Permit resulted in increases in SO_2 emissions from four (4) process sources. These sources were the Casthouse Baghouse, the Blast Furnace Casthouse uncaptured roof fugitives, the slag pits, and the Iron Spout Baghouse. Each of these sources saw incremental increases in SO_2 emissions as a result of the Production Increase Permit and was included in the increment modeling. Because these process sources are not affected by the revised emission factor, they were modeled using the same incremental emission rates as were modeled originally.

For BFG combustion sources affected by the increase in BFG production and the revised emission factor, emission rates were based on the difference between emissions at the revised BFG combustion SO_2 emission rate and the pre-Production Increase Permit BFG combustion levels. Under the Production Increase Permit, BFG combustion is limited to 185,030 MMcf per year. At the revised emission rate of 16.00 lbs. SO_2 per MMscf, 185,030 MMscf per year equates to 337.95 lbs. SO_2 per hour for 8,760 hours. At the pre-Production Increase Permit BFG combustion levels of 121,039 MMcf per year and the revised SO_2 emission rate, SO_2 emissions were 221.08 lbs. SO_2 per hour for 8,760 hours. Taking the difference between these SO_2 emission rates results in an increase of 116.88 lbs. SO_2 per hour (14.73 grams per second).

Because of the difficulty in dividing this increase between all BFG combustion emission sources, the full increase of 116.88 lbs. SO_2 per hour was attributed to each BFG combustion emission source for initial model runs. Because there are seven (7) BFG combustion stacks, this is the equivalent of modeling an incremental increase seven times what is proposed in this application. Using this method, the air quality increment consumption modeling will grossly over-predict the incremental impact of the BFG SO_2 combustion sources. This initial modeling resulted in exceedances of the PSD increment for the 24 hour averaging period at a limited number of receptors in the years 1987 and 1991.

Additional modeling was then performed for these receptors and these years to determine the worst case increment consumption under less conservative assumptions than made during the initial 24-hour model. The additional model runs included all GCW process sources and IL and MO increment consuming sources. Additionally it was assumed that either the boilers, Blast Furnace Stoves, or the Blast Furnace Flare would consume all the excess BFG. The results of this modeling are detailed in the section below.

The increment consuming emission rates are shown with the stack information in tables 6-16 and 6-17 below.

Table 6-16: Initial Point Source Modeled Stack Parameters

Stack Number	Description	Easting m	Northing m	Base Elevation m	Stack Height m	Temp K	Exit Velocity m/s	Stack Diameter m	SO_2 Emission Rate g/s
BF0007S	BF A Stove	749824	4286804	126.49	70.62	533	26.84	2.13	14.727
BF0011S	BFG Flare	749794	4286837	126.49	45.72	1273	20	6.12	14.727
BF0012S	BF B Stove	749682	4286717	126.49	71.95	533	18.56	2.74	14.727
UT0053S	Boiler 1-7	749759	4286829	126.49	68.58	461	10.08	3.88	14.727
UT0054S	Boiler 8-10	749709	4286788	126.49	60.96	461	8.18	2.82	14.727
UT0059S	Boiler 11	749885	4286881	126.49	46.9	510	21.82	1.93	14.727
UT0064S	Boiler 12	749901	4286884	126.49	46.45	510	13.65	2.44	14.727
BF0010S	Casthouse Baghouse	749635	4286730	126.49	9.144	339	22.52	3.35	6.20
BF0150S	Iron Spout Baghouse	749840	4286814	126.49	19.2	324	13.12	2.13	0.18
BOF0149S	Ladle dryer	748385	4286647	126.56	60.96	461	0	0.09	0.06

Table 6-17: Area Source Modeled Parameters

Stack Number	Description	Easting m	Northing m	Base Elevation m	Release Height m	Easterly Length m	Northerly Length m	Angle from North deg.	Vertical Dimension m	SO_2 Emission Rate g/s
BF008S	BF A roof	749710	4286732	126.49	70.62	37	4.57	-31	0.61	0.16
BF0013S	BF B roof	749765	4286763	126.49	70.62	37	4.57	-31	0.61	0.16
BF0126S	Slag pits	749697	4286750	126.49	0	101	10	-31	5	0.16

6.9.1 IEPA and MDNR Increment Consuming Sources

At the time of the original application of the Production Increase Permit, no previous increment consuming sources had been identified. For this modification, stack and emission data on all increment consuming SO_2 sources were requested from IEPA and MDNR for the increment analysis. IEPA and MDNR have provided increment source data, however, the City and County Air Pollution Control Agencies' representatives refused to provide increment consuming source data. Based on multiple conversations with MDNR and county representatives, increment consuming source data would have to be developed independently by individually reviewing city and county air permits to determine what sources consumed increment.

URS reviewed lists of St. Louis City and St. Louis County Air Permits issued since the SO_2 baseline date (December 30, 1982) provided by IEPA. The permit listings were cross-referenced by permit date and permitted unit to facilities meeting IEPA screening criteria. Only facilities

with permitted SO_2 increases that met the IEPA screening criteria were included in the increment modeling. These sources are shown in the tables for Missouri Sources below.

Tables 6-18, 6-19 and **6-20** include information for Illinois and Missouri (short term and long term), respectively, on increment consuming sources for their jurisdictions included in the PSD increment analysis.

Table 6-18: Illinois Increment Consuming Source Parameters

IEPA Source No.	Easting m	Northing m	Base Elevation m	Stack Height m	Temp K	Exit Velocity m/s	Stack Diameter m	SO_2 Emission Rate g/s
23	754159	4283243	128.3	9.75	388.7	25.52	1.19	4.57
100	745515	4283326	125	44.81	477.6	14.92	0.7	1.12
188	746360	4289240	125.9	9.14	294	0.1	0.1	0.13
P0506	745606	4283663	125.1	18.29	720	31.5	2.9	8.21
P0507	745607	4283653	125	18.29	720	31.5	2.9	8.21

Note: All increment consuming source parameters were provided by the state of Illinois and as requested by IEPA, permitted emission rates were modeled for increment consuming emission rates for this analysis.

Table 6-19: Missouri Short-Term Increment Consuming Source Parameters

Stack No.	Description	Easting m	Northing m	Base elev m	Stack height m	Temp K	Exit Velocity m/s	Stack diam m	SO_2 g/s
MO023001	Boeing	728092	4293232	165	7.5	422.0	710.2	0.81	6.74
MO023002	Boeing	728092	4293232	165	7.5	422.0	710.2	0.81	6.74
MO023003	Boeing	728092	4293232	165	7.9	422.0	868.7	0.91	33.00
MO023004	Boeing	728092	4293232	165	7.9	422.0	868.7	0.91	33.00
MO023005	Boeing	728092	4293232	165	7.9	422.0	868.7	0.91	33.00
M0017X3	Mallinckrodt Inc.	744174	4283340	129	4.2	338.7	1275.6	0.61	0.00
M0017X2	Mallinckrodt Inc.	744174	4283340	129	4.2	338.7	1275.6	0.61	0.00
M0017C02	Mallinckrodt Inc.	744174	4283340	129	8.4	522.0	243.8	1.52	7.53
M0017514	Mallinckrodt Inc.	744174	4283340	129	9.3	335.9	1143.0	1.37	0.01
M0017514A	Mallinckrodt Inc.	744174	4283340	129	9.3	335.9	1143.0	1.37	0.01
M0017C2A	Mallinckrodt Inc.	744174	4283340	129	8.4	522.0	243.8	1.52	0.03
M0017507	Mallinckrodt Inc.	744174	4283340	129	7.4	294.3	1114.3	0.30	0.00
M0017X1	Mallinckrodt	744174	4283340	129	4.2	338.7	1275.6	0.61	0.00

Table 6-19: Missouri Short-Term Increment Consuming Source Parameters

Stack No.	Description	Easting m	Northing m	Base elev m	Stack height m	Temp K	Exit Velocity m/s	Stack diam m	SO_2 g/s
	Inc.								
M0017250	Mallinckrodt Inc.	744174	4283340	129	4.0	298.2	151.5	0.05	0.03
M0017C01	Mallinckrodt Inc.	744174	4283340	129	10.2	560.9	333.8	1.52	0.01
M001750A	Mallinckrodt Inc.	744174	4283340	129	7.4	294.3	1114.3	0.30	0.00
M001750B	Mallinckrodt Inc.	744174	4283340	129	7.4	294.3	1114.3	0.30	0.00
M0017C3B	Mallinckrodt Inc.	744174	4283340	129	16.3	427.6	66.1	2.74	14.67
M00386	Trigen-St Louis Energy Corporation	749013	4280218	129	16.7	444.3	153.9	3.20	26.11
M00385	Trigen-St Louis Energy Corporation	749013	4280218	129	17.3	444.3	153.9	3.96	21.84
M0038003	Trigen-St Louis Energy Corporation	749013	4280218	129	17.3	444.3	153.9	3.96	26.11
M13632	National Linen Service	745124	4276024	131	3.4	449.8	470.9	0.91	3.18
M13631	National Linen Service	745124	4276024	131	3.4	449.8	470.9	0.91	3.24
AMSPS	Amerensioux	734994	431086	130	182.9	428.0	29.3	5.79	152.97
MLC1	misslime1	756750	4205955	205.5	23.2	519.0	4.0	3.23	6.43
MLC2	misslime2	756750	4205955	205.5	23.2	469.0	5.7	3.35	6.43
HLCM049	Kiln	740331	4221466	128.6	158.5	384.0	14.0	5.63	75.00
HLCM115	coalmill	740331	4221475	128.6	158.5	384.0	14.0	1.03	12.50

Table 6-20: Missouri Long-Term Increment Consuming Source Parameters

Stack No.	Description	Easting m	Northing m	Base elev m	Stack height m	Temp K	Exit velocity m/s	Stack diam m	SO_2 g/s
MO023001	Boeing	728092	4293232	165	7.5	422.0	710.2	0.81	6.74
MO023002	Boeing	728092	4293232	165	7.5	422.0	710.2	0.81	6.74
MO023003	Boeing	728092	4293232	165	7.9	422.0	868.7	0.91	33.00
MO023004	Boeing	728092	4293232	165	7.9	422.0	868.7	0.91	33.00
MO023005	Boeing	728092	4293232	165	7.9	422.0	868.7	0.91	33.00
M0017X3	Mallinckrodt Inc.	744174	4283340	129	4.2	338.7	1275.6	0.61	0.00

Table 6-20: Missouri Long-Term Increment Consuming Source Parameters

Stack No.	Description	Easting m	Northing m	Base elev m	Stack height m	Temp K	Exit velocity m/s	Stack diam m	SO_2 g/s
M0017X2	Mallinckrodt Inc.	744174	4283340	129	4.2	338.7	1275.6	0.61	0.00
M0017C02	Mallinckrodt Inc.	744174	4283340	129	8.4	522.0	243.8	1.52	7.53
M0017514	Mallinckrodt Inc.	744174	4283340	129	9.3	335.9	1143.0	1.37	0.01
M001751A	Mallinckrodt Inc.	744174	4283340	129	9.3	335.9	1143.0	1.37	0.01
M0017C2A	Mallinckrodt Inc.	744174	4283340	129	8.4	522.0	243.8	1.52	0.03
M0017507	Mallinckrodt Inc.	744174	4283340	129	7.4	294.3	1114.3	0.30	0.00
M0017X1	Mallinckrodt Inc.	744174	4283340	129	4.2	338.7	1275.6	0.61	0.00
M0017250	Mallinckrodt Inc.	744174	4283340	129	4.0	298.2	151.5	0.05	0.03
M0017C01	Mallinckrodt Inc.	744174	4283340	129	10.2	560.9	333.8	1.52	0.01
M001750A	Mallinckrodt Inc.	744174	4283340	129	7.4	294.3	1114.3	0.30	0.00
M001750B	Mallinckrodt Inc.	744174	4283340	129	7.4	294.3	1114.3	0.30	0.00
M0017C3B	Mallinckrodt Inc.	744174	4283340	129	16.3	427.6	66.1	2.74	14.67
M00386	Trigen-St Louis Energy Corporation	749013	4280218	129	16.7	444.3	153.9	3.20	26.11
M00385	Trigen-St Louis Energy Corporation	749013	4280218	129	17.3	444.3	153.9	3.96	21.84
M0038003	Trigen-St Louis Energy Corporation	749013	4280218	129	17.3	444.3	153.9	3.96	26.11
M13632	National Linen Service	745124	4276024	131	3.4	449.8	470.9	0.91	3.18
M13631	National Linen Service	745124	4276024	131	3.4	449.8	470.9	0.91	3.24
AMSPS	Amerensioux	734994	431086	130	182.9	427.5	29.3	5.79	1.15
MLC1	misslime1	756750	4205955	205.5	23.2	519.2	4	3.23	6.42
MLC2	misslime2	756750	4205955	205.5	23.2	468.7	5.7	3.35	6.42
HLCM49	Kiln	740331	4221466	128.6	158.5	384.15	14	5.63	75.00
HCM115	coalmill	740331	4221475	128.6	158.5	384.15	14	1.03	12.50

6.9.2 PSD Increment Consumption Model Results

The results of the PSD increment consumption modeling analysis show that the SO_2 increments are not exceeded in the 3-hour or annual averaging periods when modeling is performed utilizing the revised production increase BFG SO_2 emission rate. The highest high concentration modeled for each averaging period and for each year is shown in Table 6-21 below compared to the allowable Class II SO_2 increment levels.

Table 6-21: Initial PSD SO_2 Increment Modeling Results

Year	Maximum Modeled SO_2 Concentrations ($\mu g/m^3$)		
	3-hr Ave.	24-hr Ave.	Annual Ave.
1987	143	94	14
1988	210	87	15
1989	143	90	13
1990	142	86	17
1991	141	91	14
Increment	512	91	20

Because a limited number of receptors in the 1987 and the 1991 model runs met or exceeded the 24-hour increment, additional runs were conducted for those receptors and those years. The additional model runs assumed the full incremental increase in SO_2 was emitted from each source in a group of sources instead of all sources as was modeled in the initial model run. Source groups modeled were the boilers, blast furnace stoves and the blast furnace flare. These groups were combined with the incremental emissions from the GCW process sources and the MO and IL increment consuming sources. The source groups and the modeled emission rates are shown in Table 6-22.

Table 6-22: Additional PSD Increment Modeling SO_2 Emission Rates

Group	Stack Number	Description	SO_2 Emission Rate g/s
Blast Furnace Stove Group	BF0007S	BF A Stove	14.727
	BF0012S	BF B Stove	14.727
Boiler Group	UT0053S	Boiler 1-7	14.727
	UT0054S	Boiler 8-10	14.727
	UT0059S	Boiler 11	14.727
	UT0064S	Boiler 12	14.727
BFG Flare Group	BF0011S	BFG Flare	14.727

Results from modeling using the above grouped source approach are shown in Table 6-23.

Table 6-23: Additional 24-hour PSD Increment Modeling Results

Year	Highest 24-Hour Increment Model Result ($\mu g/m^3$)		
	Boiler Group	Blast Furnace Group	BFG Flare Group
1991	79	60	60
1987	80	55	55
Increment	91	91	91

The results in Table 6-23 show the revised Production Increase Permit BFG emission rates will not result in exceedances of the 24-hour PSD increment.

The electronic modeling files are included in this application under Appendix D of this application in two CDs. The modeling files or this project have been separated into folders based on averaging periods, receptor grids, and details of the model runs. A description of the model runs in each folder is below.

SO2 NAAQS and PSD increment modeling files

FOLDERS:

- 3hr
  - SO2 modeling at the 3-hour averaging time
  - Using the near-field receptor grid

- 3hr-far
  - SO2 modeling at the 3-hour averaging time
  - Using the far-field receptor grid

- 24hr
  - SO2 modeling at the 24-hour averaging time
  - Using the near-field receptor grid

- 24hr-far
  - SO2 modeling at the 24-hour averaging time
  - Using the far-field receptor grid

- 24hr-far events
  - Subset of the 24hr-far modeling, utilizing a 500m grid around receptors exceeding NAAQS
  - Used Events Modeling to look at individual source contributions to exceedances

- 24hr-far-scenarios
  - Scenario modeling of SO2 at the 24-hr averaging period
  - Four different GCW emissions scenarios based on maximum COG production levels
  - Used Events Modeling to look at individual source contributions to NAAQS exceedances

- Annual
  - SO2 modeling of annual average concentrations
  - Using the near-field receptor grid

- Annual-far
  - SO2 modeling of annual average concentrations
  - Using the far-field receptor grid

- Increment modeling
  - SO2 increment modeling of the 3hr, 24hr and annual averaging periods
  - Both near and far grids in same model run

- Incrmt24
  - Additional modeling of the 24hr averaging period based on maximum increase in BFG production

FILE EXTENSION: DESCRIPTION

.BST: BEEST session file

.BND: contains information about fencelines, building and stack names for display

.DTA: model input data file

.GRF: master graphics file for display

.LST: model output list file

.MAX: maxi file specified in BEEST

.PRW: source and building data for BPIP-PRIME

.RUN: contains runtime information needed by AerMod

.SO: output file from BPIP-PRIME

.SUM: summary form of .SO file

.TAB: verbose form of .SO file

.USF: summary of model output created by BEEST

The original Production Increase Permit application concluded that the Production Increase Permit would not produce any adverse affects. It based this conclusion on the analysis required under 40 CFR 52.21(o). That analysis included a review of the additional impacts on the following:

1. Impacts on soils and vegetation that would result from the modification.
2. Impacts on air quality and visibility in Class I areas within 100 km of the project.
3. Impacts on endangered species.
4. Socioeconomic Impacts.

The analysis of these additional impacts resulting from the production increase has been reanalyzed in this application to determine to what extent, if any, it has been affected by the revised BFG combustion emission rate requested in this permit modification application. The review of the conclusions in the original Production Increase Permit application indicates that no additional adverse impacts would result from the requested revision of the IEPA issued Production Increase Permit. The analysis is detailed in the sections below.

7.1 SOILS AND VEGETATION ANALYSIS

Soils and vegetation analysis applies only to those areas in which there is vegetation of significant commercial or recreational value. There are no vegetation or soil types in the Granite City area which would be harmed by the proposed incremental increase in concentrations of SO_2 below the NAAQS. Therefore, no soils or vegetation analysis are required for the proposed revisions to the Production Increase Permit.

7.2 CLASS I AREA AIR QUALITY IMPACT ANALYSIS

The nearest Federal Class I area to the Granite City Works is the Mingo Junction National Wilderness Area approximately 210 km southwest of the facility. The next closest Class I area is Hercules-Glades approximately 330 km southwest of the Granite City Works mill. The distances from these Class I areas to the facility is greater than 100 km. Therefore, no air quality impact is to be expected and no analyses were performed to evaluate air quality impacts within the wilderness areas.

7.3 CLASS I AREA VISIBILITY IMPACT ANALYSIS

The nearest Federal Class I area to the Granite City Works is the Mingo Junction National Wilderness Area approximately 210 km southwest of the facility. The next closest Class I area is Hercules-Glades approximately 330 km southwest of the Granite City Works mill. The distances

from these Class I areas to the facility is greater than 200 km. Therefore, no visibility impact is to be expected and no analyses were performed to evaluate visibility impacts within the wilderness areas.

7.4 IMPACTS ON ENDANGERED SPECIES

Twenty-one (21) species are listed as endangered (11 species) or threatened (10 species) which are local to Madison County Illinois. These species are listed in **Table 7-1** below. None of these species are known, likely, or presumed to have habitat in or near this industrial facility. Because the proposed modification to the Production Increase Permit is a result of an error in the emission factor used to calculate the original permitted limit, the emissions changes resulting from the proposed modification have already occurred in the project area. No impacts to threatened or endangered species are known to have occurred since the permit was issued as a result of the SO_2 emissions from the facility. As a result, no impacts are expected to occur to any endangered or threatened species as a result of this permit modification.

Table 7-1: Illinois Endangered Species Specific to Madison County, IL

SCIENTIFIC NAME	COMMON NAME	ENDANGERED OR THREATENED
Acipenser fulvescens	Lake Sturgeon	Endangered Fish
Ammocrypta clarum	Western Sand Darter	Endangered Fish
Boltonia decurrens	Decurrent False Aster	Threatened Plant
Crotalus horridus	Timber Rattlesnake	Threatened Reptile
Egretta caerulea	Little Blue Heron	Endangered Bird
Ellipsaria lineolata	Butterfly	Threatened invertebrate
Falco peregrinus	Peregrine Falcon	Threatened Bird
Gallinula chloropus	Common Moorhen	Threatened Bird
Haliaeetus leucocephalus	Bald Eagle	Threatened Bird
Ixobrychus exilis	Least Bittern	Threatened Bird
Notropis boops	Bigeye Shiner	Endangered Fish
Nyctanassa violacea	Yellow-crowned Night Heron	Endangered Bird
Nycticorax nycticorax	Black-crowned Night Heron	Endangered Bird
Pseudacris streckeri illinoensis	Illinois Chorus Frog	Threatened Amphibian
Scaphirhynchus albus	Pallid Sturgeon	Endangered Fish
Silene regia	Royal Catchfly	Endangered Plant
Sistrurus catenatus	Eastern Massassauga	Endangered Reptile
Spiranthes vernalis	Spring Ladies' Tresses	Endangered Plant
Tradescantia bracteata	Prairie Spiderwort	Threatened Plant
Tropidoclonion lineatum	Lined Snake	Threatened Reptile
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	Endangered Bird

7.5 SOCIOECONOMIC IMPACTS

The production increase at the Granite City Works has had a positive economic impact for the facility and the surrounding community. The industrial infrastructure surrounding the facility has been established over the many years of operation of the facility and will be unaffected by the proposed modification to the Production Increase Permit. Although the modification will not result in any additional employment or other positive socioeconomic impacts, no negative impacts are expected to result from the additional SO_2 emissions allowable under the proposed modification.

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)

For Illinois EPA use only
ID number:
Permit number:
Date received:

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this con struction/modification project

Source Information

1. Source name.
United States Steel Corporation - Granite City Works

2. Source street address:
1951 State Street

3. City:	4. Zip code:
Granite City	62040

5. Is the source located within city limits? ☒ Yes ☐ No

6. Township name:	7. County:	8. ID number:
Granite City	Madison	119813AAI

Owner Information

9. Name.
United States Steel Corporation

10. Address:
600 Grant Street

11. City:	12. State:	13. Zip code:
Pittsburg	PA	15219

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Illinois Environmental Protection Agency
DIVISION OF AIR

Operator Information (if different from owner)

14. Name

15. Address:

16. City:	17. State:	18. Zip code:

Applicant Information

19. Who is the applicant? ☒ Owner ☐ Operator

20. All correspondence to. (check one) ☐ Owner ☐ Operator ☒ Source

21. Attention name and/or title for written correspondence:
Larry Siebenberger/ Environmental Manager

22. Technical contact person for application:	23. Contact person's telephone number:
Larry Siebenberger	(618) 451-3391

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents

24.	Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs: a) Non-attainment New Source Review - 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) - 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources - 40 CFR Part 63?	☒ Yes ☐ No
25.	Does the application identify and address all applicable emissions standards, including those found in the following: a) Board Emission Standards - 35 IAC Chapter 1, Subtitle B; b) Federal New Source Performance Standards - 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants - 40 CFR Parts 61 and 63?	☒ Yes ☐ No
26.	Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?	☒ Yes ☐ No
27.	Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	☒ Yes ☐ No
28.	Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.	☒ Yes ☐ No
29.	If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?	☐ Yes ☐ No ☒ Not Applicable, No TRADE SECRET information in this application

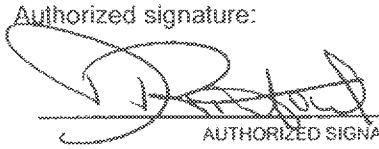
Note 1 - Answering "No" to any of the above may result in the application being deemed incomplete.

Signature Block

This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

30. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete.

Authorized signature:

BY: 

AUTHORIZED SIGNATURE

General Manager

TITLE OF SIGNATORY

David J. Rintoul

TYPED OR PRINTED NAME OF SIGNATORY

01 / 31 / 2008

DATE

Note 2- An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source's CAAPP permit, if necessary.

R008796

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION

FOR AGENCY USE ONLY	
ID NUMBER:	
PERMIT #:	
COMPLETE ☐ INCOMPLETE ☐	DATE COMPLETE:
CHECK #:	ACCOUNT NAME:

THIS FORM IS TO BE USED BY ALL SOURCES TO SUPPLY FEE INFORMATION THAT MUST ACCOMPANY ALL CONSTRUCTION PERMIT APPLICATIONS. ***THIS APPLICATION MUST INCLUDE PAYMENT IN FULL TO BE DEEMED COMPLETE.*** MAKE CHECK OR MONEY ORDER PAYABLE TO THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY. SEND TO THE ADDRESS ABOVE. DO NOT SEND CASH. REFER TO INSTRUCTIONS (197-INST) FOR ASSISTANCE.

SOURCE INFORMATION

1) SOURCE NAME: US Steel-Granite City Works	
2) PROJECT NAME: Production Increase Mod	3) SOURCE ID NO. (IF APPLICABLE): 119813AAI
4) CONTACT NAME: Larry Siebenberger	5) CONTACT PHONE NUMBER: (618) 451-3391

FEE DETERMINATION

6) FILL IN THE FOLLOWING THREE BOXES AS DETERMINED IN SECTIONS 1 THROUGH 4 BELOW:

$ 0	+	$ 8,000	=	$ 8,000
SECTION 1 SUBTOTAL		SECTION 2, 3 OR 4 SUBTOTAL		GRAND TOTAL

SECTION 1: STATUS OF SOURCE / PURPOSE OF SUBMITTAL

7) YOUR APPLICATION WILL FALL UNDER ONLY ONE OF THE FOLLOWING SIX CATEGORIES DESCRIBED BELOW. CHECK THE BOX THAT APPLIES, ENTER THE CORRESPONDING FEE IN THE BOX TO THE RIGHT AND COPY THIS FEE INTO THE SECTION 1 SUBTOTAL BOX ABOVE. PROCEED TO APPLICABLE SECTIONS.

FOR PURPOSES OF THIS FORM:

- ***MAJOR SOURCE*** IS A SOURCE THAT IS REQUIRED TO OBTAIN A CAAPP PERMIT.
- ***SYNTHETIC MINOR SOURCE*** IS A SOURCE THAT HAS TAKEN LIMITS ON POTENTIAL TO EMIT IN A PERMIT TO AVOID CAAPP PERMIT REQUIREMENTS (E.G., FESOP).
- ***NON-MAJOR SOURCE*** IS A SOURCE THAT IS NOT A MAJOR OR SYNTHETIC MINOR SOURCE.

☒ EXISTING SOURCE WITHOUT STATUS CHANGE OR WITH STATUS CHANGE FROM SYNTHETIC MINOR TO MAJOR SOURCE OR VICE VERSA. ENTER $0 AND PROCEED TO SECTION 2.	$ 0 SECTION 1 SUBTOTAL
☐ EXISTING NON-MAJOR SOURCE THAT WILL BECOME SYNTHETIC MINOR OR MAJOR SOURCE. ENTER $5,000 AND PROCEED TO SECTION 4.	
☐ EXISTING MAJOR OR SYNTHETIC MINOR SOURCE THAT WILL BECOME NON-MAJOR SOURCE. ENTER $4,000 AND PROCEED TO SECTION 3.	
☐ NEW MAJOR OR SYNTHETIC MINOR SOURCE. ENTER $5,000 AND PROCEED TO SECTION 4.	
☐ NEW NON-MAJOR SOURCE. ENTER $500 AND PROCEED TO SECTION 3.	
☐ AGENCY ERROR. IF THIS IS A TIMELY REQUEST TO CORRECT AN ISSUED PERMIT THAT INVOLVES ONLY AN AGENCY ERROR AND IF THE REQUEST IS RECEIVED WITHIN THE DEADLINE FOR A PERMIT APPEAL TO THE POLLUTION CONTROL BOARD, THEN ENTER $0. SKIP SECTIONS 2, 3 AND 4. PROCEED DIRECTLY TO SECTION 5.	

RECEIVED
STATE OF ILLINOIS
FEB 14 2008
Illinois Environmental Protection Agency
DIVISION OF AIR

SECTION 2: SPECIAL CASE FILING FEE

8) FILING FEE. IF THE APPLICATION ONLY ADDRESSES ONE OR MORE OF THE FOLLOWING, CHECK THE APPROPRIATE BOXES, ENTER $500 IN THE SECOND BOX UNDER FEE DETERMINATION ABOVE, SKIP SECTIONS 3 AND 4 AND PROCEED DIRECTLY TO SECTION 5. OTHERWISE, PROCEED TO SECTION 3 OR 4, AS APPROPRIATE.

- ☐ ADDITION OR REPLACEMENT OF CONTROL DEVICES ON PERMITTED UNITS
- ☐ PILOT PROJECTS/TRIAL BURNS BY A PERMITTED UNIT
- ☐ APPLICATIONS ONLY INVOLVING INSIGNIFICANT ACTIVITIES UNDER 35 IAC 201.210 (MAJOR SOURCES ONLY)
- ☐ LAND REMEDIATION PROJECTS
- ☐ REVISIONS RELATED TO METHODOLOGY OR TIMING FOR EMISSION TESTING
- ☐ MINOR ADMINISTRATIVE-TYPE CHANGE TO A PERMIT

THIS AGENCY IS AUTHORIZED TO REQUIRE AND YOU MUST DISCLOSE THIS INFORMATION UNDER 415 ILCS 5/39. FAILURE TO DO SO COULD RESULT IN THE APPLICATION BEING DENIED AND PENALTIES UNDER 415 ILCS 5 ET SEQ. IT IS NOT NECESSARY TO USE THIS FORM IN PROVIDING THIS INFORMATION. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

APPLICATION PAGE _____

SECTION 3: FEES FOR CURRENT OR PROJECTED NON-MAJOR SOURCES

9) IF THIS APPLICATION CONSISTS OF A SINGLE NEW EMISSION UNIT OR NO MORE THAN TWO MODIFIED EMISSION UNITS, ENTER $500.	9)	
10) IF THIS APPLICATION CONSISTS OF MORE THAN ONE NEW EMISSION UNIT OR MORE THAN TWO MODIFIED UNITS, ENTER $1,000.	10)	
11) IF THIS APPLICATION CONSISTS OF A NEW SOURCE OR EMISSION UNIT SUBJECT TO SECTION 39.2 OF THE ACT (I.E., LOCAL SITING REVIEW); A COMMERCIAL INCINERATOR OR A MUNICIPAL WASTE, HAZARDOUS WASTE, OR WASTE TIRE INCINERATOR; A COMMERCIAL POWER GENERATOR; OR AN EMISSION UNIT DESIGNATED AS A COMPLEX SOURCE BY AGENCY RULEMAKING, ENTER $15,000.	11)	
12) IF A PUBLIC HEARING IS HELD (SEE INSTRUCTIONS), ENTER $10,000.	12)	
13) SECTION 3 SUBTOTAL (ADD LINES 9 THROUGH 12) TO BE ENTERED ON PAGE 1.	13)	

SECTION 4: FEES FOR CURRENT OR PROJECTED MAJOR OR SYNTHETIC MINOR SOURCES

Application Contains Modified Emission Units Only	14) FOR THE FIRST MODIFIED EMISSION UNIT, ENTER $2,000.	14) 2000	
	15) NUMBER OF ADDITIONAL MODIFIED EMISSION UNITS = 0 X $1,000.	15) 0	
	16) LINE 14 PLUS LINE 15, OR $5,000, WHICHEVER IS LESS.		16) 2000
Application Contains New And/Or Modified Emission Units	17) FOR THE FIRST NEW EMISSION UNIT, ENTER $4,000.	17) 0	
	18) NUMBER OF ADDITIONAL NEW AND/OR MODIFIED EMISSION UNITS = _____ X $1,000.	18) 0	
	19) LINE 17 PLUS LINE 18, OR $10,000, WHICHEVER IS LESS.		19) 0
Application Contains Netting Exercise	20) NUMBER OF INDIVIDUAL POLLUTANTS THAT RELY ON A NETTING EXERCISE OR CONTEMPORANEOUS EMISSIONS DECREASE TO AVOID APPLICATION OF PSD OR NONATTAINMENT NSR = 0 X $3,000.		20) 0
Additional Supplemental Fees	21) IF THE NEW SOURCE OR EMISSION UNIT IS SUBJECT TO SECTION 39.2 OF THE ACT (I.E., SITING); A COMMERCIAL INCINERATOR OR OTHER MUNICIPAL WASTE, HAZARDOUS WASTE, OR WASTE TIRE INCINERATOR; A COMMERCIAL POWER GENERATOR; OR ONE OR MORE OTHER EMISSION UNITS DESIGNATED AS A COMPLEX SOURCE BY AGENCY RULEMAKING, ENTER $25,000.		21) 0
	22) IF THE SOURCE IS A NEW MAJOR SOURCE SUBJECT TO PSD, ENTER $12,000.		22) 0
	23) IF THE PROJECT IS A MAJOR MODIFICATION SUBJECT TO PSD, ENTER $6,000.		23) 6000
	24) IF THIS IS A NEW MAJOR SOURCE SUBJECT TO NONATTAINMENT (NAA) NSR, ENTER $20,000.		24) 0
	25) IF THIS IS A MAJOR MODIFICATION SUBJECT TO NAA NSR, ENTER $12,000.		25) 0
	26) IF APPLICATION INVOLVES A DETERMINATION OF CLEAN UNIT STATUS AND THEREFORE IS NOT SUBJECT TO BACT OR LAER, ENTER $5,000 PER UNIT FOR WHICH A DETERMINATION IS REQUESTED OR OTHERWISE REQUIRED. _____ X $5,000.		26) 0
	27) IF APPLICATION INVOLVES A DETERMINATION OF MACT FOR A POLLUTANT AND THE PROJECT IS NOT SUBJECT TO BACT OR LAER FOR THE RELATED POLLUTANT UNDER PSD OR NSR (E.G., VOM FOR ORGANIC HAP), ENTER $5,000 PER UNIT FOR WHICH A DETERMINATION IS REQUESTED OR OTHERWISE REQUIRED. _____ X $5,000.		27) 0
	28) IF A PUBLIC HEARING IS HELD (SEE INSTRUCTIONS), ENTER $10,000.		28)
29) SECTION 4 SUBTOTAL (ADD LINES 16 AND LINES 19 THROUGH 28) TO BE ENTERED ON PAGE 1.			29) 8000

SECTION 5: CERTIFICATION

NOTE: APPLICATIONS WITHOUT A SIGNED CERTIFICATION WILL BE DEEMED INCOMPLETE.

30) I CERTIFY UNDER PENALTY OF LAW THAT, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE INFORMATION CONTAINED IN THIS FEE APPLICATION FORM IS TRUE, ACCURATE AND COMPLETE.

BY: _____ (SIGNATURE)

General Manager (TITLE OF SIGNATORY)

David R. Ritzel (TYPED OR PRINTED NAME OF SIGNATORY)

01 / 31 / 2008 (DATE)

APPLICATION PAGE _____

Printed on Recycled Paper

197-FEE

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page ____ of ____
Source Designation: BFG Combustion

FUEL COMBUSTION EMISSION UNIT DATA AND INFORMATION

FOR AGENCY USE ONLY
ID NUMBER:
EMISSION POINT #:
DATE:

SOURCE INFORMATION

1) SOURCE NAME: United States Steel - Granite City Works

2) DATE FORM PREPARED:

3) SOURCE ID NO. (IF KNOWN): 119813AAI

GENERAL INFORMATION

4) NAME OF EMISSION UNIT: BFG Combustion Units (Boilers, Blast Air Stoves, and Flare)

5) NAME OF PROCESS: BFG Combustion

6) DESCRIPTION OF PROCESS: BFG Combustion to produce usable heat or flare when necessary

7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED: Produce steam or usable heat

8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT: BFG Combustion Units

9) MANUFACTURER OF EMISSION UNIT (IF KNOWN): Various

10) MODEL NUMBER (IF KNOWN):

11) SERIAL NUMBER (IF KNOWN):

12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)

a) CONSTRUCTION (MONTH/YEAR): Various

b) OPERATION (MONTH/YEAR):

c) LATEST MODIFICATION (MONTH/YEAR):

13) DESCRIPTION OF MODIFICATION (IF APPLICABLE): Revise BFG Combustion SO2 limit in Production Increase Permit based on new data indicating previous emission factor used to develop limit was incorrect.

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

FOR APPLICANT'S USE

APPLICATION PAGE _____

14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☐ YES ☒ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 240-CAAPP MUST BE COMPLETED FOR EACH MODE):

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

None

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

BFG Combustion facility wide limited to 185,030 million cubic feet per year.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 240-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52
b) TYPICAL OPERATING HOURS	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52

20) ANNUAL THROUGHPUT	DEC-FEB(%):	MAR-MAY(%):	JUN-AUG(%):	SEP-NOV(%):

FIRING RATE INFORMATION

21a) RATED OR DESIGN HEAT INPUT CAPACITY (MILLION BTU/HR):

Various

b) IS MORE THAN ONE FUEL FIRED AT A TIME? ☒ YES ☐ NO

IF YES, EXPLAIN:

21c) IF HEAT INPUT CAPACITY IS 100 MILLION BTU/HOUR OR GREATER, PROVIDE FURNACE VOLUME (CUBIC FEET)
NOTE: FURNACE VOLUME IS DEFINED AS THAT VOLUME BOUNDED BY THE FRONT FURNACE WALL WHERE THE BURNER IS LOCATED, THE FURNACE SIDE WATERWALL, AND EXTENDING TO THE LEVEL JUST BELOW OR IN FRONT OF THE FIRST ROW OF CONVECTION PASS TUBES.

	NATURAL GAS	FUEL OIL	COAL	OTHER
d) SINGLE FUEL (MAXIMUM - MILLION BTU/HOUR)				
e) SINGLE FUEL (TYPICAL - MILLION BTU/HOUR)				
f) COMBINED FUEL (TYPICAL - MILLION BTU/HOUR) (IF APPLICABLE)				

NATURAL GAS FIRING

22a) CURRENT ORIGIN OF NATURAL GAS:
☐ PIPELINE (FIRM CONTRACT) ☐ BY-PRODUCT, SPECIFY ORIGIN:
☐ PIPELINE (INTERRUPTIBLE SUPPLY CONTRACT) ☐ OTHER, - SPECIFY:

b) TYPICAL HEAT CONTENT (BTU/SCF):
1000

c) MAXIMUM CONSUMPTION	SCF/MONTH:	SCF/YEAR:
d) TYPICAL CONSUMPTION	SCF/MONTH:	SCF/YEAR:

OIL FIRING

23a) OIL TYPE (CHECK ONE):
☐ NO. 1 ☐ NO. 2 ☐ NO. 4 ☐ NO. 5 ☐ NO. 6
☐ OTHER, SPECIFY (INCLUDE GENERATOR OR SUPPLIER):

b) TYPICAL HEAT CONTENT:
☐ BTU/LB - OR - ☐ BTU/GAL

c) IS OIL USED ONLY AS A RESERVE FUEL? ☐ YES ☐ NO

d) TYPICAL SULFUR CONTENT AS FIRED (WT %):

e) TYPICAL ASH CONTENT AS FIRED (WT %):

f) MAXIMUM CONSUMPTION	GAL/MONTH:	GAL/YEAR:
g) TYPICAL CONSUMPTION	GAL/MONTH:	GAL/YEAR:

h) FIRING DIRECTION:
☐ HORIZONTAL ☐ TANGENTIAL ☐ OTHER, SPECIFY:

SOLID FUEL FIRING

*24a) SOLID FUEL TYPE (CHECK ALL THAT APPLY): ☐ SUB-BITUMINOUS COAL ☐ LIGNITE COAL ☐ BITUMINOUS COAL ☐ ANTHRACITE COAL ☐ OTHER, SPECIFY:

b) TYPICAL HEAT CONTENT AS FIRED (BTU/LB):	c) TYPICAL MOISTURE CONTENT AS FIRED (WT %):
d) TYPICAL SULFUR CONTENT AS FIRED (WT %):	e) TYPICAL ASH CONTENT AS FIRED (WT %):
f) TYPICAL FINES CONTENT (% LESS THAN 1/8 INCH):	g) IS THE COAL CLEANED? ☐ YES ☐ NO
h) HOW MUCH COAL REFUSE IS IN THE FUEL? (WT %):	

i) MAXIMUM CONSUMPTION	TON/MONTH:	TON/YEAR:
j) TYPICAL CONSUMPTION	TON/MONTH:	TON/YEAR:

k) FIRING TYPE (CHECK ONE):
☐ TRAVELING GRATE ☐ SPREADER STOKER % REINJECTION:
☐ CYCLONE ☐ PULVERIZED, TYPE (CIRCLE ONE): WET BOTTOM DRY BOTTOM
☐ HORIZONTALLY OPPOSED ☐ OTHER, SPECIFY:

*NOTE: IF REQUIRED, SUBMIT COPIES OF THOSE PORTIONS OF COAL SUPPLY CONTRACTS WHICH SET FORTH THE SPECIFICATIONS OF THE FUEL AND THE DURATION OF THE CONTRACT. IF THE ACTUAL FUEL FIRED IS A BLEND OF COAL, SUBMIT APPROPRIATE PORTIONS OF ALL FUEL CONTRACTS AND STATE THE MANNER BY WHICH THE FUELS ARE BLENDED AND ACTUALLY FIRED. ATTACH AND LABEL AS EXHIBIT 240-2.

OTHER FUEL FIRING

25a) OTHER FUEL FIRING

	TYPE	SUPPLIER
a)	Blast Furnace Gas	By-Product Fuel (GCW)
b)		

b) TYPICAL HEAT CONTENT (SPECIFY UNITS): a) 80	c) TYPICAL NITROGEN CONTENT AS FIRED (WT %):
d) TYPICAL SULFUR CONTENT AS FIRED (WT %): a) 0.00005	e) TYPICAL ASH CONTENT AS FIRED (WT %):

f) MAXIMUM CONSUMPTION	(SPECIFY UNITS/MONTH): 30800 MMcf (all units)	(SPECIFY UNITS/YEAR): 185030 MMcf (all units)
g) TYPICAL CONSUMPTION	(SPECIFY UNITS/MONTH):	(SPECIFY UNITS/YEAR):

APPLICABLE RULES

26) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., PARTICULATE MATTER, IAC 212.206, <= 0.10 LBS/MMBTU):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)

27) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)

28) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)

29) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)

30) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT :

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)

R008802

31) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 240-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

32) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE – ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

33) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Stack Testing

34) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Fuel Sulfur Content Testing and Engineering Calculations

TESTING, MONITORING, RECORDKEEPING AND REPORTING

35a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
BFG flow	MMcf	flowmeter	monthly

35b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
BFG Flow	Log		

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

36a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

None

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., OPACITY)?

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR):

36d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☐ NO

IF NO, EXPLAIN:

37) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 240-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
None				

38) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
None		

(39)EMISSION INFORMATION

☒ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

REGULATED AIR POLLUTANT		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE EMISSION RATE: [5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	[2]PERMITTED EMISSION RATE: RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )	G 9			
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:		1480.24				( )				1480.24
	TYPICAL:		1100.00				( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:						( )				
	TYPICAL:						( )				
OTHER, SPECIFY:	MAXIMUM:						( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER -	*MAXIMUM:*	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.60*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 240-6.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

R008806

(40) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

HAP INFORMATION		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE				ALLOWABLE BY RULE	
NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	[5]RATE OR STANDARD	APPLICABLE RULE
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*6.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 240-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

R008807

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

41) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:

42) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.

43) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):

44) DISCHARGE HEIGHT ABOVE GRADE (FT):

45) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):

46) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA.

47) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM):	b) TYPICAL (ACFM):
48) EXIT GAS TEMPERATURE	a) MAXIMUM (°F):	b) TYPICAL (°F):

49) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):

50) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)		
b)		
c)		
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

51a) LATITUDE:	b) LONGITUDE:	
52) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

R008809

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #:
Date: / /
Page of
Source Designation: Boilers 1-10

FUEL COMBUSTION EMISSION UNIT DATA AND INFORMATION

FOR AGENCY USE ONLY
ID NUMBER:
EMISSION POINT #:
DATE:

SOURCE INFORMATION

1) SOURCE NAME: United States Steel - Granite City Works

2) DATE FORM PREPARED:	3) SOURCE ID NO. (IF KNOWN): 119813AAI

GENERAL INFORMATION

4) NAME OF EMISSION UNIT: NG Combustion Units (Boilers, Blast Air Stoves, Ladle Dryers and BFG Flare)

5) NAME OF PROCESS: NG Combustion

6) DESCRIPTION OF PROCESS: NG Combustion to produce usable heat

7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED: Produce steam or usable heat

8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT: NG Combustion Units

9) MANUFACTURER OF EMISSION UNIT (IF KNOWN):

10) MODEL NUMBER (IF KNOWN):	11) SERIAL NUMBER (IF KNOWN):
12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)	a) CONSTRUCTION (MONTH/YEAR): ~1920s
	b) OPERATION (MONTH/YEAR):
	c) LATEST MODIFICATION (MONTH/YEAR):

13) DESCRIPTION OF MODIFICATION (IF APPLICABLE): Revise NG combustion emission factors for VOM and CO used to develop limits in Production Increase Permit to reflect changes in AP-42 emission factors.

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

FOR APPLICANT'S USE

14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☐ YES ☒ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 240-CAAPP MUST BE COMPLETED FOR EACH MODE):

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

None

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

BFG Combustion facility wide limited to 185,030 million cubic feet per year.
NG combustion in the boilers, BF Stoves, Ladle Dryers and BFG flare limited to 1,346 million cubic feet per year.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 240-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
b) TYPICAL OPERATING HOURS	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
20) ANNUAL THROUGHPUT	DEC-FEB(%):	MAR-MAY(%):	JUN-AUG(%):	SEP-NOV(%):

FIRING RATE INFORMATION

21a) RATED OR DESIGN HEAT INPUT CAPACITY (MILLION BTU/HR):

60 each

b) IS MORE THAN ONE FUEL FIRED AT A TIME? ☒ YES ☐ NO

IF YES, EXPLAIN:

Units can fire NG or BFG. During BFG firing, NG or COG is required for pilot flame to maintain combustion.

21c) IF HEAT INPUT CAPACITY IS 100 MILLION BTU/HOUR OR GREATER, PROVIDE FURNACE VOLUME (CUBIC FEET)
NOTE: FURNACE VOLUME IS DEFINED AS THAT VOLUME BOUNDED BY THE FRONT FURNACE WALL WHERE THE BURNER IS LOCATED, THE FURNACE SIDE WATERWALL, AND EXTENDING TO THE LEVEL JUST BELOW OR IN FRONT OF THE FIRST ROW OF CONVECTION PASS TUBES.

	NATURAL GAS	FUEL OIL	COAL	OTHER
d) SINGLE FUEL (MAXIMUM - MILLION BTU/HOUR)				
e) SINGLE FUEL (TYPICAL - MILLION BTU/HOUR)				
f) COMBINED FUEL (TYPICAL - MILLION BTU/HOUR) (IF APPLICABLE)				

NATURAL GAS FIRING

22a) CURRENT ORIGIN OF NATURAL GAS:
☒ PIPELINE (FIRM CONTRACT) ☐ BY-PRODUCT, SPECIFY ORIGIN:
☐ PIPELINE (INTERRUPTIBLE SUPPLY CONTRACT) ☐ OTHER, - SPECIFY:

b) TYPICAL HEAT CONTENT (BTU/SCF):
1000

c) MAXIMUM CONSUMPTION	SCF/MONTH: 225,000,000	SCF/YEAR: 1,346,000,000
d) TYPICAL CONSUMPTION	SCF/MONTH:	SCF/YEAR:

OIL FIRING

23a) OIL TYPE (CHECK ONE):
☐ NO. 1 ☐ NO. 2 ☐ NO. 4 ☐ NO. 5 ☐ NO. 6
☐ OTHER, SPECIFY (INCLUDE GENERATOR OR SUPPLIER):

b) TYPICAL HEAT CONTENT: ☐ BTU/LB - OR - ☐ BTU/GAL	c) IS OIL USED ONLY AS A RESERVE FUEL? ☐ YES ☐ NO	
d) TYPICAL SULFUR CONTENT AS FIRED (WT %):	e) TYPICAL ASH CONTENT AS FIRED (WT %):	
f) MAXIMUM CONSUMPTION	GAL/MONTH:	GAL/YEAR:
g) TYPICAL CONSUMPTION	GAL/MONTH:	GAL/YEAR:

h) FIRING DIRECTION:
☐ HORIZONTAL ☐ TANGENTIAL ☐ OTHER, SPECIFY:

SOLID FUEL FIRING

*24a) SOLID FUEL TYPE (CHECK ALL THAT APPLY): ☐ SUB-BITUMINOUS COAL ☐ LIGNITE COAL ☐ BITUMINOUS COAL ☐ ANTHRACITE COAL ☐ OTHER, SPECIFY:

b) TYPICAL HEAT CONTENT AS FIRED (BTU/LB):	c) TYPICAL MOISTURE CONTENT AS FIRED (WT %):
d) TYPICAL SULFUR CONTENT AS FIRED (WT %):	e) TYPICAL ASH CONTENT AS FIRED (WT %):
f) TYPICAL FINES CONTENT (% LESS THAN 1/8 INCH):	g) IS THE COAL CLEANED? ☐ YES ☐ NO

h) HOW MUCH COAL REFUSE IS IN THE FUEL? (WT %):

i) MAXIMUM CONSUMPTION	TON/MONTH:	TON/YEAR:
j) TYPICAL CONSUMPTION	TON/MONTH:	TON/YEAR:

k) FIRING TYPE (CHECK ONE):

☐ TRAVELING GRATE ☐ SPREADER STOKER % REINJECTION:

☐ CYCLONE ☐ PULVERIZED, TYPE (CIRCLE ONE): WET BOTTOM DRY BOTTOM

☐ HORIZONTALLY OPPOSED ☐ OTHER, SPECIFY:

*NOTE: IF REQUIRED, SUBMIT COPIES OF THOSE PORTIONS OF COAL SUPPLY CONTRACTS WHICH SET FORTH THE SPECIFICATIONS OF THE FUEL AND THE DURATION OF THE CONTRACT. IF THE ACTUAL FUEL FIRED IS A BLEND OF COAL, SUBMIT APPROPRIATE PORTIONS OF ALL FUEL CONTRACTS AND STATE THE MANNER BY WHICH THE FUELS ARE BLENDED AND ACTUALLY FIRED. ATTACH AND LABEL AS EXHIBIT 240-2.

OTHER FUEL FIRING

25a) OTHER FUEL FIRING

	TYPE	SUPPLIER
a)		
b)		

b) TYPICAL HEAT CONTENT (SPECIFY UNITS): a) 80	c) TYPICAL NITROGEN CONTENT AS FIRED (WT %):
d) TYPICAL SULFUR CONTENT AS FIRED (WT %): a) 0.00005	e) TYPICAL ASH CONTENT AS FIRED (WT %):

f) MAXIMUM CONSUMPTION	(SPECIFY UNITS/MONTH):	(SPECIFY UNITS/YEAR):
g) TYPICAL CONSUMPTION	(SPECIFY UNITS/MONTH):	(SPECIFY UNITS/YEAR):

APPLICABLE RULES

26) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., PARTICULATE MATTER, IAC 212.206, <= 0.10 LBS/MMBTU):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)

27) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)

28) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)

29) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)

30) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT :

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)

R008813

31) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 240-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

32) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE – ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

33) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Engineering Calculations

34) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

TESTING, MONITORING, RECORDKEEPING AND REPORTING

35a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
NG flow	MMcf	flowmeter	monthly

35b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
NG Flow	Log		

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

36a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

None

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., OPACITY)?

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR):

36d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☐ NO

IF NO, EXPLAIN:

37) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 240-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS

38) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY

(39)EMISSION INFORMATION

☒ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

REGULATED AIR POLLUTANT		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE EMISSION RATE: [5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	[2]PERMITTED EMISSION RATE: RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:		56.532				( )				56.54
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:		3.702				( )				3.71
	TYPICAL:						( )				
OTHER, SPECIFY:	MAXIMUM:						( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 240-5.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

R008817

(40) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

HAP INFORMATION		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE				ALLOWABLE BY RULE	
NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	[5]RATE OR STANDARD	APPLICABLE RULE
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*40 CFR 61.*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 240-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

R008818

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

41) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:

42) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.

43) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):

44) DISCHARGE HEIGHT ABOVE GRADE (FT):

45) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):

46) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA.

47) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM):	b) TYPICAL (ACFM):
48) EXIT GAS TEMPERATURE	a) MAXIMUM (°F):	b) TYPICAL (°F):

49) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):

50) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)		
b)		
c)		
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

51a) LATITUDE:	b) LONGITUDE:	
52) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

FINAL DRAFT/PROPOSED CAAPP PERMIT
U. S. Steel Corporation - Granite City
I.D. No.: 119813AAI
Application No.: 96030056
October 7, 2003

217/782-2113

REVISED
OPERATING PERMIT

PERMITTEE

U.S. Steel Granite City
Attn: Larry Siebenberger
Route 203 and 20th Street
Granite City, Illinois 62040

Application No.: 95010001 I.D. No.: 119813AAI
Applicant's Designation: Date Received: April 29, 2002
Subject: Production Increase, Renewal
Date Issued: June 25, 2002 Expiration Date: June 25, 2007
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in the allowable production rate of iron (from 2,372,500 to 3,165,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year) as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

1. Prior to issuance of this permit, a draft of this permit has undergone a public notice and comment period, and a public hearing was held.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOFs) shall not exceed 11,000 net tons per day, averaged over any calendar month, and;

b. Total combined production of liquid steel from the BOFs shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(23).

8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis.

9a. The Permittee shall determine the opacity from the openings BOF shop on at least a weekly basis. Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix

A, Method 9 including the requirement that readings be taken by a certified observer.

d. These determinations shall be recorded in a log book, which at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.

10. The Permittee shall follow the BOF operating procedures and requirements specified in attachment A. These requirements are designed to ensure proper operation of the BOF control system. These procedures shall be posted in the BOF pulpit (a.k.a., control room).

11. Flame suppression shall be used and maintained during the entire tapping process.

12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency of the charging and primary hoods:

i. Set point requirements while only a single BOF vessel is in operation;

A. Minimum set point during charging process: 550,000 cfm;

B. Minimum set point during refining process: 650,000 cfm;

C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);

b. i. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the minimum set point shall be 700,000 cfm.

iii. Overlapping operations of the BOF vessels is allowed under the following conditions:

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient

draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. Sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other vessel in order to satisfy condition (A) above.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

E. Condition B and C above shall be part of the Standard Operating Procedure (SOP) of the BOF vessels.

c. The BOF capture system shall be operated at the above minimum set points until and unless the Agency approves a lower minimum set point based on a demonstration that a better level of particulate matter control will occur, except for purposes of emissions testing as related to the set point.

d. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use.

e. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

f. The stack gas flow meter shall be calibrated on at least a quarterly basis.

13a. The Permittee shall operate and maintain the waste gas suction monitor system that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

b. The waste gas suction monitoring system shall be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated and maintained to ensure accurate and useful data.

d. The Permittee shall continuously record the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

14a. The Permittee shall visually inspect at least monthly all visible BOF vessel enclosures, hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating

parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which includes the following:

a. Operating time of the BOF;

b. Operating time of the capture systems and performance parameters, including air flow and fan amperage through the fan motors, gas temperature at inlet to ESP, damper settings, and steam injection rate;

c. Operating time of the ESP and performance parameters, including voltage and amperage of each transformer/rectifier set, number of sections in use;

d. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year;

b. Blast Furnace Gas (BFG) usage: 30,800 million ft^3 per month and 185,030 million ft^3 per year;

c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

a. The date (and time for the gate areas) each road or area was treated;

b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the

annual production limits in conditions 2(b) and 6(b).

C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit.

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$mmft^3 \text{ BFG per month} = \frac{(4.585277 \text{ NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft^3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source, and supersede such conditions in cases where a conflict exists.

38a. The following tests shall be performed by no later than August 6, 1997 to demonstrate compliance with the conditions of this permit.

i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Agency for review and approval. This plan shall be describe the specific procedures for testing, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

- Process weight rate and/or fuel usage rate
- Production rate
- Allowable emission limit
- Measured emission rate
- Determined emission factor
- Compliance demonstrated - Yes/No
- Any other pertinent information

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,

- Pertinent process information (e.g. fuel or raw material consumption)

- Control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506

Springfield, Illinois 62794-9506

REPORTING

39. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois EPA
Bureau of Air
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

40. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Iron and steel production (tons/month and tons/yr, each);

b. Natural gas and BFG usage ($mmft^3$/month and $mmft^3$/yr, each);

c. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF MAJOR SOURCE RULES

41a. As a consequence of the above conditions, this permit is issued based upon the following changes in emissions, as further described in Table 6, accompanying increased production as allowed by this permit:

i. The increases in emissions of lead and VOM are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration;

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 Ill.

Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO_2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

* Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	- 52.0	238.8	476.0	5,685	59.3	0.54

* Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

* Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

* Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

* Significant Levels:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

d. This revised operating permit issued January 5, 1999 is issued such that the net increase in emissions of PM, PM_{10}, SO_2, NO_x and VOM resulting from increased natural gas combustion are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of significant Deterioration. The accounting of the increases in emissions are shown in Tables 7, 8 and 9 of the attachments.

e. The changes in emissions pertinent to the revised operating permit issued January 5, 1999 are summarized as follows:

* Emission increase from increased natural gas combustion:

PM-10	PM	NO_x	SO_2	CO	VOM
3.43	3.43	205.94	0.40	26.92	1.88

* Natural gas combustion baseline emissions (average of 1996 and 1997 actuals):

PM-10	PM	NO_x	SO_2	CO	VOM
2.9	2.9	174.11	0.34	22.76	1.59

* Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM

0.53	0.53	31.83	0.06	4.16	0.29

* Significant levels:

PM-10	PM	NO_x	SO_2	CO	VOM
15	25	40	40	100	40

Explanatory Note:

PM	=	Particulate matter = particulate;
PM-10	=	Particulate matter less than or equal to 10 micrometers in size;
SO_2	=	Sulfur dioxide;
NO_x	=	Nitrogen oxides;
VOM	=	Volatile organic material;
CO	=	Carbon monoxide;
mm	=	Million;
gr/dscf	=	Grains per dry standard cubic foot;
acfm	=	Actual cubic feet per minute;
mmcf	=	Million cubic feet;
Mgal	=	Thousands of gallons.

If you have any questions on this permit, please call Kevin Smith at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:jar

cc: IEPA, FOS Region 3

FINAL DRAFT/PROPOSED CAAPP PERMIT
U. S. Steel Corporation - Granite City
I.D. No.: 119813AAI
Application No.: 96030056
October 7, 2003

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping)- captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO_2	0.2006	422.0
NO_x	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - Uncaptured fugitives

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.031	49.06
PM-10	0.0155	24.53
SO_2	0.0104	21.94
NO_x	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO_2	0.0100	15.83

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.02548	40.32
PM-10	0.02548	40.32
SO_2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00279	6.01
PM-10	0.00279	6.01

2. TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack (charge, refine, tap)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.16	262.80
PM-10	0.16	262.80
NO_x	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.1934 lbs/hr	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0987	176.71
PM-10	0.06614	118.40
Lead	0.0129 lbs/hr	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.03721	58.88
PM-10	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09 tons/yr

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00032	0.57
PM-10	0.00032	0.57

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0016	2.86
PM-10	0.0016	2.86

6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0050	7.94
PM-10	0.0050	7.94

3. TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Throughput = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00715	12.80
PM-10	0.00715	12.80

2. Deslagging Station and Material HS.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00355	6.35
PM-10	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.006	10.74
PM-10	0.006	10.74
NO_x	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00852	15.25
PM-10	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0071	12.71
PM-10	0.0071	12.71

6. Slab Ripping

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00722	12.92
PM-10	0.00722	12.92

TABLE 4

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)

2. 2 boilers (#'s 11 - 12)

3. Blast Furnace Stoves A & B.

4. BFG Flares

5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage ($mmft^3/Yr$)
NATURAL Gas (Total)	1,346
BFG	185,030
Fuel Oil	365 thousand gallons/yr

1. Natural Gas

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	5.1	3.43
PM-10	5.1	3.43
SO_2	0.6	0.40
NO_x	306	205.94
VOM	2.8	1.88
CO	40	26.92

2. BFG

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	2.9	268.29
PM-10	2.9	268.29
SO_2	6.65	615.22
NO_x	5.28	488.48
CO	13.7	1,267.46

3. Fuel Oil

Pollutant	Emission Factor (Lbs/Mgal)	Maximum Emissions (Tons/Yr)
PM	9.72	1.77
PM-10	9.72	1.77
SO_2	141.3	25.79
NO_x	55	10.04
VOM	0.28	0.05
CO	5.0	0.91
Lead	0.336	0.06 (waste oil)

4. TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

Units = tons/year

	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
Blast Furnace Operations	218	194	474	24	157	-----	----
BOF Shop	510	451	---	70	12	16,097	1.43
Continuous Casting Operations	71	71	---	90	---	-----	----
Certain Fuel Combustion Units[A]	274	274	641	706	2	1,295	0.06
Roadways	27	27	---	---	---	-----	----
Material Handling	2	2	---	---	---	-----	---
Total	1,102	1,019	1,115	890	171	17,392	1.49

[A] Blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

FINAL DRAFT/PROPOSED CAAPP PERMIT
U. S. Steel Corporation - Granite City
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Application No.: 96030056
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TABLE 9

1997 Emissions from an Allowable Natural Gas Usage of 1,145 $mmft^3/Yr$

Pollutant	Emissions (Tons/Yr)
PM	2.92
PM-10	2.92
SO_2	0.34
NO_x	175.19
VOM	1.60
CO	22.9

KLS:jar

ATTACHMENT A

PROCEDURES TO ENSURE PROPER OPERATION
OF BOF ESP CONTROL SYSTEM

1. The emissions control operator shall:

   a. Check on a regular basis and report to the emissions control foreman or melter:

      i. Any ESP fields down;

      ii. Any ESP fields in which the meter readings are showing no current or a fault;

   b. Check on a regular basis that doors on all hopper screws are closed;

   c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.

2. The melter shall:

   a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;

b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;

c. Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:

i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;

ii. Check the stack gas pulpit set point for proper setting;

iii. Call the emissions control operator who shall perform the following steps;

A. Check the AVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;

B. Check to ensure that doors on all hopper screws are closed;

d. Check oxygen blow rates and adjust, if necessary;

e. Check hot metal chemistry;

f. A log shall be maintained of the above checks and any actions taken as a result.

3. The emission control foreman shall:

a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;

b. Check on a regular basis the draft rate set points;

c. Check on a regular basis primary and secondary damper settings;

d. Check on a regular basis ESP operation, including the following:

i. Fields down;

ii. Fields indicating shorts and unable to reset;

iii. Hopper screw doors are closed;

e. Check on a regular basis blow rates;

f. Check on a regular basis spray water system operation;

g. Check on a regular basis steam injection rate;

h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;

i. Contact the area manger for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;

j. Notify the emissions control operator and melter when isolation work begins;

k. A log shall be maintained of the above checks and any actions taken as a result.

4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:

a. Use controlled pouring of the hot metal into the BOF vessel;

b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;

c. Use the most beneficial furnace tilt angle;

d. These procedures shall be posted in the crane operator booth.

ATTACHMENT B

ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND MAPS SHOWING THE ROAD SEGMENTS

This appendix details the emission rate calculations utilized for the ambient air quality modeling conducted. The emission rates modeled are based on the potential to emit of various sources at the facility. The modeled emission rates are based on the maximum potential of each source to emit SO_2 taking into consideration permit limitations and physical limitations of each source.

Table C-1 details the existing and permitted (but not constructed) emission units at the Facility that have potential SO_2 emissions. Table C-1 also details the SO_2 emission limits in the SO_2 FESOP (Permit No. 94120017) and the Production Increase Permit (Permit No. 95010001). SO_2 limits detailed in the SO_2 FESOP Permit are limitations on COG combustion from specific units or groups of units. SO_2 emissions from combusting other fuels are not limited under the SO_2 FESOP permit. The Production Increase Permit limits SO_2 emissions from process emission units and fugitive emission points. SO_2 emission limits shown in Table C-1 for proposed sources such as the BFG boiler and the COG desulfurization system are based on either proposed emission rates or permit limitations for these sources.

Because SO_2 limits in the SO_2 FESOP do not include emissions from BFG or NG, modeled emission rates were adjusted up from the COG SO_2 limit to account for the maximum BFG or NG SO_2 emissions possible when burning more than one fuel. For all other units and all other averaging periods, modeled SO_2 emission rates were based on the maximum SO_2 emissions for that averaging period. Calculations for the modeled SO_2 emission rate for each emission unit are detailed below.

SO_2 emission rates were calculated utilizing the SO_2 emission factors detailed in Table C-2 and the heat capacities for the individual fuels (560 MMBtu/MMscf for COG, 80 MMBtu/MMscf for BFG, and 1000 MMBtu/MMscf for NG).

Table C- 1: Facility SO_2 Emission Limits

Stack Number	Description	Throughput	Maximum Design Rate	Design Rate Units	SO_2 Emission Limits 3-hour (lb/3-hr)	24-hour (lbs./day)	Annual (tpy)
BF0007S	BF A Stove	COG/BFG/NG	399.00	MMBtu/hr		19,774	3,609
BF0012S	BF B Stove	COG/BFG/NG	457.00	MMBtu/hr			
BF0011S	BFG Flare	BFG	720.00	MMBtu/hr			
BF0111S	BFG Flare 2	BFG	720.00	MMBtu/hr			
UT0053S	Boiler 1 to 7	COG/BFG/NG	420.00	MMBtu/hr		20,285	3,702
UT0054S	Boilers 8 to 10	COG/BFG/NG	180.00	MMBtu/hr			
UT0059S	Boiler 11	COG/BFG/NG	225.00	MMBtu/hr		20,584	3,756
UT0064S	Boiler 12	COG/BFG/NG	225.00	MMBtu/hr			
BP0097S	COG flare	COG	661.80	MMBtu/hr			
CO0071S	Battery A Underfire	COG/NG	175.00	MMBtu/hr			
CO0092S	Battery B Underfire	COG/NG	175.00	MMBtu/hr			
FIN0016S	HS Slab Furnace 1	COG/NG	322.00	MMBtu/hr	2,299	9,754	987
FIN0020S	HS Slab Furnace 2	COG/NG	322.00	MMBtu/hr			
FIN0024S	HS Slab Furnace 3	COG/NG	322.00	MMBtu/hr			
FIN0028S	HS Slab Furnace 4	COG/NG	380.00	MMBtu/hr		11,873	1,204
BF0010S	Casthouse Baghouse	Iron	9,849	tons per day		3,430	422
BF0150S	Ironspout Baghouse	Iron	9,849	tons per day		170	13.89
BOF0149S	Ladle Dryers	COG/NG	100.00	MMBtu/hr	555	2,786	509
CC0084S	Slab Cutting 1	NG	0.30	MMBtu/hr			
CC0145S	Slab Cutting 2	NG	0.30	MMBtu/hr			
CO0069S	Battery A Pushing	coke	454,000	tons per year			
CO0090S	Battery B Pushing	coke	454,000	tons per year			
BF008S	BF A Fugitives	Iron	4,925	tons per day			21.94
BF0013S	BF B Fugitives	Iron	4,925	tons per day			
BF0126S	Slagpits	Iron	9,849	tons per day			15.83
CC0073P	Slab Ripping	NG	3.11	MMBtu/hr			
Desulf	COG Desulfurization Unit	COG	25	MMcf/day			

Limits in red are from the SO2 FESOP (Permit No. 94120017)
Limits in blue are from the Production Increase Permit (Permit No. 95010001)

Table C-2: SO_2 Emission Factors

Unit Type	Throughput	SO_2 Emission Factor	Emission Factor Units
Combustion	COG	1230.00	lbs/MMscf
Combustion	BFG	16.00	lbs/MMscf
Combustion	NG	0.60	lbs/MMscf
Combustion	Desulfurized COG	177.54	lbs/MMscf
Casthouse Baghouse	Iron	0.20	lbs/ton
Coke Oven Pushing	Coke	0.10	lbs/ton
Iron Spout Baghouse	Iron	0.01	lbs/ton
Blast Furnace Production	Iron	0.01	lbs/ton
Slabcut	NG	0.60	lbs/MMscf
Slab Ripping	NG	0.60	lbs/MMscf
Slag Pits	Iron	0.01	lbs/ton

BF0007S – Blast Furnace 'A' Stoves

The BF Stoves utilize BFG, COG, and NG as fuels and have 24 hour and annual SO_2 limits. Modeled emission rates for the 3-hour averaging period are based on the maximum SO_2 emission rate. Emission rates for the 24-hour period are based on the COG limit for both Blast Furnace stove stacks divided by 2 and the potential BFG contribution at max COG. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate = 399 MMBtu/hour

Max. SO_2 emission rate = 399 * 1230 (lbs. SO_2 / MMscf) / 560 (MMBtu / MMscf) = 876.38 lbs. / hr.

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) / 2 (stoves)+ {399-[limit/24/2(lbs/hour)*560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 16 lbs./MMscf / 80 (MMBtu/MMscf) = 411.96 + 42.35 = 454.31 lbs./hr

Annual emission rate (lbs./hour) = 399 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 126.50 lbs./hr

BF0012S – Blast Furnace 'B' Stoves

The BF Stoves utilize BFG, COG, and NG as fuels and have 24 hour and annual SO_2 limits. Modeled emission rates for the 3-hour averaging period are based on the maximum SO_2 emission rate. Emission rates for the 24-hour period are based on the COG limit for both Blast Furnace

stove stacks divided by 2 and the potential BFG contribution at max COG. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurizatton permit.

Maximum Design Rate – 457 MMBtu/hour

Max. SO_2 emission rate = 457 * 1230 (lbs. SO_2 / MMscf) / 560 (MMBtu / MMscf) = 1003.77 lbs. / hr.

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) / 2 (stoves)+ {457-[limit/24/2(lbs/hour)*560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 16 lbs./MMscf / 80 (MMBtu/MMscf) = 411.96 + 53.95 = 465.91 lbs./hr

Annual emission rate (lbs./hour) = 457 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 144.89 lbs./hr

BF0011S & BF0111S – Blast Furnace Gas Flares

The BFG Flares combust excess BFG that can not be burned in BFG combustion units. The flares do not have any SO_2 limits except emissions from the second flare are limited to burning BFG not combusted by the BFG boiler (Cogen1). Modeled emission rates for all averaging periods are based on the maximum SO_2 emission rates for both flares and do not take into account limits on the second flare for simplicity reasons.

Maximum Design Rate – 720 MMBtu/hour

Max. SO_2 emission rate = 720 * 16 (lbs. SO2 / MMscf) / 80 (MMBtu / MMscf) = 144.00 lbs. / hr.

UT0053S – Boilers 1 through 7

Boilers 1 through 7 utilize BFG, COG, and NG as fuels and have 24-hour and annual SO_2 limits. Modeled emission rates for the 3-hour averaging period are based on the maximum SO_2 emission rate. Emission rates for the 24-hour period are based on the COG limit for Boilers 1 through 7 and 8 through 10 combined prorated based on 7 out of 10 boilers exhausting through this stack and the potential BFG contribution at max COG. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate – 420 MMBtu/hour (7 boilers @ 60 MMBtu / hour each)

Max. SO_2 emission rate = 420 * 1230 (lbs. SO_2 / MMscf) / 560 (MMBtu / MMscf) = 922.50 lbs. / hr.

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) / 10 (boilers)* 7 + {420-[limit/24*7/10 (lbs/hour)*560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 16 lbs./MMscf / 80 (MMBtu/MMscf) = 591.65+30.21 = 621.86 lbs./hr

Annual emission rate (lbs./hour) = 420 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 133.15 lbs./hr

UT0054S – Boilers 8 through 10

Boilers 8 through 10 utilize BFG, COG, and NG as fuels and have 24-hour and annual SO_2 limits. Modeled emission rates for the 3-hour averaging period are based on the maximum SO_2 emission rate. Emission rates for the 24-hour period are based on the COG limit for Boilers 1 through 7 and 8 through 10 combined prorated based on 3 out of 10 boilers exhausting through this stack and the potential BFG contribution at max COG. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate – 180 MMBtu/hour (3 boilers @ 60 MMBtu / hour each)

Max. SO_2 emission rate = 180 * 1230 (lbs. SO_2 / MMscf) / 560 (MMBtu / MMscf) = 396.00 lbs. / hr.

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) / 10 (boilers)*3 + {180-[limit/24*3/10 (lbs/hour)*560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 16 lbs./MMscf / 80 (MMBtu/MMscf) = 253.56 + 12.95 = 266.51 lbs./hr

Annual emission rate (lbs./hour) = 180 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 57.07 lbs./hr

UT0059S & UT0064S – Boilers 11 & 12

Boilers 11 &12 utilize BFG, COG, and NG as fuels and have 24-hour and annual SO_2 limits. Modeled emission rates for the 3-hour averaging period are based on the maximum SO_2 emission rate. Emission rates for the 24-hour period are based on the COG limit for Boilers 11 & 12 combined divided by 2 and the potential BFG contribution at max COG. The annual rate is

based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate – 225 MMBtu/hour

Max. SO_2 emission rate = 225 * 1230 (lbs. SO_2 / MMscf) / 560 (MMBtu / MMscf) = 494.20 lbs. / hr.

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) / 2 boilers + {225 -[limit/24 (lbs/hour) / 2 (boilers) *560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 16 lbs./MMscf / 80 (MMBtu/MMscf) = 428.83 + 6.02 = 434.85 lbs./hr

Annual emission rate (lbs./hour) = 225 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 71.33 lbs./hr

NOTE: The second component of the 24-hr emission rate equation equals 5.95 as written, but appears as 6.02 due to rounding in the calculations.

BP0097S – COG Flare

Because more COG is accounted for in the modeling than can be combusted at any time at the GCW, no emissions are accounted for at the COG Flare.

CO0071S & CO0092S – Coke Oven Battery Underfire

Coke Oven Battery Underfire utilizes COG and a small amount of NG as fuels and has no SO_2 limits. Modeled emission rates for the short term (3-hour and 24-hour) averaging periods are based on the maximum SO_2 emission rate. Because the potential contribution of SO_2 from NG is less than 0.01 lbs./ hr for both batteries combined, emissions from NG are considered insignificant for this unit and excluded from the analysis. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate – 175 MMBtu/hour

Max. SO_2 emission rate = 175 * 1230 (lbs. SO_2 / MMscf) / 560 (MMBtu / MMscf) = 384.38 lbs. / hr.

Annual emission rate (lbs./hour) = 175 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 55.48 lbs./hr

FIN0016S, FIN0020S & FIN0024S – Hot Strip Slab Furnaces 1 through 3

Slab Furnaces 1 through 3 utilize COG and NG as fuels and have 3-hour, 24-hour and annual SO_2 limits. Modeled emission rates for the 3-hour, 24-hour and the annual averaging period are based on the COG limit for Hot Strip Slab Furnaces 1 through 3 combined divided by 3 and the potential NG contribution at max COG.

Maximum Design Rate – 322 MMBtu/hour

3-hr emission rate = Limit (lbs./3hrs) / 3 (hours/3hrs) / 3 furnaces + {322-[limit/3/3 (lbs/hour) * 560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 0.6 lbs./MMscf / 1000 (MMBtu/MMscf) = 255.44 + 0.12 = 255.56 lbs./hr

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) / 3 furnaces + {322-[limit/24 (lbs/hour) / 3 * 560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 0.6 lbs./MMscf / 1000 (MMBtu/MMscf) = 135.47 + 0.16 = 135.63 lbs./hr

Annual emission rate (lbs./hour) = Limit (tpy) * 2000 (lbs./ton) / 8760 (hours/year) / 3 furnaces + {322-[limit*2000/8760 (lbs/hour) / 3 * 560 (MMBtu/MMscf) / 177.54 (lbs/MMscf)]} * 0.6 lbs./MMscf / 1000 (MMBtu/MMscf) = 75.11 + 0.05 = 75.16 lbs./hr

FIN0028S – Hot Strip Slab Furnace 4

Slab Furnace 4 utilizes COG and NG as fuels and has a 24-hour and an annual SO_2 limit. Modeled emission rates for the 3-hour and the 24-hour averaging period are based on the COG limit for Hot Strip Slab Furnace 4 and the potential NG contribution at the COG limit. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate – 380 MMBtu/hour

3-hr emission rate = 600 lbs./hour ***Note: This emission rate was set to ensure that the facility can comply with ambient air quality standards.***

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) + {380-[limit/24 (lbs/hour) * 560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 0.6 lbs./MMscf / 1000 (MMBtu/MMscf) = 494.71 + 0.09 = 494.80 lbs./hr

Annual emission rate (lbs./hour) = 380 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 120.47 lbs./hr

BF0010S– Casthouse Baghouse

The Casthouse Baghouse controls emissions from Blast Furnace Casting operations on both 'A' and 'B' Blast Furnaces. The baghouse controls particulate emissions, however, because the casting operation emits SO_2, the baghouse emits SO_2 also. Modeled emission rates for all averaging periods are based on the annual Production Increase Permit emission rate limit for emissions from this unit. This limit was set based on the permitted maximum production rate for the blast furnaces and the emission factor in Table A-2.

SO_2 emission rate = 422 (tpy) * 2000 (lbs./ton) / 8760 (hrs/yr) = 96.35 lbs./hr.

BF0150S– Ironspout Baghouse

The Ironspout Baghouse controls emissions from Blast Furnace Casting operations on both 'A' and 'B' Blast Furnaces. The baghouse controls particulate emissions, however, because the casting operation emits SO_2, the baghouse emits SO_2 also. Modeled emission rates for all averaging periods are based on the annual Production Increase Permit emission rate limit for emissions from this unit. This limit was set based on the permitted maximum production rate for the blast furnaces and the emission factor in Table A-2.

SO_2 emission rate = 13.89 (tpy) * 2000 (lbs./ton) / 8760 (hrs/yr) = 3.17 lbs./hr.

BOF0149S– Ladle Drying Preheaters

The Ladle Drying Preheaters are combustion emission sources using COG and NG to heat iron ladles prior to use in the BOF. Emissions from the ladle dryers are based on the SO_2 limits in the SO_2 FESOP for the short term averaging periods. The annual rate is based on the potential emissions from desulfurized COG as a result of the reduced allowable emissions under the COG desulfurization permit.

Maximum Design Rate – 100 MMBtu/hour

3-hr emission rate (lbs./hour) = Limit (lbs./3-hr) / 3 (hours) + {100 -[limit/3 (lbs/hour) *560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 0.6 lbs./MMscf / 1000 (MMBtu/MMscf) = 185.00 + 0.01 = 185.01 lbs./hr

24-hr emission rate (lbs./hour) = Limit (lbs./day) / 24 (hours/day) + {100 -[limit/24 (lbs/hour) * 560 (MMBtu/MMscf) / 1230 (lbs/MMscf)]} * 0.6 lbs./MMscf / 1000 (MMBtu/MMscf) = 116.08 + 0.03 = 116.11 lbs./hr

Annual emission rate (lbs./hour) = 100 (MMBtu / hour) * 177.54 (lbs/MMscf) / 560 (MMBtu/MMscf) = 31.70 lbs./hr

CC0084S & CC0145S – Slab Cutting

The Slab Cutting emission units are combustion emission sources using NG to cut slabs after casting. Emissions from the slab cutters are insignificant based on the use of NG and the very low design rate of the units.

SO_2 emission rate = 0.3 (MMBtu/hr) * 0. 6 (lbs./MMscf) / 1000 (MMBtu/MMscf) = 0.00018 lbs./hr.

CO0069S & CO0090S – Coke Oven Battery Pushing Operations

Coke Oven Battery Pushing Operations consist of the pushing of hot coke from the battery into the quench car for travel to the quench tower. SO_2 emissions are released during the pushing operation as fugitives. Modeled emission rates for all averaging periods are based on the maximum coal processing rate and an older draft AP-42 emission factor for SO_2 from pushing shown in Table A-2. It should be noted that AP-42 no longer reports an SO_2 emission factor for pushing operations and the use of this factor should therefore be considered a conservative estimate.

Maximum Design Rate – 454,000 tons of coal per year per battery

Max. SO_2 emission rate = 454000 (tpy) / 8760 (hrs/yr) * 0.1 (lbs. SO2 / ton coal) (MMBtu / MMscf) = 5.18 lbs. / hr.

BF0008S & BF0013S – Blast Furnace Casting Fugitives

The Blast Furnace Casting Fugitives includes the uncontrolled casting emissions. Modeled emission rates for all averaging periods are based on the annual SO_2 limits for casting fugitives contained in the Production Increase Permit divided between the two Blast Furnaces.

Annual SO_2 limit from casting fugitives = 21.94 tpy

Max. SO_2 emission rate = 21.94 (tpy) * 2000 (lbs. / ton) / 8760 (hrs / yr) / 2 furnaces = 2.50 lbs. / hr.

BF0126S– Blast Furnace Slag Pit Fugitives

The Blast Furnace Slag Pit Fugitives includes the uncontrolled SO_2 emissions emanating from the Blast Furnace Slag Pit. Modeled emission rates for all averaging periods are based on the annual SO_2 limit for slag pit fugitives contained in the Production Increase Permit.

Annual SO_2 limit from slag pit fugitives = 15.83 tpy

Max. SO_2 emission rate = 15.83 (tpy) * 2000 (lbs. / ton) / 8760 (hrs / yr) = 3.61 lbs. / hr.

CC0085S– Slab Ripping

The Slab Ripping emission units are combustion emission sources using NG to rip slabs after casting. Emissions from the slab rippers are insignificant based on the use of NG and the very low design rate of the units.

SO_2 emission rate = 3.17 (MMBtu/hr) * 0.6 (lbs./MMscf) / 1000 (MMBtu/MMscf) = 0.0019 lbs./hr.

Desulf – COG Desulfurization System Stack

The COG desulfurization system stack emits SO_2 emissions during operation of the system at a maximum rate of 66.5 lbs./hr. However, because short term modeled emission rates assume undesulfurized COG, the system stack is not modeled in the short term averaging periods. The modeled emission rate for the annual averaging period assumes maximum continuous operation.

Scenario Modeling

Emissions calculations for the emission scenarios described in section 6.8.2 are outlined in detail below. A table of fuel inputs for each scenario is shown in Table 6-13 (a) – (d). Maximum design rates, emission factors and heat capacities are identical to those used above and shown in Tables C-1 and C-2. These emissions were only used for the 24-hour scenario modeling discussed in section 6.8.2. For emissions that remain the same in multiple scenarios, the calculations are referenced rather than repeated. Modeled emission rates for each scenario are shown in Tables C3-C6. Small variances in emission rates may exist between the calculations and the tables. This is strictly due to rounding differences in the model when converting between g/s and lb/hr.

SCENARIO 1

- Battery A and Battery B at full COG underfire
- Remaining COG to Blast Furnace Stoves "A" and "B" and Ladle Dryer

BF0007S – Blast Furnace "A" Stoves

Maximum Design Rate = 399 MMBtu/hr

COG throughput = 8.04 MMCF/day

BFG throughput = {399 (MMBtu/hr) – 8.04 (MMCF COG/day) / 24(hr/day)* 560 (MMBtu/MMCF)} * 24 (hr/day) / 80 (MMBtu/MMCF)

= 63.43 MMCF/day

COG emissions = 8.04 MMCF/day / 24 (hr/day) * 1230 (lb SO_2 / MMCF)

= 411.96 lb SO_2/hr

BFG emissions = 63.43 MMCF/day / 24 (hr/day) * 16 (lb SO_2 / MMCF)

= 42.29 lb SO_2/hr

SO_2 emission rate = 411.96 + 42.29 = 454.25 lb/hr

BF0012S – Blast Furnace "B" Stoves

Maximum Design Rate = 457 MMBtu/hr

COG throughput = 8.04 MMCF/day

BFG throughput = {457 MMBtu/hr – 8.04 (MMCF COG/day) / 24(hr/day)* 560 (MMBtu/MMCF)} * 24 (hr/day) / 80 (MMBtu/MMCF)

= 80.83 MMCF/day

COG emissions = 8.04 MMCF/day / 24 (hr/day) * 1230 (lb SO_2 / MMCF)

= 411.96 lb SO_2/hr

BFG emissions = 80.83 MMCF/day / 24 (hr/day) * 16 (lb SO_2 / MMCF)

= 53.89 lb SO_2/hr

SO_2 emission rate = 411.96 + 53.89 = 465.85 lb/hr

BF0011S & BF0111S – Blast Furnace Gas Flares

Maximum Design Rate = 720 MMBtu/hr

SO_2 emission rate = BFG emissions = 720 (MMBtu/hr) * 16 (lbs. SO_2 / MMscf) / 80 (MMBtu / MMscf) = 144.00 lb/hr

UT0053S – Boilers 1 -7

Maximum Design Rate = 420 MMBtu/hr

SO_2 emission rate = BFG emissions = 420 (MMBtu/hr) / 80 (MMBtu/MMCF) * 16 (lb SO_2/MMCF) = 84.00 lb/hr

UT0054S – Boilers 8 – 10

Maximum Design Rate = 180 MMBtu/hr

SO_2 emission rate = BFG emissions = 180 (MMBtu/hr) / 80 (MMBtu/MMCF) * 16 (lb SO_2/MMCF) = 36.00 lb/hr

UT0059S & UT0064S – Boilers 11 & 12

Maximum Design Rate = 225 MMBtu/hr (each)

SO_2 emission rate = BFG emissions = 225 (MMBtu/hr) / 80 (MMBtu/MMCF) * 16 (lb SO_2/MMCF) = 45.00 lb/hr (each)

BP0097S – COG Flare

No emissions modeled

CO0071S & CO0092S – Coke Oven Battery Underfire

Maximum Design Rate = 175 MMBtu/hr (each)

SO_2 emission rate = COG emissions = 175 (MMBtu/hr) / 560 (MMBtu/MMCF) * 1230 (lb SO_2 / MMCF) = 384.38 lb/hr (each)

FIN0016S, FIN0020S, FIN0024S – Hot Strip Slab Furnaces 1-3

Maximum Design Rate = 322 MMBtu/hr (each)

SO_2 emission rate = NG emissions = 322 (MMBtu/hr) / 1000 (MMBtu/MMCF) * 0.6 (lb SO_2/MMCF) = 0.19 lb/hr (each)

FIN0028S – Hot Strip Slab Furnace 4

Maximum Design Rate = 380 MMBtu/hr

SO_2 emission rate = NG emissions = 380 (MMBtu/hr) / 1000 (MMBtu/MMCF) * 0.6 (lb SO_2/MMCF) = 0.23 lb/hr

BOF0149S – Ladle Drying Preheaters

Maximum Design Rate = 100 MMBtu/hr

COG throughput = 2.27 MMCF/day

NG throughput = {100 (MMBtu/hr) – 2.27 (MMCF COG/day) / 24 (hr/day) * 560 (MMBtu/MMCF)}* 24 (hr/day) / 1000 (MMBtu/MMCF)

=1.13 MMCF/day

COG emissions = 2.27 (MMCF/day) / 24 (hr/day) * 1230 (lb SO_2 / MMCF)

= 116.08 lb/hr

NG emissions = 1.13 MMCF/day / 24 (hr/day) * 0.6 (lb SO_2 / MMCF)

= 0.03 lb/hr

SO_2 emission rate = 116.08 + 0.03 = 116.11 lb/hr

CC0084S & CC0145S – Slab Cutting

Maximum Design Rate = 0.3 MMBtu/hr

SO_2 emission rate = 0.3 (MMBtu/hr) / 1000 (MMBtu/MMCF) * 0.6 (lb SO_2/MMCF) = 1.8x10(-4) lb/hr

SCENARIO 2

- Battery A and Battery B at maximum COG underfire
- Remaining COG to boilers 1 -10

BF0007S – Blast Furnace "A" Stoves

Maximum Design Rate = 399 MMBtu/hr

SO_2 emission rate = BFG emissions = 399 (MMBtu/hr) / 80 (MMBtu/MMCF) * 16 (lb SO_2/MMCF) = 79.8 lb/hr

BF0012S – Blast Furnace "B" Stoves

Maximum Design Rate = 457 MMBtu/hr

SO_2 emission rate = BFG emissions = 457 (MMBtu/hr) / 80 (MMBtu/MMCF) * 16 (lb SO_2/MMCF) = 91.4 lb/hr

BF0011S & BF0111S – Blast Furnace Gas Flares

Same as Scenario 1

UT0053S – Boilers 1 -7

Maximum Design Rate = 420 MMBtu/hr

COG throughput = 11.54 MMCF/day

BFG throughput = {420 (MMBtu/hr) – 11.54 (MMCF COG/day) / 24 (hr/day) * 560 (MMBtu/MMCF)} * 24 (hr/day) / 80 (MMBtu/MMCF)

= 45.19 MMCF/day

COG emissions = 11.54 MMCF/day / 24 (hr/day) * 1230 (lb SO_2/MMCF)

= 591.65 lb/hr

BFG emissions = 45.19 MMCF/day / 24 (hr/day) * 16 (lb SO_2/MMCF)

= 30.13 lb/hr

SO_2 emission rate = 591.65 + 30.13 = 621.78 lb/hr

UT0054S – Boilers 8 – 10

Maximum Design Rate = 180 MMBtu/hr

COG throughput = 4.95 MMCF/day

BFG throughput = {180 (MMBtu/hr) – 4.95 (MMCF COG/day) / 24 (hr/day) * 560 (MMBtu/MMCF)} * 24 (hr/day) / 80 (MMBtu/MMCF)

= 19.37 MMCF/day

COG emissions = 4.95 (MMCF/day) / 24 (hr/day) * 1230 (lb SO_2/MMCF)

= 253.56 lb/hr

BFG emissions = 19.37 (MMCF/day) / 24 (hr/day) * 16 (lb SO_2/MMCF)

= 12.91 lb/hr

SO_2 emission rate = 253.56 + 12.91 = 266.47 lb/hr

UT0059S & UT0064S – Boilers 11 & 12

Same as Scenario 1

CO0071S & CO0092S – Coke Oven Battery Underfire

Same as Scenario 1

FIN0016S, FIN0020S, FIN0024S – Hot Strip Slab Furnaces 1-3

Same as Scenario 1

FIN0028S – Hot Strip Slab Furnace 4

Same as Scenario 1

BOF0149S – Ladle Drying Preheaters

Maximum Design Rate = 100 MMBtu/hr

NG throughput = 100 (MMBtu/hr) * 24 (hr/day) / 1000 (MMBtu/MMCF)

=2.4 MMCF/day

SO_2 emission rate = NG emissions = 100 (MMBtu/hr) / 1000 (MMBtu/MMCF) * 0.6 (lb SO2/MMCF) = 0.06 lb/hr

CC0084S & CC0145S – Slab Cutting

Same as Scenario 1

SCENARIO 3

- Battery A and Battery B at maximum COG underfire
- Remaining COG to slab furnaces 1-4

BF0007S – Blast Furnace "A" Stoves

Same as Scenario 2

BF0012S – Blast Furnace "B" Stoves

Same as Scenario 2

UT0053S – Boilers 1 -7

Same as Scenario 1

UT0054S – Boilers 8 – 10

Same as Scenario 1

UT0059S & UT0064S – Boilers 11 & 12

Same as Scenario 1

CO0071S & CO0092S – Coke Oven Battery Underfire

Same as Scenario 1

FIN0016S, FIN0020S, FIN0024S – Hot Strip Slab Furnaces 1-3

Maximum Design Rate = 322 MMBtu/hr (each)

COG throughput = 2.64 MMCF/day

NG throughput = {322 (MMBtu/hr) – 2.64 (MMCF COG/day) / 24 (hr/day) * 560 (MMBtu/MMCF)} * 24 (hr/day) / 1000 (MMBtu/MMCF) = 6.25 MMCF/day

COG emissions = 2.64 (MMCF/day) / 24 (hr/day) * 1230 (lb SO_2/MMCF)

= 135.47 lb/hr

NG emissions = 6.25 (MMCF/day) / 24 (hr/day) * 0.6 (lb SO_2/MMCF)

= 0.16 lb/hr

SO_2 emission rate = 135.47 + 0.16 = 135.63 lb/hr

FIN0028S – Hot Strip Slab Furnace 4

Maximum Design Rate = 380 MMBtu/hr

COG throughput = 9.7 MMCF/day

NG throughput = {380 (MMBtu/hr) – 9.7 (MMCF COG/day) / 24 (hr/day) * 560 (MMBtu/MMCF)} * 24 (hr/day) / 1000 (MMBtu/MMCF) = 3.71 MMCF/day

COG emissions = 9.7 (MMCF/day) / 24 (hr/day) * 1230 (lb SO_2/MMCF)

= 494.71 lb/hr

NG emissions = 3.71 (MMCF/day) / 24 (hr/day) * 0.6 (lb SO_2/MMCF)

= 0.09 lb/hr

SO_2 emission rate = 494.71 + 0.09 = 494.8 lb/hr

BOF0149S – Ladle Drying Preheaters

Same as Scenario 2

CC0084S & CC0145S – Slab Cutting

Same as Scenario 1

SCENARIO 4

- Battery A and Battery B at maximum COG underfire
- Remaining COG to boilers 11 and 12

BF0007S – Blast Furnace "A" Stoves

Same as Scenario 2

BF0012S – Blast Furnace "B" Stoves

Same as Scenario 2

UT0053S – Boilers 1 -7

Same as Scenario 1

UT0054S – Boilers 8 – 10

Same as Scenario 1

UT0059S & UT0064S – Boilers 11 & 12

Maximum Design Rate = 225 MMBtu/hr (each)

COG throughput = 8.37 MMCF/day

BFG throughput = {225 (MMBtu/hr) – 8.37 (MMCF COG/day) / 24 (hr/day) * 560 (MMBtu/MMCF)} * 24 (hr/day) / 80 (MMBtu/MMCF) = 8.93 MMCF/day

COG emissions = 8.37 (MMCF/day) / 24 (hr/day) * 1230 (lb SO_2/MMCF)

= 428.83 lb/hr

BFG emissions = 8.93 (MMCF/day) / 24 (hr/day) * 16 (lb SO_2/MMCF)

= 5.95 lb/hr

SO_2 emission rate = 428.83 + 5.95 = 434.79 lb/hr

CO0071S & CO0092S – Coke Oven Battery Underfire

Same as Scenario 1

FIN0016S, FIN0020S, FIN0024S – Hot Strip Slab Furnaces 1-3

Same as Scenario 1

FIN0028S – Hot Strip Slab Furnace 4

Same as Scenario 1

BOF0149S – Ladle Drying Preheaters

Same as Scenario 2

CC0084S & CC0145S – Slab Cutting

Same as Scenario 1

Scenario Emission Rates

Table C-3: Scenario 1

Unit	Description	SO_2 lb/hr
BF0007S	BFAStove	454.29
BF0011S	BFGFlare	143.97
BF0111S	Newflare	143.97
BF0012S	BFBStove	465.88
UT0053S	blrs1to7	83.97
UT0054S	blrs8to10	36.03
UT0059S	boil11	45.00
UT0064S	boil12	45.00
BP0097S	COGflare	0.00
CO0071S	BatAfire	384.37
CO0092S	BatBfire	384.37
FIN0016S	slabfur1	0.16
FIN0028S	slabfur4	0.24
FIN0020S	slabfur2	0.16
FIN0024S	slabfur3	0.16
BF0010S	Csthsbgh	96.35
BF0150S	Ironspot	3.17
BOF0149S	Ladldryr	116.11
CC0084S	slabcut1	0.00
CC0145S	slabcut2	0.00
CO0069S	BatAPush	5.18
CO0090S	BatBPush	5.18

Table C-4: Scenario 2

Unit	Description	SO_2 lb/hr
BF0007S	BFAStove	79.76
BF0011S	BFGFlare	143.97
BF0111S	Newflare	143.97
BF0012S	BFBStove	91.43
UT0053S	blrs1to7	621.76
UT0054S	blrs8to10	266.51
UT0059S	boil11	45.00
UT0064S	boil12	45.00
BP0097S	COGflare	0.00
CO0071S	BatAfire	384.37
CO0092S	BatBfire	384.37
FIN0016S	slabfur1	0.16
FIN0028S	slabfur4	0.24
FIN0020S	slabfur2	0.16
FIN0024S	slabfur3	0.16
BF0010S	Csthsbgh	96.35
BF0150S	Ironspot	3.17
BOF0149S	Ladldryr	0.08
CC0084S	slabcut1	0.00
CC0145S	slabcut2	0.00
CO0069S	BatAPush	5.18
CO0090S	BatBPush	5.18

Scenario Emission Rates

Table C-5: Scenario 3

Unit	Description	SO_2 lb/hr
BF0007S	BFAStove	79.76
BF0011S	BFGFlare	143.97
BF0111S	Newflare	143.97
BF0012S	BFBStove	91.43
UT0053S	blrs1to7	83.97
UT0054S	blrs8to10	36.03
UT0059S	boil11	45.00
UT0064S	boil12	45.00
BP0097S	COGflare	0.00
CO0071S	BatAfire	384.37
CO0092S	BatBfire	384.37
FIN0016S	slabfur1	135.64
FIN0028S	slabfur4	494.77
FIN0020S	slabfur2	135.64
FIN0024S	slabfur3	135.64
BF0010S	Csthsbgh	96.35
BF0150S	Ironspot	3.17
BOF0149S	Ladldryr	0.08
CC0084S	slabcut1	0.00
CC0145S	slabcut2	0.00
CO0069S	BatAPush	5.18
CO0090S	BatBPush	5.18

Table C-6: Scenario 4

Unit	Description	SO_2 lb/hr
BF0007S	BFAStove	79.76
BF0011S	BFGFlare	143.97
BF0111S	Newflare	143.97
BF0012S	BFBStove	91.43
UT0053S	blrs1to7	83.97
UT0054S	blrs8to10	36.03
UT0059S	boil11	434.77
UT0064S	boil12	434.77
BP0097S	COGflare	0.00
CO0071S	BatAfire	384.37
CO0092S	BatBfire	384.37
FIN0016S	slabfur1	0.16
FIN0028S	slabfur4	0.24
FIN0020S	slabfur2	0.16
FIN0024S	slabfur3	0.16
BF0010S	Csthsbgh	96.35
BF0150S	Ironspot	3.17
BOF0149S	Ladldryr	0.08
CC0084S	slabcut1	0.00
CC0145S	slabcut2	0.00
CO0069S	BatAPush	5.18
CO0090S	BatBPush	5.18

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R008872

MEMORANDUM

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
23
AUG 29 2013
REVIEWER JRM

DATE: August 19, 2010

TO: Jason Schnepp, Permits Section, BOA

FROM: Pamela Brooks, Air Quality Planning Section, BOA PB

SUBJECT: U.S. Steel Corporation, Granite City Works. – Granite City, Illinois
Review of Air Quality Impact Analysis
Identification # 119813AAI, Permit No. 95010001

U.S. Steel Corporation, Granite City Works (Granite City Works), located in Granite City, Illinois proposes to modify Permit No. 95010001 known as the Production Increase Permit to correct the emission factors developed for the original application in light of newly identified emission factors. The original permit application was submitted and issued in February of 1996. The proposed emission factor changes will increase SO2 emissions for the combustion of Blast Furnace Gas (BFG) as well as CO and VOM emissions for the combustion of natural gas. There are no physical changes to the plant being proposed. This permit provides for an increase in the permitted emissions of SO2 from firing of blast furnace gas in existing units at the plant. Recent testing of the blast furnace gas has shown higher sulfur content and higher SO2 emissions than allowed in the original 1996 PSD permit. This matter was addressed in a recent Consent Order that addressed various compliance issues at Granite City Works (Consent Order No. 05-CH-750, Third Judicial Circuit, Madison County, entered December 17, 2007). According to this order, US Steel is required to submit a revised PSD permit application to initiate the development of a revised PSD permit to address the actual sulfur content of the blast furnace gas at the plant. The sources of SO2 emissions impacted by the revised production increase analysis include the Blast Furnace Stoves, the Blast Furnace Flare and Boilers 1 – 12.

The conditions of this permit do not affect the conditions of other Construction Permits issued since January 25, 1996. In particular, this permit does not affect conditions of Construction Permit 06070023, issued on January 30, 2008 for a new cogeneration boiler, which would replace existing Boilers 1 through 10. It also does not affect the conditions of Construction Permit 06070088, issued March 13, 2008, for a Conveyor Belt associated with a heat recovery coke plant constructed by Gateway Energy, which permit requires reductions in road dust emissions beyond those required by this permit.

The proposed project is considered a "major stationary source" under the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21(k) and 40 CFR 52.21 (m). The proposed emission increases (adjustments) exceed PSD significance levels for emissions of SO2.

Increases in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration. The potential emission increases after adjusted emission changes for pollutants and their associated PSD thresholds are listed in Table 1 below.

Table 1
Potential Annual Emissions Change for Project

Pollutant	Potential Emissions Increase (tons/year)	PSD Emission Threshold (tons/year)
VOC	0.3	40
PM_{10}	14.3	15
$PM_{2.5}$	-89.2	10
NOx	38.3	40
CO	4.4	100
SO_2	299.2	40
NH_3	0.54	N/A

One requirement of a PSD permit application is that the applicant must perform an air quality impact analysis to demonstrate that the sources will not adversely affect the air quality in the surrounding region. Specifically, the applicant must demonstrate through modeling that emissions from the facility will not cause or contribute to either a violation of the National Air Quality Standard (NAAQS) or an exceedance of the PSD increment. In addition, all PSD permit applicants must address the impact of associated growth in the area, including growth resulting from construction of the source itself. The applicant must evaluate visibility impacts and provide assurances that impacts to soil and vegetation are negligible. URS performed the air quality dispersion modeling to assess these potential impacts.

I have reviewed the modeling analysis received on February 4, 2008 provided by U.S. Steel Corporation and their consultant URS. URS prepared the air quality modeling analysis to assess the impact of the plant's SO_2 emission increases on air quality.

Illinois EPA Review

The following dot-point entries relate my comments about the acceptability of the analysis:

- URS used USEPA's AERMOD model (version 07026) to determine potential impacts from the facility. AERMOD is a federally approved model and is considered to be appropriate for use in an air quality impact analysis of this nature.

- The stack heights proposed for the facility are below Good Engineering Practice (GEP) height, therefore, wake effects from nearby buildings must be considered in the analysis. URS used the PRIME Plume Rise and Building Downwash Model (BPIPPRM, version 04274), to determine building parameters needed for input to the model to address wake effects caused by nearby buildings.

- The area surrounding the proposed site has flat to gently rolling terrain. A URS land-use analysis conducted using the Auer's technique confirmed that the use of the rural dispersion option in AERMOD is appropriate.

- URS ran AERMET to develop meteorological data inputs for AERMOD. Five years (1987 – 1991) of meteorological data were processed and used in this analysis. Surface data from the National Weather Service (NWS) station at St. Louis Lambert Airport (WBAN No. 13994) and upper air data from the NWS station in Peoria, IL (WBAN No. 14842) were used as inputs to AERMET. These sites are considered representative of meteorological conditions expected at the plant's location. URS also used aerial photography to determine surface characteristics within a 3 km radius surrounding Lambert Airport. Surface characteristics were determined by season and divided into two main sectors; one with predominately urban characteristics and the other rural type characteristics. Illinois EPA's modeling audit used surface characteristics generated by AERSURFACE (version 08009) which included additional land use types as well as an updated methodology to derive surface roughness, albedo and daytime bowen ratio values (12 sectors, seasonal). The URS analysis differs in that it used a 3 km, 360 degree radius with a 2 sector split, to represent land-cover type for surface characteristics.

- Emissions were modeled for the worst case load for all modeled sources at the plant.

- Terrain data was integrated into this application using the AERMAP terrain pre-processor module. Elevation data were extracted from 7.5-minute USGS digital elevation model (DEM) files, and receptor-specific elevation and representative terrain-influenced height data were generated by AERMAP and provided for input to AERMOD. This data was used to calculate the base elevations for sources, buildings and receptors in UTM Zone 15, NAD83. The receptor

network consists of a Cartesian grid with 3,131 receptors extending out 10 km from the facility boundary with the following receptor spacing:

- Locations at 50 m spacing along the fenceline of the facility;
- 100 m spacing from the fence line out to 400 m from the east and west fence lines;
- 200 m spacing from the north and south fence lines;
- 500 m spacing from the fence line out 3 km from the source and
- 1 km spacing from the fence line out to the distance where the pollutant concentration continually decreases.

This receptor network was further split into two runs to improve AERMOD run times. The "near-field" modeling contains 100 m, 200 m and 500 m grids and the "far-field" modeling contains the 1000 m grids. This receptor network is considered acceptable by Illinois EPA.

- To address additional impacts, US Steel relied upon the original production increase permit application which concluded that the production increase permit would not produce any adverse additional impacts. This was determined based on an analysis required under 40 CFR 52.21(o). The original analysis included a review of the following:

    1. Impacts on soils and vegetation in the vicinity of the plant resulting from the modification.
    2. Impacts on air quality and visibility in Class I areas within 100 km of the project.
    3. Impacts on endangered and/or threatened species.
    4. Socioeconomic impacts from the surrounding community.

  Analysis of these additional impacts resulting from the production increases were re-analyzed in this application to determine if the revised BFG combustion emission factor as requested in the permit application affected the original analysis determination. It was determined that the revised BFG combustion emission rates would not change the conclusions of the original analysis.

- Impacts to threatened and/or endangered species were addressed by US Steel for this application. The analysis indicates that twenty one species are listed as endangered (11) or threatened (10) within Madison County, Illinois and that none of the species are known to have habitat in or near the industrial facility. Furthermore, according to URS, no impacts to threatened or endangered species are known to have occurred since the permit was issued as a result of the SO2 emissions from the facility.

IEPA Analysis of Modeled Results

Tables 2 – 7 summarize the modeling results for NAAQS and PSD modeling. GCWs' contributions were further evaluated based on event modeling (Seenario3). The results show that GCW's worst-case impacts are well above significant impact levels for all SO2 averaging periods. As a result, further modeling was required.

Table 2
URS – Significant Impact Modeling Results
For GCW Only

Pollutant	Averaging Period	1st High Concentration (ug/m3)	SIL (ug/m^3)
SO2	Annual	33.09	1
	24-hour	294.94	5
	3-hour	633.38	25

Since SO2 emissions are shown to have significant air quality impacts, URS performed a NAAQS analysis that included background sources. Illinois background sources were provided by IEPA as two datasets. One dataset was provided for short –term modeling and a second containing annualized emissions data. In addition, Missouri background sources were provided by the Missouri Department of Natural Resources (MDNR). Background sources within St. Louis City and St. Louis County were screened for exclusion using the 10d = Q methodology.

SO2 monitoring data for assigning background concentrations was obtained from the U.S.EPA AirData website. Background concentrations are based the 3 year arithmetic mean of the second highest monitored 3-hour and 24-hour values for the 2004- 2006 period at the Wood River, IL (54 N. Walcott) monitoring site. The mean annual concentration was also determined for the annual averaging period at this monitor for the same period.

As presented in Table 3, NAAQS modeling resulted in an exceedance of both the short-term and annual SO2 SIL standards. The 3-hour averaging period resulted in 3 receptors in the "far-field" receptor grid exceeding the 3-hour SO2 NAAQS. The 24-hour NAAQS modeling for SO2 resulted in 15 receptors in the "far-field" violating the NAAQS. As with short-term modeling, annual modeling for SO2 also exceeded the NAAQS, (eight receptors in the "far –field" exceeded 80 ug/m3).

Table 3
URS – NAAQS Modeling Results
All Sources with Background

Pollutant	Averaging Period	High 2nd High Concentration (ug/m3)	High 2nd High With Background	NAAQS (ug/m^3)
SO2	Annual	208.76	220.0	80
	24-hour	1305.29	1345.3	365
	3-hour	1960.95	2080.0	1300

Based on the results in Table 3, additional modeling was performed to determined GCW's contribution to the exceedance's. The event culpability model was run for short-term averaging times which included only the violating receptors, and each year was modeled individually within AERMOD. Thresholds for modeling were based upon each NAAQS minus background. The event culpability model output included contributions from GCW sources to each event. These individual source contributions were summed and compared to the PSD significance levels to determine GCW's contribution to each event. For annual SO2 modeling, GCW's contributions were evaluated for the 8 violating receptors and compared to the significant impact level (SIL). This modeling showed no exceedance of the SIL for both the 3-hour and annual averaging periods for each violating receptor. Summary results for GCW contributions to receptors exceeding the standard are presented in Table 4.

Table 4
URS -NAAQS Modeling Results
GCW - Event Modeling

Pollutant	Averaging Period	Highest GCW Contribution to exceedance (ug/m3)	SIL (ug/m^3)
SO2	Annual	< 1	1
	24-hour	> 5	5
	3-hour	<1	25

An additional analysis was performed for the 24-hour averaging time using a 500 m grid added to the "far-field" grid resulting in a total of 73 receptors exceeding the 24-hour NAAQS. Because initial modeling using conservative assumptions resulted in

exceedances. URS developed and modeled using a less conservative approach (lower emissions) in additional model runs. These model runs addressed the initial and overly conservative assumptions of unlimited COG availability. GCW developed four worst case scenarios to address this issue. The highest SO2 emissions were determined to occur for Scenario 3, due to maximum BFG usage and minimal NG usage (COG was constant over the four scenarios) and because BFG has a higher sulfur content than NG. Event modeling was performed using the previously mentioned 500 m receptor spacing overlay to identify those receptors with events for which there was both a NAAQS violation and GCW contribution greater than the significance level. This resulted in only 15 violating receptor locations. Source contributions from GCW emission units were summed for each modeled Scenario 3 exceedance. Table 5 presents the highest modeled GCW contribution to a 24-hour SO2 exceedance from the applicant's submittal and from the IEPA's audit.

Table 5
URS and IEPA Modeling Results
GCW Maximum Contribution to NAAQS
Event Modeling for Scenario 3 (1990)

Pollutant	Averaging Period	Highest GCW Contribution to exceedance (ug/m3)	IEPA Highest GCW Contribution to exceedance (ug/m3)	SIL (ug/m^3)
SO2	24-hour	4.3	5.05	5

URS modeling results show that the GCW contribution is below the SIL, indicating that GCW is not contributing to the NAAQS exceedance at or above the 24-hour significant impact level. IEPA's audit was not able to confirm a H2H value of 4.3 ug/m3. This may be due to the use of IEPA generated (AERSURFACE) surface characteristics and AERMET output files. In addition, a large emission source in Missouri (Ameren Sioux) was incorrectly located and fixed as part of this modeling audit. Culpability modeling produced a H2H value close to the 24-hour SO2 SIL.

Increment modeling was also performed by URS to address increases in emissions above the pre-production increase permit level. The production increase permit resulted in increases in SO2 from four process sources: the Casthouse Baghouse, the Blast Furnace Casthouse uncaptured fugitives, the slag pits and the Iron Spout Baghouse. These sources were not affected by the revised emission factor and were modeled using the same emission rates as in the original application. BFG combustion sources affected by the increase in BFG production and the revised emission factor were determined to be emitting 116.88 lbs of SO2 per hour. This emission rate was applied to each BFG source

equally (7 BFG combustion stacks) causing a gross over-prediction of impacts. As a result, initial modeling shows exceedances of the PSD increment for the SO2 24-hour averaging time. All PSD increment modeling results are based on highest modeled SO2 concentrations and not highest second high values (H2H) as recommended by IEPA for short term averaging times. IEPA's modeling audit resulted in H2H values well below the PSD Increment threshold confirming no exceedance of the PSD Class II Increment. These results are presented in Table 6.

Table 6
URS vs. IEPA PSD Modeling Results
For Granite City Steel

Pollutant	Averaging Period	Highest Concentration (ug/m3)	IEPA H2H Concentration (ug/m3)	PSD Class II Increment (ug/m^3)
SO2	Annual*	20	16.70	20
	24-hour	94	88.36	91
	3-hour	210	138.46	512

*Highest High Value

As a result of URS's maximum modeled 24-hour SO2 impact, additional model runs were developed and included only those violating receptors and associated years. This modeling assumed the full incremental increase in SO2 was emitted from the group of sources instead of on an individual basis, as originally modeled. Modeling also included incremental background emissions from GCW, Missouri and Illinois. The results of this model run, using a source groups approach, are presented in Table 7.

Table 7
URS – PSD Modeling Results
Additional SO2 24-hour PSD Increment Modeling

Pollutant	24-Hour Conc.	Concentration (ug/m3)	Increment (ug/m^3)
SO2	Boiler Group	80	91
	Blast Furnace Group	60	91
	BFG Flare Group	60	91

The results of this source group based modeling show that the production increase from BFG will not result in exceedances of the 24-hour PSD increment.

Conclusion

URS has performed the air quality analysis consistent with Illinois EPA guidelines and the results of the Illinois EPA`s modeling audit provide reasonable confirmation of the applicant`s results. It is important to note that certain modeled concentrations from all sources were found to exceed the SIL and NAAQS for 24-hour SO2. Despite this, GCW source contributions were below the respective SIL, indicating that background sources are causing or contributing to the NAAQS violation. This latter finding was based upon less conservative, but still acceptable modeling approaches performed to determine GCW`s contribution. The modeling audit performed by IEPA also confirms that production increases do no result in an exceedance of the SO2 PSD increments for the various short and long term averaging periods.

cc: Jeff Sprague, Manager, Modeling Unit, AQPS, BOA
Matt Will, Modeling Unit, AQPS, BOA
Chris Romaine, Permit Section, BOA

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R008881

→ 95010001

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

December 31, 2012

CERTIFIED MAIL NO. 7011 3500 0000 1969 3355
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Periods
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until March 31, 2013, to Illinois EPA for the review of the following permit applications:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)
- Implementation of Memorandum of Understanding between U.S. Steel and Illinois EPA (Application #10080015)

Should you have questions or require additional information, please contact Bryan Kresak at (618) 451-3391 or e-mail bmkresak@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

RECEIVED
STATE OF ILLINOIS
JAN 3 2013
Environmental Protection Agency
BUREAU OF AIR

K. Smith

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

September 28, 2012

CERTIFIED MAIL NO. 7011 3500 0000 1969 2853
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Environmental Protection Agency
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Mr. Edwin C. Bakowski, P.E
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until December 31, 2012, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Bryan Kresak at (618) 451-3391 or e-mail bmkresak@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

June 30, 2012

CERTIFIED MAIL NO. 7011 1150 0001 0452 9441
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until September 30, 2012, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Bryan Kresak at (618) 451-3391 or e-mail bmkresak@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
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JUL 02 2012
Illinois Environmental Protection Agency
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STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

March 30, 2012

CERTIFIED MAIL NO. 7011 1150 0001 0452 5757
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until June 30, 2012, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Richard Wiese at (618) 451-3952 or e-mail rwwiese@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013
REVIEWER JRM

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

December 30, 2011

CERTIFIED MAIL NO. 7010 1870 0003 2840 7141
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until March 31, 2012, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Richard Wiese at (618) 451-3952 or e-mail rwwiese@uss.com.

Sincerely,

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

Richard E. Veitch
General Manager

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JAN 06 2012
Illinois Environmental Protection Agency
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

October 18, 2011

CERTIFIED MAIL NO. 7008 1830 0001 1423 2220
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until December 31, 2011, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

EPA-DIVISION OF RECORDS MANAGEMENT
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AUG 22 2013
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OCT 20 2011
Illinois Environmental Protection Agency
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Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

December 30, 2010

CERTIFIED MAIL NO. 7008 1830 0002 8518 2256
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until March 31, 2011, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
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JAN 0 3 2011
Illinois Environmental Protection Agency
Bureau of Air

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

November 5, 2010

CERTIFIED MAIL NO. 7008 1830 0002 8518 1860
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until December 31, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch

Richard E. Veitch
General Manager

EPA - DIVISION OF RECORDS MANAGEMENT
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NOV 09 2010
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STATE OF ILLINOIS

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 - (217) 782-2113

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

October 26, 2010

USEPA, Region 5, A-18J
Attn: Ms. Cheryl Newton
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Re: Proposed Changes to a PSD Approval for United States Steel
Request to Initiate Consultation Under the Endangered Species Act

Dear Ms. Newton:

By this letter, the Illinois EPA is requesting that the USEPA initiate appropriate consultation under the federal Endangered Species Act for an application submitted by the United States Steel - Granite City Works ("US Steel"), for proposed changes to a PSD Approval for a Production Increase Project.

US Steel has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996, for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as a fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by the applicant.

Because the current application involves corrections to the emission information originally provided for the project, the requested revisions are being evaluated using the NSR rules that applied for the original application in January 1996. At that time, Granite City was designated nonattainment for ozone and PM_{10} and attainment for all other pollutants.

Accordingly, with the corrected emission rates for SO_2 and CO, which are higher than in the original application and current PSD approval, this project is still subject to a PSD review as a major modification for SO_2 and CO emissions.

An electronic copy of the application for this project will be e-mailed to Rachel Rineheart and Constantine Blathras of your staff.

If individuals at USEPA have questions about this project or require any assistance from the Illinois EPA in carrying out appropriate consultation, please contact Jason Schnepp at 217/524-3724 or Jason.Schnepp@Illinois.gov.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

cc: P. Blakley
C. Blathras
Jeff Sprague, Illinois EPA
Application File95010001
ID File 119813AAI

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 – (217) 782-2113

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

October 26, 2010

Todd Rettig, Division Manager
Division of Resource Review & Coordination
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

Re: Request for Consultation under the Illinois Endangered Species Protection Act
United States Steel Corporation, Granite City Works – Revision to Construction Permit/PSD Approval for Production Increase Project

Dear Mr. Rettig:

In accordance with the Illinois Endangered Species Protection Act, the Illinois EPA is filing the enclosed Agency Action Report to begin the required consultation process for the above referenced permit application.

United States Steel Corporation – Granite City Works ("US Steel") has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996 for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by US Steel.

An electronic copy of this application will be sent to Mike Branham of your office.

If you have any questions or require additional information, please contact Jason Schnepp at 217/524-3724 or Jason.Schnepp@Illinois.gov. Thank you in advance for your assistance.

Sincerely,

Edwin C. Bakowski

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Enclosures: AAR, Project Location Maps

cc: Jeff Sprague, Illinois EPA
Application File 950100011
ID File 119813AAI

Endangered Species Consultation Agency Action Report

(Illinois Administrative Code Title 17 Part 1075)
Division of Ecosystems and Environment

Date Oct 21, 2010

1. Indicate the government unit and type of action requiring consultation.

☐ Local Government ☒ State Agency

- ◉ Authorization (a unit of state or local government must issue a permit or other authorization)
- ○ Funding (a unit of state or local government will provide a grant, loan, or other direct support)
- ○ Performance (a unit of state or local government is performing the action, such as construction)

Name of government unit Illinois Environmental Protection Agency
Government contact name Jason Schnepp
Address 1021 North Grand Avenue East, Springfield, Illinois 62794-9506
Phone 217-524-3724 Fax 217-524-5023

If local government, is it a county highway or local roads department? ☐ Yes ☐ No

2. Will the project receive technical assistance or funding from the state of Illinois? ☐ Yes ☒ No

If yes, indicate the state agency providing support

Projects receiving state assistance (including federal funding through a state agency) must comply with the Interagency Wetland Policy Act. These projects will be reviewed for wetland impacts.

3. Applicant information

Applicant name United States Steel Corporation - Granite City Works
Contact person Jill Foust
Address 1951 State Street, Granite City, Illinois 62040
Phone 618-451-3391 Fax E-mail jafoust@uss.com

4. Project information and location *(a map showing the location of the proposed action is required)*

Project name Revised Production Increase Project County Madison
Address 1951 State Street
City and zip Granite City 62040
Township/Range/Section (e.g., T45N,R9E,S2) T3N,R9W,S19-20
(Projects cannot be reviewed without the TRS)

Project description US Steel applied for a revision to its Construction Permit/PSD Approval for a Production Increase Project. This permit, which was originally issued on January 25, 1996, authorized increases in iron and steel production at the plant. The requested revision would correct sulfur dioxide emission rates for combustion of blast furnace gas. US Steel also applied for revisions to the permit to correct volatile organic material and carbon monoxide emission rates for combustion of natural gas.

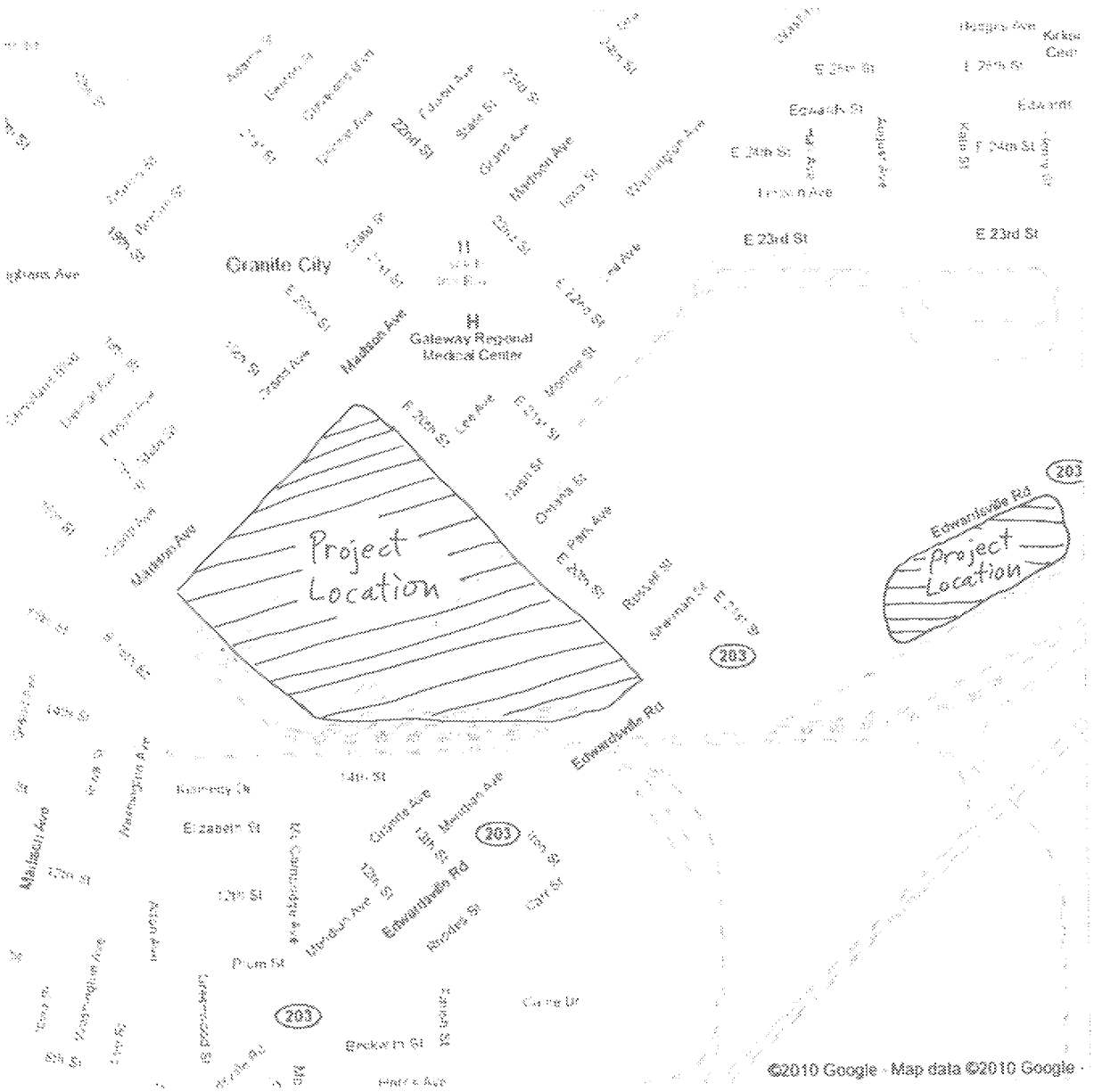
If this is a resubmittal, please provide previous IDNR Project Code

Mail completed form and map of project location to:
Illinois Department of Natural Resources
Division of Ecosystems and Environment
One Natural Resources Way
Springfield, IL 62702

IDNR Use Only
Project Code:

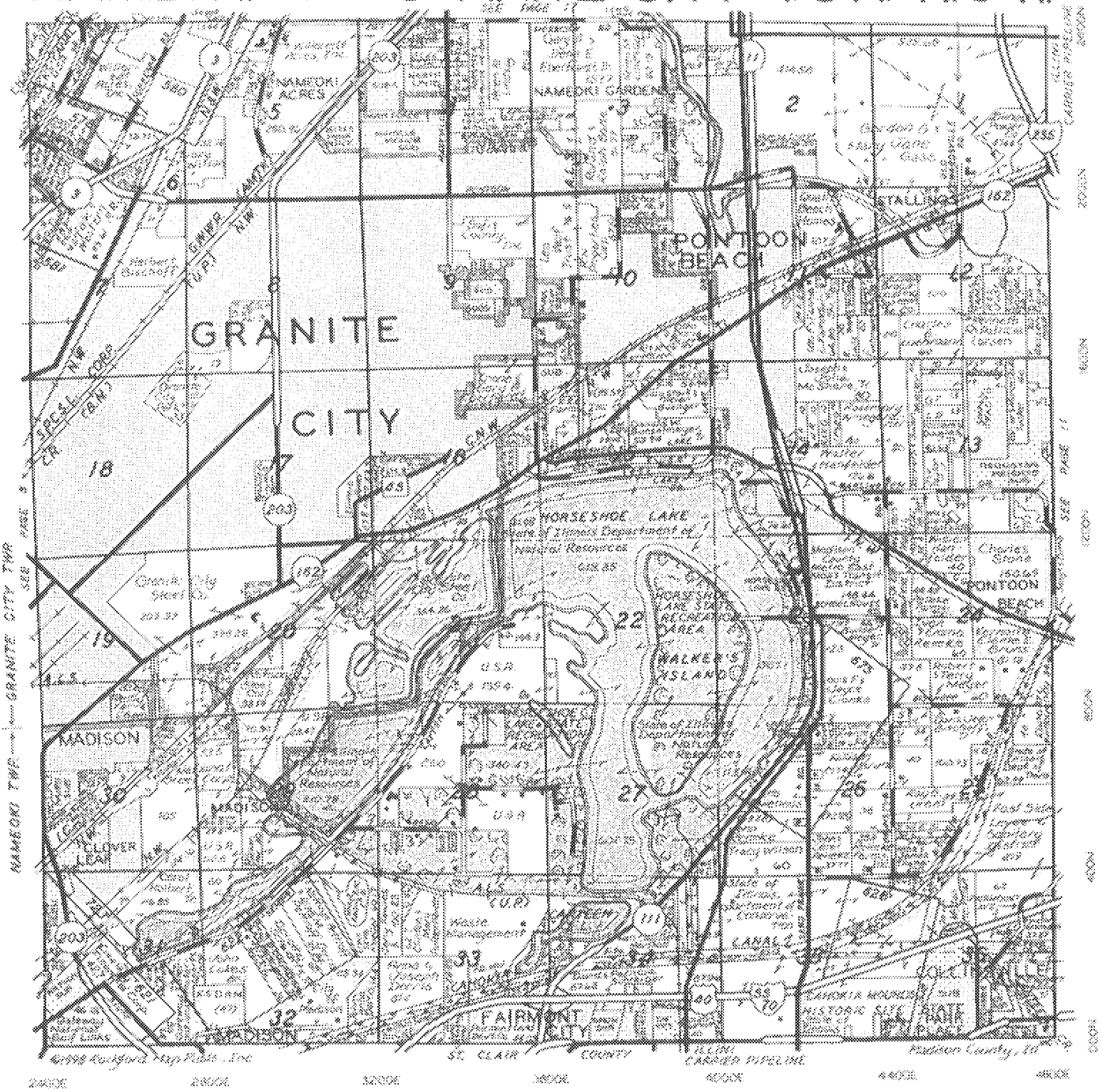
Google maps

Notes



R008893

NAMEOKI SOUTHEAST PART GRANITE CITY T.3N.–R.9W.



Juneau Associates, Inc., P.C.

CONSULTING ENGINEERS AND LAND SURVEYORS

2100 STATE STREET - GRANITE CITY, ILLINOIS 62040 — (618) 877-1400

200 UNIVERSITY PARK DRIVE, SUITE 260 - EDWARDSVILLE, ILLINOIS 62025 — (618) 650-0900

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STORM WATER AND SANITARY SEWAGE SYSTEMS • STREETS AND HIGHWAYS
COMMERCIAL AND INDUSTRIAL DEVELOPMENT • SUBDIVISION AND SITE DEVELOPMENT

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

October 19, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0224 3826
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until November 30, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E Veitch

Richard E. Veitch
General Manager

EPA DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

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OCT 21 2010
Illinois Environmental Protection Agency
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STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

September 30, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0224 3840
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until October 31, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

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OCT 14 2010
Illinois Environmental Protection Agency
DIVISION OF AIR
STATE OF ILLINOIS

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RELEASABLE
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REVIEWER JRM

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

August 9, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0229 6631
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JCOX

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until September 30, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

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AUG 10 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

July 7, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0224 4885
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 27 2013
REVIEWER JRW

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until August 31, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

RECEIVED
JUL 08 2010
Illinois Environmental Protection Agency
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STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

June 14, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0224 4694
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until July 31, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2010
REVIEWER JRM

Sincerely,

Richard E. Veitch
General Manager

RECEIVED
JUN 16 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

May 14, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0224 4793
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

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MAY 17 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASED
AUG 23 2013

REVIEWER JRM

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

April 12, 2010

CERTIFIED MAIL NO. 7008 1830 0001 1423 3098
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Sincerely,

Richard E. Veitch

Richard E. Veitch
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASED
AUG 23 2010
REVIEWER JRM

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APR 14 2010
Illinois Environmental Protection Agency
SURVEY UNIT
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

entered
3-15-10
lp

March 9, 2010

CERTIFIED MAIL NO. 7008 1830 0001 1423 4705
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Sincerely,

Richard E. Veitch

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRW

Richard E. Veitch
General Manager

RECEIVED
MAR 11 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

February 12, 2010

CERTIFIED MAIL NO. 7008 1830 0001 1423 4552
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Sincerely,

Richard E Veitch

Richard E. Veitch
General Manager

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASED
AUG 23 2010
REVIEWER JAM

RECEIVED
FEB 16 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

January 11, 2010

CERTIFIED MAIL NO. 7008 1830 0001 1423 2985
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA, DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until February 28, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch

Richard E. Veitch
General Manager

RECEIVED
JAN 15 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

December 14, 2009

CERTIFIED MAIL NO. 7008 1830 0001 1423 2886
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch

Richard E. Veitch
General Manager

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

November 13, 2009

CERTIFIED MAIL NO. 7008 1830 0001 1423 2734
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

REVIEWER JRM

Dear Mr. Bakowski:

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Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

RECEIVED
STATE OF ILLINOIS
NOV 16 2009
Illinois Environmental Protection Agency
Division of Air

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

October 12, 2009

CERTIFIED MAIL NO. 7008 1830 0000 0229 6471
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Sincerely,

Richard E. Veitch
General Manager

Received
STATE OF ILLINOIS
OCT 13 2009
Environmental Protection Agency

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

September 15, 2009

CERTIFIED MAIL NO. 7008 1830 0000 0229 6860
RETURN RECEIPT REQUESTED

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AUG 23 2013
REVIEWER JRM

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

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STATE OF ILLINOIS
SEP 22 2009
Environmental Protection Agency
BUREAU OF AIR

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

August 17, 2009

CERTIFIED MAIL NO. 7008 1830 0000 0229 6938
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

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AUG 21 2009
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BUREAU OF AIR

Green

Granite City Works
United States Steel
20th & Stain Streets
Granite City, Illinois 62040
(618) 451-3456

June 17, 2009

CERTIFIED MAIL NO. 7008 0500 0001 6671 1422
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until July 31, 2009, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
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AUG 3 2009
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STATE OF ILLINOIS
JUN 23 2009
Environmental Protection Agency
DIVISION OF AIR

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

July 15, 2009

CERTIFIED MAIL NO. 7008 0500 0001 6071 1576
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
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STATE OF ILLINOIS
JUL 20 2009
Environmental Protection Agency
DIVISION OF AIR

U.S.

United States Steel Corporation
Granite City Works
20th & State Street
Granite City, IL 62040
(618) 451-3241
fax: (618)451-3707

Richard E. Veitch
General Manager

May 12, 2009

CERTIFIED MAIL NO. 7008 0500 0001 6071 2719
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Sincerely,

Richard E. Veitch
General Manager

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

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STATE OF ILLINOIS
MAY 14 2009
Environmental Protection Agency
BUREAU OF AIR

United States Steel Corporation
Granite City Works
20th & State Street
Granite City, IL 62040
(618) 451-3241
fax: (618)451-3707

Richard E. Veitch
General Manager

April 15, 2009

CERTIFIED MAIL NO. 7008 0500 0001 6071 1996
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
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Sincerely,

Richard E. Veitch

Richard E. Veitch
General Manager

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

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J.S

119813AAI

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

March 16, 2009

CERTIFIED MAIL NO. 7008 0500 0001 8815 5123
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Sincerely,

Richard E. Veitch
General Manager

EPA-DIVISION OF PERMIT MANAGEMENT
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AUG 22 2013
REVIEWER JRM

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STATE OF ILLINOIS
MAR 23 2009
Environmental Protection Agency
BUREAU OF AIR

JS

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3311
fax 618 451 6797
email skowen@uss.com

Sharon K. Owen
General Manager

February 20, 2009

CERTIFIED MAIL NO. 7007 3020 0000 1237 9573
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

Sharon K. Owen
General Manager

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

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STATE OF ILLINOIS
FEB 23 2009
Environmental Protection Agency
BUREAU OF AIR

JS

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3311
fax: 618 451 3707
email: skowen@uss.com

Sharon K. Owen
General Manager

January 15, 2009

CERTIFIED MAIL NO. 7008 0500 0001 6071 4591
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until February 28, 2009, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

S. K. Owen

Sharon K. Owen
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

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STATE OF ILLINOIS
JAN 20 2009
Environmental Protection Agency
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R008916

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 2241
fax 618 451 3701
email skowen@uss.com

Sharon K. Owen
General Manager

Regional

December 15, 2008

CERTIFIED MAIL NO. 7008 0500 0001 8815 6632
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Sincerely,

SK Owen

Sharon K. Owen
General Manager

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

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United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618-451-3241
fax: 618-451-3707
email: skowen@uss.com

Sharon K. Owen
General Manager

November 13, 2008

CERTIFIED MAIL NO. 7008 0500 0001 8815 6373
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

Sharon K. Owen
General Manager

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STATE OF ILLINOIS
NOV 17 2008
Environmental Protection Agency
BUREAU OF AIR

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013
REVIEWER JRM

R008918

Registered

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3291
Fax 618 451 3707
email: SKOwen@uss.com

Sharon K. Owen
General Manager

October 20, 2008

CERTIFIED MAIL NO. 7008 0500 0001 8815 5352
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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Sincerely,

SKOwen

Sharon K. Owen
General Manager

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STATE OF ILLINOIS
OCT 23 2008
Environmental Protection Agency
BUREAU OF AIR

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013
REVIEWER JRM

R008919

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

September 18, 2008

CERTIFIED MAIL NO. 7008 0500 0001 8815 7059
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Sincerely,

Sharon K. Owen
General Manager

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

RECEIVED
STATE OF ILLINOIS
SEP 22 2008
Environmental Protection Agency
BUREAU OF AIR

JS

Regional

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3241
fax 618 451 3707
email sk@uss.com

Sharon K. Owen
General Manager

August 18, 2008

CERTIFIED MAIL NO. 7008 0500 0001 8815 5970
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until September 30, 2008, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 *or e-mail* lgsiebenberger@uss.com.

Sincerely,

SL Owen

Sharon K. Owen
General Manager

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

RECEIVED
STATE OF ILLINOIS
AUG 20 '08
Environmental Protection
Agency

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United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3311
Fax: 618 451 3747
e-mail: skowen@uss.com

Sharon K. Owen
General Manager

asc

July 22, 2008

CERTIFIED MAIL NO. 7007 3020 0000 1237 8712
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
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Sincerely,

Sharon K. Owen
General Manager

jm

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AUG 23 2013
REVIEWER JRM

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STATE OF ILLINOIS
AUG 25 2008
ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

R008922

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

June 19, 2008

CERTIFIED MAIL NO. 7007 3020 0000 1237 9375
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

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Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

Sharon K. Owen
General Manager

jm

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

RECEIVED
STATE OF ILLINOIS
JUN 23 2008
Environmental Protection Agency
BUREAU OF AIR

Regional

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 6211
Fax: 618 451 3707
email: skowen@uss.com

Sharon K. Owen
General Manager

May 21, 2008

CERTIFIED MAIL NO. 7007 1490 0002 3533 9850
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

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RECEIVED
AUG 22 2013
REVIEWER JRM

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

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- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

Sharon K. Owen
General Manager

jm

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STATE OF ILLINOIS
MAY 28 2008
Environmental Protection Agency
BUREAU OF AIR

Regional 8

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

April 21, 2008

CERTIFIED MAIL NO. 7007 0710 0004 6389 8789
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until May 31, 2008, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

Sharon K. Owen
General Manager

jm

BOA-PERMIT SECTION
RECEIVED
AUG 22 2008
REVIEWER JRV

RECEIVED
STATE OF ILLINOIS
APR 23 2008
Environmental Protection Agency
BUREAU OF AIR

R008925

Region

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618-451-3241
fax: 618-451-3707
email: skowen@uss.com

Sharon K. Owen
General Manager

March 18, 2008

CERTIFIED MAIL NO. 7007 0710 0004 6389 8147
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until April 30, 2008, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Larry Siebenberger at (618) 451-3391 or e-mail lgsiebenberger@uss.com.

Sincerely,

S. K. Owen

Sharon K. Owen
General Manager

jm

EPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

RECEIVED
STATE OF ILLINOIS
MAR 21 2008
Environmental Protection Agency
BUREAU OF AIR

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R008926

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3311
fax: 618 451 3707
email: djrintoul@uss.com

David J. Rintoul
General Manager

February 20, 2008

CERTIFIED MAIL NO. 7007 0710 0005 1642 0820
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Acting Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAi)

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Sincerely,

David J. Rintoul
General Manager

jm

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASED
AUG 23 2013
REVIEWER JRM

RECEIVED
STATE OF ILLINOIS
FEB 25 2008
Environmental Protection Agency
BUREAU OF AIR

Schnepp, Jason

From: Schnepp, Jason
Sent: Wednesday, July 31, 2013 1:03 PM
To: Carter, Sally; Romaine, Chris
Subject: RE: U.S. Steel Permit Appeals 12-62 and 13-53

Available except:

8/8 (all day)
8/15 (all day)
8/16 (all day)

From: Carter, Sally
Sent: Wednesday, July 31, 2013 12:27 PM
To: Romaine, Chris; Schnepp, Jason
Subject: RE: U.S. Steel Permit Appeals 12-62 and 13-53

Jason, availability?

From: Romaine, Chris
Sent: Wednesday, July 31, 2013 11:22 AM
To: Schnepp, Jason
Cc: Carter, Sally
Subject: FW: U.S. Steel Permit Appeals 12-62 and 13-53

Please plan to attend.

Sally:
I am really only available on nine days in August: 13, 14, 16, 21, 22, 23, 26, 27 and 30
If essential, I could sit out a CUSS meeting on either August 28, or 29th.

Beyond that, I will be on vacation from September 23rd through October 15th.

From: Carter, Sally
Sent: Wednesday, July 31, 2013 10:14 AM
To: Romaine, Chris; Reed, Michael; Belogorsky, Anatoly
Subject: FW: U.S. Steel Permit Appeals 12-62 and 13-53

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Please let me know.....

From: Medina, Rachel [mailto:RMedina@atg.state.il.us]
Sent: Wednesday, July 31, 2013 9:39 AM
To: 'Monica T. Rios'
Subject: U.S. Steel Permit Appeals 12-62 and 13-53

Monica,

As we discussed this morning, I would like to set up a meeting with Illinois EPA and U.S. Steel to discuss an agenda for resolving the issues in the above permit appeals.

Please check with your client and let me know whether they have any limitations to their availability in the month of August. I will do the same with the folks at Illinois EPA.

Thank you,
Rachel

Rachel R. Medina
Assitant Attorney General
Office of the Attorney General
Environmental Bureau
500 S. 2nd Street | Springfield, IL 62706
Phone: 217-782-9031 | Fax: 217-524-7740

Please consider the environment before printing this email.

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Schnepp, Jason

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EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
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Rachel R. Medina
Assistant Attorney General
Office of the Attorney General
Environmental Bureau
500 S. 2nd Street | Springfield, IL 62706
Phone: 217-782-9031 | Fax: 217-524-7740

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Schnepp, Jason

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Rachel

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Rachel R. Medina
Assitant Attorney General
Office of the Attorney General
Environmental Bureau
500 S. 2nd Street | Springfield, IL 62706
Phone: 217-782-9031 | Fax: 217-524-7740

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Schnepp, Jason

From: Romaine, Chris
Sent: Tuesday, March 13, 2012 5:37 PM
To: Schnepp, Jason
Subject: RE: US STeel - Production Increase Permit -

FYI – no action is needed at this time.

I think that the revision to the PSD permit needs to go back to the last PSD permit action, which I think is the permit issued in April 2, 1997. This avoids the conversion of the construction permit into an operating permit and subsequent changes that were made to the permit.

From: Schnepp, Jason
Sent: Tuesday, March 13, 2012 10:02 AM
To: Romaine, Chris
Subject: RE: US STeel - Production Increase Permit -

See attached.

From: Romaine, Chris
Sent: Tuesday, March 13, 2012 9:59 AM
To: Schnepp, Jason
Subject: RE: US STeel - Production Increase Permit -

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Yes, an electronic copy would be appreciated.

Thanks

From: Schnepp, Jason
Sent: Tuesday, March 13, 2012 7:14 AM
To: Romaine, Chris
Subject: RE: US STeel - Production Increase Permit -

Identified as "Draft 3/18/2010," saved on 7/5/2011. Let me know if you need a copy.

From: Romaine, Chris
Sent: Monday, March 12, 2012 4:55 PM
To: Schnepp, Jason
Subject: US STeel - Production Increase Permit -

What version of the permit do have electronically, as the starting point for the current changes?

Thanks

Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, March 13, 2012 10:02 AM
To: Romaine, Chris
Subject: RE: US STeel - Production Increase Permit -
Attachments: 95010001 - USS_4.doc

See attached.

From: Romaine, Chris
Sent: Tuesday, March 13, 2012 9:59 AM
To: Schnepp, Jason
Subject: RE: US STeel - Production Increase Permit -

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

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Thanks

R0008934

Copy already in file. Cover page only. JMS 3/13/2012

217/782-2113

CONSTRUCTION PERMIT/PSD APPROVAL REVISED

PERMITTEE

United States Steel Corporation - Granite City Works
Attn: Jill Powis
1951 State Street
Granite City, Illinois 62040

Application No.: 95010001 I.D. No.: 119813AAI
Applicant's Designation: Date Received: February 1, 2008
Subject: Production Increase Project
Date Initial Permit Issued: January 25, 1996
Date Revised Permit Issued: DRAFT 3/16/2010
Location: Granite City Works, Granite City

This Permit is hereby granted to the above designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a Production Increase Project, as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s).

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for the above referenced project, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated thereunder at 40 CFR 52.21 for PSD, and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the findings and conditions that follow.

If you have any questions on this permit, please contact Jason Schnapp at 217/782-2113

Edwin C. Bakowski, P.E. Date Signed:
Manager, Permit Section
Division of Air Pollution Control

ECB:JMS:

cc: USEPA Region 5

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Deleted: OPERATING PERMIT

Deleted: U.S.

Deleted: Larry Biebenberger

Deleted: Route 203 and 20th Street

Deleted: April 10, 2002

Deleted: , Renewal

Comment [JMS1]: This permit has been revised several times. Original issued 1/25/96.

Deleted: June 25, 2007

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Deleted: Expiration Date: June 25, 2007¶

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Deleted: Southeastern Granite City

Deleted: ¶

Deleted: for an increase in the allowable production rate of iron (from 2,372,500 to 3,365,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year)

Deleted: .

Schnepp, Jason

From: Romaine, Chris
Sent: Tuesday, March 13, 2012 9:59 AM
To: Schnepp, Jason
Subject: RE: US STeel - Production Increase Permit -

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Thanks

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To: Romaine, Chris
Subject: RE: US STeel - Production Increase Permit -

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Sent: Monday, March 12, 2012 4:55 PM
To: Schnepp, Jason
Subject: US STeel - Production Increase Permit -

What version of the permit do have electronically, as the starting point for the current changes?

Thanks

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013
REVIEWER JRM

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IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

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To: Schnepp, Jason
Subject: US STeel - Production Increase Permit -

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Thanks

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Schnepp, Jason

From: Mike Dzurinko [MDzurinko@uss.com]
Sent: Friday, August 12, 2011 2:50 PM
To: Schnepp, Jason
Subject: Fw: U. S. Steel - GCW Production Increase Permit
Attachments: pic04757.gif; Current IEPA draft for review 95010001 - USS_redlined-8-12-2011.doc

Jason,

I resending, because I misspelled Illinois in your e-mail address. I apologize for any inconvenience.

Michael G. Dzurinko
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200
Pittsburgh, PA 15222-4211
Tel: (412) 433-5904
Fax: (412) 433-5920

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

----- Forwarded by Mike Dzurinko/Headquarters/USS on 08/12/2011 03:47 PM -----

Mike Dzurinko/Headquarters/USS

08/12/2011 03:46 PM

To: chris.romaine@illinois.gov, jason.schnepp@illinoi.gov

cc: Jill A Foust/GraniteCity/USS@USS, Richard W Wiese/GraniteCity/USS@USS, David W Hacker/Headquarters/USS@USS, Jason K Braxton/Headquarters/USS@USS

Subject: U. S. Steel - GCW Production Increase Permit

Chris/Jason

Please see the attachment below for U. S. Steel's comments on the subject permit. We would like to set up a conference call for some time next week to discuss. There are a few conflicts with availability at this time, so someone from U. S. Steel will contact you on Monday to set up the call. In addition to our redline/comments we would like to discuss the following two items:

- The possibility of using Chris's CAAPP permit language for emission factor flexibility (Condition 5.9.1d.i)
- Can the requirements of the Production Increase Permit be incorporated into the CAAPP permit through administrative procedures or does the CAAPP permit need to be modified and noticed for public comment? If the requirements can not be incorporated administratively, can both permits be noticed for public comment at the same time.

If you have any questions, please give me a call.

Thanks,
Mike

Michael G. Dzurinko
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200

Pittsburgh, PA 15222-4211
Tel: (412) 433-5904
Fax: (412) 433-5920

(See attached file: Current IEPA draft for review 95010001 - USS_redlined-8-12-2011.doc)

2/7/2002 2:11 PM

REVISED

PERMITTEE

Granite City Steel 1951 Edison Granite City, IL 62040
Attn: Jeff Ross
Environmental Engineer
Granite City, Illinois 62040

Application No.: 95010001 I.D. No.: 119013AAI
Applicant's Designation: Date Received: February 14, 2001
Subject: Production Increase
Date Permit Issued: January 28, 2002
Date Permit Revised (Issued): January 28, 2002
Location: Granite City Works, Granite City

Now Permit is hereby granted to the above-designated Permittee to construct a new 12 million ton per year coke oven battery consisting of 100 ovens, as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

1. Pursuant to the Clean Air Act Permit Program, this permit is issued and shall be subject to conditions contained herein for the construction of a new 12 million ton per year coke oven battery consisting of 100 ovens. The emissions from the new coke oven battery shall not exceed the following limits: Particulate Matter (PM) 0.10 lb/ton of coke produced, Particulate Matter less than 10 microns (PM10) 0.10 lb/ton of coke produced, Sulfur Dioxide (SO2) 0.10 lb/ton of coke produced, Nitrogen Oxides (NOx) 1.5 lb/ton of coke produced, Carbon Monoxide (CO) 0.6 lb/ton of coke produced, Volatile Organic Compounds (VOM) 0.04 lb/ton of coke produced, Benzene 0.0075 lb/ton of coke produced, Benzo(a)pyrene 0.0002 lb/ton of coke produced, Hydrogen Sulfide (H2S) 0.0023 lb/ton of coke produced, Hydrogen Chloride (HCl) 0.0023 lb/ton of coke produced, Lead 0.0001 lb/ton of coke produced, Mercury 0.0001 lb/ton of coke produced, Arsenic 0.0001 lb/ton of coke produced, Beryllium 0.0001 lb/ton of coke produced, Cadmium 0.0001 lb/ton of coke produced, Chromium 0.0001 lb/ton of coke produced, Manganese 0.0001 lb/ton of coke produced, Nickel 0.0001 lb/ton of coke produced, Selenium 0.0001 lb/ton of coke produced, Dioxins/Furans 0.0000000001 lb/ton of coke produced, Total HAPs 0.0075 lb/ton of coke produced, Single HAP 0.0023 lb/ton of coke produced, Opacity 20%, Coke Oven Door Leaks 4%, Topside Port Leaks 1%, Offtake Piping Leaks 1%, Charging Emissions 20 seconds per charge, Pushing Emissions 40 seconds per push, Quenching Emissions 0.03 lb/ton of coke produced, Particulate Matter 0.03 lb/ton of coke produced, Particulate Matter less than 10 microns 0.03 lb/ton of coke produced, Sulfur Dioxide 0.03 lb/ton of coke produced, Nitrogen Oxides 0.03 lb/ton of coke produced, Carbon Monoxide 0.03 lb/ton of coke produced, Volatile Organic Compounds 0.03 lb/ton of coke produced, Benzene 0.03 lb/ton of coke produced, Benzo(a)pyrene 0.03 lb/ton of coke produced, Hydrogen Sulfide 0.03 lb/ton of coke produced, Hydrogen Chloride 0.03 lb/ton of coke produced, Lead 0.03 lb/ton of coke produced, Mercury 0.03 lb/ton of coke produced, Arsenic 0.03 lb/ton of coke produced, Beryllium 0.03 lb/ton of coke produced, Cadmium 0.03 lb/ton of coke produced, Chromium 0.03 lb/ton of coke produced, Manganese 0.03 lb/ton of coke produced, Nickel 0.03 lb/ton of coke produced, Selenium 0.03 lb/ton of coke produced, Dioxins/Furans 0.03 lb/ton of coke produced, Total HAPs 0.03 lb/ton of coke produced, Single HAP 0.03 lb/ton of coke produced, Opacity 0.03%, Coke Oven Door Leaks 0.03%, Topside Port Leaks 0.03%, Offtake Piping Leaks 0.03%, Charging Emissions 0.03 seconds per charge, Pushing Emissions 0.03

FINDINGS FOR REVISED PERMIT

1. United States Steel Corporation Granite City Works (US Steel) applied for a revision to its Construction Permit/PSD Approval for a Production Increase Project. This permit, which was originally issued on January 25, 1996, authorized increases in iron and steel production at the plant. The requested revision would correct sulfur dioxide (SO_2) emission rates for combustion of blast furnace gas. US Steel also applied for revisions to the permit to update volatile organic material (VOM) and carbon monoxide (CO) emission factors for combustion of natural gas. No additional increases in production or modifications are authorized by this permit revision.

2a. Because this revision involves correction to the emission information originally provided for the project, this revision has been evaluated using the New Source Review (NSR) rules that applied for the original permit application. At that time, the area in which the plant is located was designated nonattainment for ozone and particulate matter less than 10 micrometers (PM_{10}) and attainment for all other pollutants.

b. i. With the corrected emission rates for SO_2 and CO, which are higher than provided in the original application, this project is still subject to a PSD review as a major modification for SO_2 and CO emissions. This is because the corrected net emissions increases for the project are still significant as summarized in Table 6.

ii. This project would still not be subject to PSD for other PSD pollutants as summarized in Table 6.

c. With the corrected emission rates for VOM, the revised net emissions increase for this project still is not subject to 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM). This is because the increase in emissions is still not significant, i.e., the increase of VOM emissions is less than 40 tons/year as also summarized in Table 6.

3a. After reviewing US Steel's request, the Illinois EPA has determined that the application for the revised permit complies with all applicable Illinois Pollution Control Board air pollution control regulations and the applicable provisions of the federal PSD rules.

b. As the units associated with this project which contribute to a significant increase in emissions do not undergo a physical change or change in the method of operation, these units are not subject to BACT.

c. The revised air quality analysis submitted for the project shows that the project will not cause violations of the ambient air quality standards for CO and SO_2.

5. In conjunction with issuance of this revised permit, various changes have also been made to clarify the requirements of this permit, including clarifications of the form of particulate matter that is addressed by various standards and the associated compliance time periods. These changes are not intended to make substantive changes to

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The requirements of this permit.

a. The conditions of this permit supplement the conditions of applicable state operating permits for this source that were in effect on January 25, 1996, when this permit was originally issued. Where a conflict exists between a condition of this permit and a condition of such operating permit, the condition in this permit shall take precedence except as specifically identified.

Comment [MGD2]: This condition should be deleted, because USG NOK has ever issued a Title V operating permit. State operating permits have been superseded by the Title V Permit Shield.

b. The conditions of this permit do not affect the conditions of state construction permits issued since January 25, 1996. In particular, this permit does not affect application of [illegible] to construction permits issued by the [illegible] Agency pursuant to [illegible] which pertain to emission limitations, [illegible] and [illegible] for a [illegible] facility associated with a coal [illegible] project [illegible] by Illinois Power, which pertain to [illegible] of [illegible] objections [illegible] were received in this matter.

c. The applicability of this permit to the other [illegible] of the [illegible] is not [illegible] unless [illegible] for the source.

Unless [illegible] by [illegible] was issued to the source on [illegible] by [illegible] and [illegible] for [illegible] * [illegible] *

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e. A copy of this [illegible] and any Illinois EPA [illegible] of the [illegible] and a [illegible] of this permit [illegible] to be kept at or near the [illegible] for the duration of [illegible] [illegible] to the [illegible] [illegible] [illegible]

CONDITIONS

1. The Illinois EPA is issuing this approval consistent with the specifications and data included in the application. Any significant departure from terms expressed in the application would need to receive prior written authorization of the Illinois EPA.

BLAST FURNACE OPERATIONS (BLAST FURNACES A AND B)

2a. Total combined production of hot metal (molten iron) from the blast furnaces shall not exceed 9,849 net tons per day, averaged over any calendar month.

b. Total combined production of hot metal from the blast furnaces shall not exceed 3,165,000 net tons per year. Compliance with this annual limit set by this permit shall be determined on a calendar year basis, as provided in Condition 32(c).

3a. Particulate matter emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1). For this purpose, particulate matter shall be determined as filterable particulate matter as would be measured by USEPA Method 5, as specified by 35 IAC 212.458.

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(2).

4. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(1).

5. Emissions from Blast Furnace operations shall not exceed the limits in Table 1.

BASIC OXYGEN FURNACE (BOF) SHOP

6a. Total combined production of liquid steel from the BOF shall not exceed 11,000 net tons per day, averaged over any calendar month.

b. Total combined production of liquid steel from the BOF shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(2)(3). For this purpose, PM_{10} emissions shall be determined as filterable particulate matter as would be measured by appropriate USEPA Methods, as specified by 35 IAC 212.106.

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8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis.

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9a. The Permittee shall determine the opacity from the openings in the BOF shop on at least a weekly basis. Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9 including the requirement that readings be taken by a certified observer.

d. These determinations shall be recorded in a log book, which at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.

10. The Permittee shall follow the operating procedures and requirements specified in Attachment A to this [illegible] which were designed to ensure proper operation of the BOF and BOF control system. A copy of these procedures shall be posted in the BOF control room or "Pulpit."

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11. Flame suppression shall be used and maintained on each BOF vessel during the entire tapping process.

Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.

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12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency at the charging and primary hoods:

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1. Set point requirements while only a single BOF vessel is in operation:

   A. Minimum set point during charging process: 550,000 cfm;

   B. Minimum set point during refining process: 650,000 cfm;

   C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);

b. i. During dual operation of BOF vessels (i.e., overlapping BOF operation), the minimum set point for the BOF control system shall be 700,000 cfm.

ii. Overlapping operations of the BOF vessels is allowed under the following conditions, which conditions shall be part of the Standard Operating Procedures (SOP) for the BOF vessels.

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. The draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the draft may begin to be transferred over to the capture system for the other vessel in order to satisfy condition (A) above.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

Note: Conditions 11, 12a, and 12b, will no longer be applicable or will be superseded by the Charging and Tapping Baghouse permit when it is issued.

c. Except for purposes of emissions testing as related to the set point, the BOF capture system shall be operated at or above the applicable minimum set points until and unless the Agency approves a lower minimum set point based on a demonstration that a better level of particulate matter control will occur.

d. i. The Permittee shall calibrate, operate, and maintain a continuous monitor for stack gas flow rate from the BOF Control System (ESP stack) with a continuous strip chart recorder or other continuous recording device for numerical data on a minute by minute basis of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use. This monitor shall be calibrated on at least a quarterly basis.

ii. For each steel production cycle of a BOF vessel, the Permittee shall record the various stack gas flow rates for each process (i.e., for charging, refining and tapping) in the steel production cycle. That is, the Permittee shall be able to

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distinguish the measured flow rate of stack gas during each process during each production cycle.

13a. The Permittee shall operate and maintain the waste gas suction monitor system that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

Deleted: c. The stack gas flow meter shall be calibrated on at least a quarterly basis.

b. The waste gas suction monitoring system shall be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated and maintained to ensure accurate and useful data.

d. The Permittee shall continuously record the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

14a. The Permittee shall visually inspect at least monthly all visible BOF vessel enclosures, hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which include the following:

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a. Operating time of the BOF;

b. Operating time of the capture systems and performance parameters, including air flow and fan amperage through the fan motors, gas

temperature at inlet to ESP, damper settings, and steam injection rate;

c. Operating time of the ESP and performance parameters, including voltage and amperage of each transformer/rectifier set, number of sections in use;

d. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.

18. Emissions from the BOF Shop shall not exceed the limits in Table 2.

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Table 3.

FUEL COMBUSTION UNITS

21. Total fuel usage for blast furnace stoves (Stoves A and B), ~~boiler house boilers (Boilers 1-10)~~, blast furnace boilers (Boilers 11 and 12), existing blast furnace gas flare, and ladle drying preheaters (the subject fuel combustion units) shall not exceed the limits in Table 4(a).

Note: Boilers 1-10 were permanently shutdown in March 2010, in conjunction with construction of the Cogeneration Boiler. (See Finding 6(b).)

22. Emissions from the subject fuel combustion units shall not exceed the limits in Table 4(b), (c), and (d).

b. These limits do not address emissions attributable to burning coke oven gas (COG) in these units.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for maps that summarize the required fugitive dust roadway control measures for various road segments at the plant)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as to eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

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b. Blast Furnace Gas (BFG) usage: 30,830 million ft³ per month and 185,030 million ft³ per year; ¶
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c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year. ¶
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i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in Attachment P (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

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i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas that are not [illegible] [illegible] [illegible] [illegible] [illegible], the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, E, G, J, P, and O shall be swept or flushed at least daily;

ii. Road segments P, V, Z, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and B shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

vii. Notwithstanding the above, roads shall not be considered part of the normal traffic patterns of the source if they are out of service for an extended period or are no longer utilized by the Facilities.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

a. The date (and time for the gate areas) each road or area was treated;

b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

Note: Additional requirements may apply for control of roadline dust from [illegible] roadways in conjunction with the construction of Gateway Energy. (See Finding 6(b).)

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in Conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

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B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in Conditions 2(b) and 6(b).

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C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual production limits in Conditions 2(b) and

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6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

33a. Compliance with opacity limits and measurements of opacity shall be made by opacity observations taken in accordance with the procedures set out in 40 CFR Part 60, Appendix A, Method 9.

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b. The Permittee shall have at least two employees or agents who are certified for and experienced in making opacity observations to the extent that it is reasonably possible to do so, who shall be able to make the opacity observations required by this permit.

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34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, subject to adjustment based upon documented slag and iron losses.

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b. BOF liquid steel production shall be measured by a scale equipped crane, subject to adjustment based upon documented steel production analysis of the continuous casters.

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c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{million ft}^3\text{ BFG per month} = \frac{(4.585277\ \text{NTHM/day} + 498.191)}{80} \times \begin{pmatrix}\text{Number of}\\ \text{days in}\\ \text{that month}\end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage [illegible] as follows: natural gas (total combined million ft³ per month and year); [illegible] and fuel oil (total combined gallons per month and year).

30. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

31. [illegible]

32. This revised permit does not alter the historical requirements for testing of emissions in Condition 26 of the original permit issued January 25, 1995, which required testing that was to be performed by August 8, 1997.

33. [illegible]

REPORTING

34. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the occurrence, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois EPA
Bureau of Air
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

40. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

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Deleted: 31. The special conditions of this permit supersede the special conditions of any existing construction permits for this source, and supersede any condition in order where a conflict exists.
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Deleted: 32. The initial tests shall be performed to demonstrate compliance with applicable rules of this permit.
1. For federal emission rules, the emissions of particulate matter from boiler #11 while burning blast furnace gas shall be measured, and that shall be conducted to verify compliance with the requirements of this permit and the emission factor used in the particulate emissions inventory.
2. For the rule which is to demonstrate a negative pressure [illegible] [illegible] [illegible]

a. Iron and steel production (tons/month and tons/yr, each);

b. Natural gas and BFG usage (mmft³/month and mmft³/yr, each);

c. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF NEW SOURCE REVIEW (NSR)

4la. This permit was originally issued on January 29, 1996 based upon the following changes in emissions, accompanying increased production as allowed by this permit, as further described in Table 6 in the original permit issued for this project:

i. The increases in emissions of VOM and lead are not significant under 35 IAC Part 203 and 40 CFR 52.21, respectively.

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 IAC Part 203 or 40 CFR 52.21.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 IAC Part 203 or 40 CFR 52.21.

Note: The Permittee has also agreed to provide further additional dust control consisting of the sweeping of certain Granite City public streets (See Condition 30) and housekeeping measures in the area below and surrounding the BOF ESP (See Condition 24). Attachment C is a listing of the emission reductions provided by these control measures.

iv. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21. Accordingly, the project is considered a major modification and must comply with the substantive requirements of 40 CFR 52.21 for SO_2 and CO emissions.

b. A separate construction permit, Permit 59110038, issued December 5, 1995, that allowed an increase in usage of natural gas. That permit was issued based on the increases in emissions of PM, PM_{10}, SO_2, NO_x and VOM resulting from increased natural gas combustion, as allowed by that permit, not altering the applicability of NSR to this project. The accounting of the increases in emissions is shown in Tables I, II, and III of that permit.

c. This revised permit 95010038, is issued based on the following incremental increases in permitted emissions with the correction of certain emission data:

i. An increase of 799.2 tons per year of PM.

ii. An increase of 1.1 tons per year of SO_2.

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TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping)- captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.0703~~	111.19
PM_{10}	~~0.0303~~	111.19
SO_2	~~0.2006~~	422.0
NO_x	~~0.0144~~	22.79
VOM	~~0.0946~~	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.031~~	49.06
PM_{10}	~~0.0155~~	24.53
SO_2	~~0.0104~~	21.94
NO_x	~~0.0007~~	1.14
VOM	~~0.0047~~	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,309,581 tons/yr

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.0021~~	5.17
PM_{10}	~~0.0021~~	5.17

4. Slag Pits

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00417~~	6.60
PM_{10}	~~0.00417~~	6.60
SO_2	~~0.0100~~	15.83

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TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.02846~~	40.32
PM_{10}	~~0.02846~~	40.32
SO_2	~~0.0073~~	13.69

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00279~~	6.01
PM_{10}	~~0.00279~~	6.01

7. [illegible]

Pollutant	Emissions (Tons/Yr)
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
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TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack (charge, refine, tap)

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.146~~	262.00
PM_{10}	~~0.146~~	262.00
NO_x	~~0.0385~~	69.63
VOM	~~0.00660~~	10.74
CO	~~0.993~~	16,097.47
Lead	~~0.1934 lbs/hr~~	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.0987~~	176.71
PM_{10}	~~0.06614~~	118.40
Lead	~~0.0139 lbs/hr~~	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.03301~~	58.88
PM_{10}	~~0.03301~~	58.88
VOM	~~0.0010~~	1.58
Lead	~~0.01331 lbs/hr~~	0.09 tons/yr

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00032~~	0.57
PM_{10}	~~0.00032~~	0.57

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TABLE 2 (cont.)

5. Flux conveyor & transfer pits, bin floor

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~[illegible]~~	2.96
PM	~~[illegible]~~	2.96

6. Hot metal charging ladle slag skimmer

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~[illegible]~~	7.94
PM	~~[illegible]~~	7.94

7. Totals

Pollutant	Emissions (Tons/Yr)
PM	[illegible]
PM	[illegible]
HD	[illegible]
[illegible]	[illegible]
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TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00715~~	12.80
PM_{10}	~~0.00715~~	12.80

2. Deslagging Station and Material Handling System.

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00355~~	6.35
PM_{10}	~~0.00355~~	6.35

3. Caster Molds - Casting

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.006~~	10.74
PM_{10}	~~0.006~~	10.74
NO_x	~~0.050~~	89.50

4. Casters Spray Chambers

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00852~~	15.25
PM_{10}	~~0.00852~~	15.25

5. Slab Cut-off

Pollutant	~~Emission Factor (lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.0073~~	12.71
PM_{10}	~~0.0071~~	12.71

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TABLE 3 (cont.)

6. Slab Ripping

Pollutant	~~Emission Factor (Lbs/Ton)~~	Maximum Emissions (Tons/Yr)
PM	~~0.00722~~	12.92
~~PM~~	~~0.00722~~	12.92

7. Totals

Pollutant	Emissions (Tons/Yr)
[illegible]	[illegible]
[illegible]	[illegible]
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TABLE 4

CERTAIN FUEL COMBUSTION UNITS

a. Total combined fuel usage from the subject units

Fuel Type	Maximum Usage	
	Monthly	Annual
Natural Gas (total)	225 million scf	1,346 million scf
BFG	30,800 million scf	185,030 million scf
Fuel Oil	60,000 gallons	365,000 gallons

b. Emissions from Combustion of Natural Gas

Pollutant	~~Emission Factor~~ ~~lbs/million scf~~	Maximum Emissions Tons/Yr
PM	~~5.7~~	3.43
PM_{10}	~~5.7~~	3.43
SO_2	~~0.6~~	0.40
NO_x	~~306~~	205.94
VOM	~~5.5~~	3.70
CO	~~84~~	56.53

c. Emissions from Combustion of Blast Furnace Gas

Pollutant	~~Emission Factor~~ ~~lbs/million cf~~	Maximum Emissions Tons/Yr
PM	~~2.9~~	268.29
PM_{10}	~~2.9~~	268.29
SO_2	~~32.0~~	1,480.24
NO_x	~~5.28~~	488.48
CO	~~13.7~~	1,267.46

d. Emissions from Combustion of Oil

Pollutant	~~Emission Factor~~ ~~lbs/1000 gallons~~	Maximum Emissions Tons/Yr
PM	~~9.72~~	1.77
PM_{10}	~~9.72~~	1.77
SO_2	~~141.3~~	25.79
NO_x	~~55~~	10.04
VOM	~~0.28~~	0.05
CO	~~5.0~~	0.91
Lead (waste oil)	~~0.336~~	0.06

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TABLE 5

SUMMARY OF EMISSIONS FROM MAJOR OPERATIONS AND ACTIVITIES

Operation/Activity	Emission Limits (Tons/Year)						
	PM	PM_{10}	SO_2	NO_x	VOM	CO	Lead
Blast Furnace Operations	218.36	218.36	478.62	2,953	157.10	--	--
BOF Shop	106.70	81.38	--	69.63	21.32	16,097.47	1.43
Continuous Casting Operations	22.75	13.75	--	28.58	--	--	--
Certain Fuel Combustion Units[1]	2,754.45	2,770.49	1,640.43	2,204.46	4.75	1,324.90	0.06
Roadways	27	27	--	--	--	--	--
Material Handling	2	2	--	--	--	--	--
Totals	1,181.27	1,918.53	1,250.09	537.52	272.17	17,422.37	1.49

Notes:

1. Includes emissions associated with combustion of coke oven gas, which are not affected by the increased production of metal and steel.

TABLE 6

OVERALL EVALUATION OF PROJECT NET EMISSIONS CHANGES
(Including Blast Furnace, BOF, Rolling and Pumps)

	Emission (Tons/Year)						
	PM	PM_{10}	SO_2	NO_x	VOM	CO	Lead
Project Emission Changes	-52.0	51.6	-725.2	238.8	59.4	5,689.4	0.54
Contemporaneous Increases	20.3	20.7	0.2	26.0	1.6	11.8	--
Contemporaneous Decreases	58.0	58.0	0.2	226.5	32.8	23.3	--
Net Emissions Change	-89.2	14.3	-725.1	38.3	28.4	5,677.9	0.54
Significance Threshold	25	15	40	40	40	100	0.6
Greater than significant?	No	No	Yes	No	No	Yes	No

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Change in Emissions from Increased Natural Gas Combustion¶

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Baseline Emissions (Average of 1996 and 1997 Actuals)¶

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Emissions ¶

Pollutant

(Tons/Yr)¶

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PM.

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PM_{10}.

2.9¶

SO_2.

0.34¶

NO_x.

174.11¶

VOM

1.59¶

CO.

22.76¶

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Potential Emissions from Natural Gas Usage of 1,340 $mmft^3$/Yr¶

¶

Emissions ¶

Pollutant

(Tons/Yr)¶

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PM

3.47¶

PM_{10}.

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SO_2

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ATTACHMENT A

PROCEDURES TO ENSURE PROPER OPERATION OF THE ESP AND WET CONTROL SYSTEM

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1. The emissions control operator shall:

   a. Check on a regular basis and report to the emissions control foreman or melter:

      i. Any ESP fields down;

      ii. Any ESP fields in which the meter readings are showing no current or a fault;

   b. Check on a regular basis that doors on all hopper screws are closed;

   c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.

2. The melter shall:

   a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;

   b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;

   c. Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:

      i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;

      ii. Check the stack gas pulpit for point for proper setting;

      iii. Call the emissions control operator who shall perform the following steps:

         A. Check the AVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;

         B. Check to ensure that doors on all hopper screws are closed;

   d. Check oxygen blow rates and adjust, if necessary;

   e. Check hot metal chemistry;

ATTACHMENT A (cont.)

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f. A log shall be maintained of the above checks and any actions taken as a result.

3. The emission control foreman shall:

a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;

b. Check on a regular basis the draft rate set points;

c. Check on a regular basis primary and secondary damper settings;

d. Check on a regular basis ESP operation, including the following:

i. Fields down;

ii. Fields indicating shorts and unable to reset;

iii. Hopper screw doors are closed;

e. Check on a regular basis blow rates;

f. Check on a regular basis spray water system operation;

g. Check on a regular basis steam injection rate;

h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;

i. Contact the area manager for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;

j. Notify the emissions control operator and melter when isolation work begins;

k. A log shall be maintained of the above checks and any actions taken as a result.

4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:

a. Use controlled pouring of the hot metal into the BOF vessel;

b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;

c. Use the most beneficial furnace tilt angle;

d. A copy of these procedures shall be posted in the crane operator booth.

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ATTACHMENT B

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ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND MAPS SHOWING THE ROAD SEGMENTS

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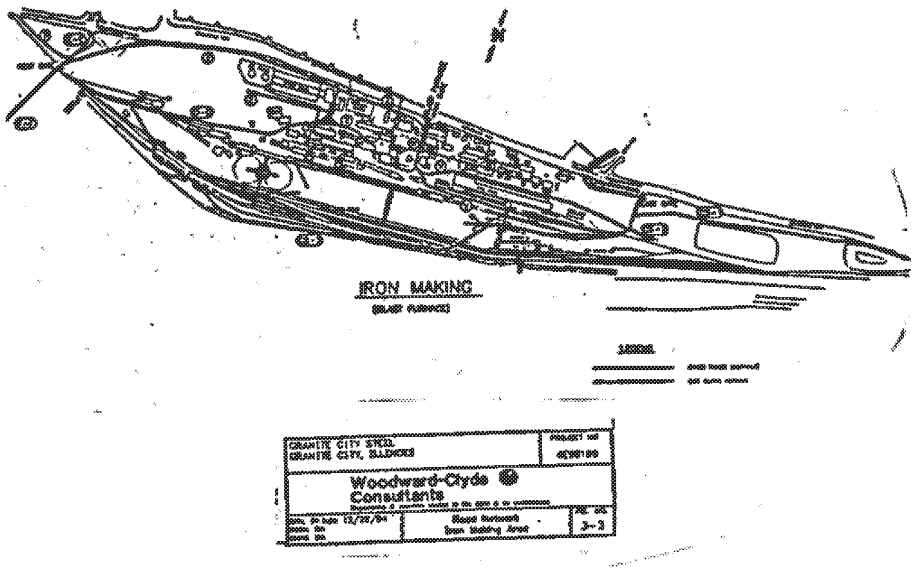

GRANITE CITY STEEL
GRANITE CITY, ILLINOIS

Woodward-Clyde Consultants

Road Network

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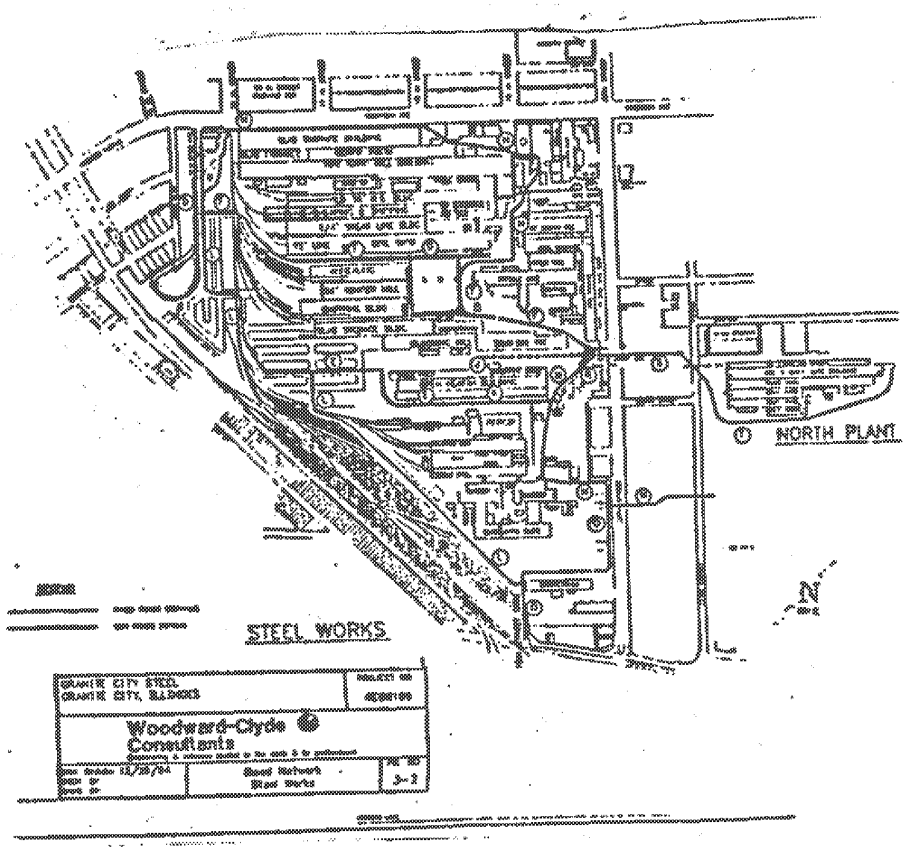
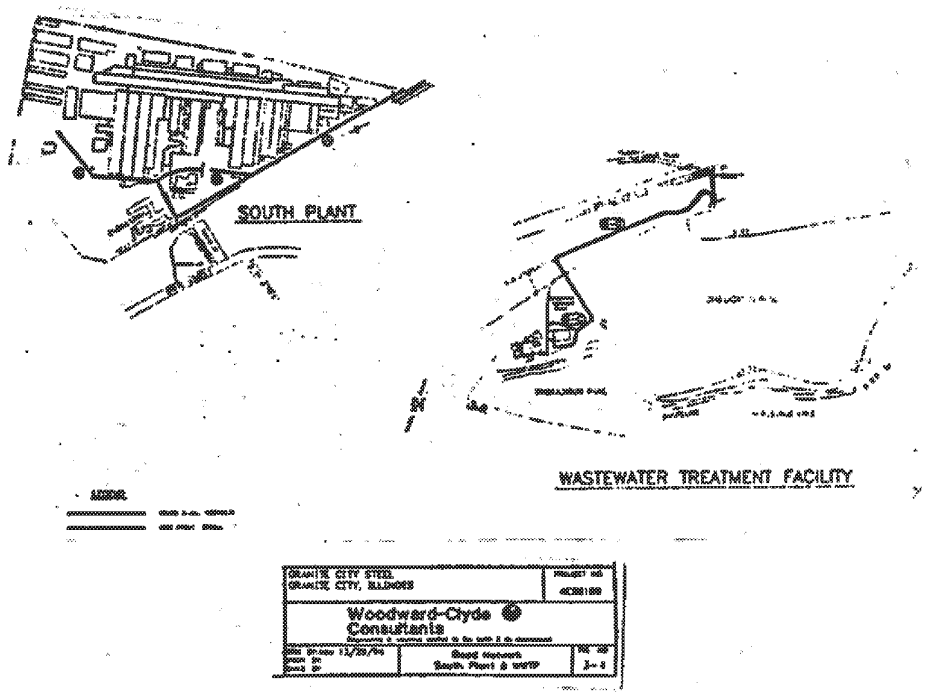


ATTACHMENT B (Cont.)

Comment [MGD10]: Delete this drawing. USS GCW no longer owns or operates the South Plant.



Deleted: §
§

ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE EMISSIONS OF PM-10

- Historic roadway emissions of 108 tons/yr, minus future potential roadway emissions of 27 tons/yr, equals a resulting reduction in roadway emissions of 481 tons/yr.
- Historic material handling emissions of 17 tons/yr minus future potential material handling emissions of 2 tons/yr. equals a resulting reduction in material handling emissions of 15 tons/yr.
- Emission reductions resulting from the sweeping of city streets = 52 tons/yr.*
- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/yr.*

Total reductions in the emissions of PM-10 as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 560 tons/yr.

* These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

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Page 13: [1] Deleted Jason Schnepp 2/11/2010 7:40:00 AM

38a. The following tests shall be performed by no later than August 6, 1997 to demonstrate compliance with the conditions of this permit.

i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Agency for review and approval. This plan shall be describe the specific procedures for testing, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

Page 13: [2] Deleted Jason Schnepp 2/11/2010 7:49:00 AM

v. Any proposed use of an alternative test method, with detailed justification;

shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate
- determined emission factor
- compliance demonstrated - Yes/No
- any other pertinent information

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2511 West Harrison

2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

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As a consequence of the above conditions, t

Page 14: [4] Deleted **Jason Schnepp** **2/11/2010 7:59:00 AM**

as further described in Table 6,

Page 14: [5] Deleted **Jason Schnepp** **2/16/2010 8:25:00 AM**

- Prevention of Significant Deterioration

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- Prevention of Significant Deterioration

Page 14: [7] Deleted **Jason Schnepp** **2/11/2010 8:01:00 AM**

- Prevention of Significant Deterioration

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- Prevention of Significant Deterioration (PSD)

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. These requirements include a demonstration of best available control requirements

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units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met

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c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	- 52.0	238.8	476.0	5,685	59.3	0.54

Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

Other contemporaneous emission increases:

Net emission changes:

PM-10	PM	NO_2	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

Significant Levels:

PM-10	PM	NO_2	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

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are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of significant Deterioration.

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in Tables 7, 8 and 9 of the attachments

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e. The changes in emissions pertinent to the revised operating permit issued January 5, 1999 are summarized as follows:

Emission increase from increased natural gas combustion:

PM-10	PM	NO_2	SO_2	CO	VOM
3.43	3.43	205.94	0.40	26.92	1.88

Natural gas combustion baseline emissions (average of 1996 and 1997 actuals):

PM-10	PM	NO_2	SO_2	CO	VOM
2.9	2.9	174.11	0.34	22.76	1.59

Net emission changes:

PM-10	PM	NO_2	SO_2	CO	VOM
0.53	0.53	31.83	0.06	4.16	0.29

Significant levels:

PM-10	PM	NO_2	SO_2	CO	VOM
15	25	40	40	100	40

Explanatory Note:

PM = particulate matter = particulates;

VOM = volatile organic material;
CO = carbon monoxide;
mm = million;
gr/dscf = grains per dry standard cubic foot;
acfm = actual cubic feet per minute;
mmcf = million cubic feet;
Mgal = thousands of gallons.

If you have any questions on this permit, please call Kevin Smith at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:jar

cc: IEPA, FOS Region 3

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1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

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		$mmft^3/Yr$

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$mmft^3$

Page 22: [21] Deleted **Jason Schnepp** **2/11/2010 8:27:00 AM**

$mmft^3$

Page 22: [22] Deleted **Jason Schnepp** **2/11/2010 9:04:00 AM**

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NATURAL Gas (Total) 1,346
BEG 185,030

Fuel Oil 365 thousand gallons/yr

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Page 22: [42] Deleted **Jason Schnepp** **12/24/2009 8:44:00 AM**

TABLE 4 (cont.)

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TABLE 4 (cont.)

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Blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

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Page 24: [57] Comment [JMS6] Jason Schnepp 1/8/2010 8:23:00 AM

Includes 0.28 (or 0.27) tpy attributable to switching NG VOM factor from 2.8 to 5.5 on 208 mmscf (or 201)

Page 24: [58] Comment [JMS7] Jason Schnepp 1/8/2010 8:23:00 AM

Includes 4.6 (or 4.4) tpy attributable to switching NG CO factor from 40 to 84 on 208 mmscf (or 201).

Totals	1,102	1,015	1,115	890	17

Page 26: [61] Deleted Jason Schnepp 2/11/2010 9:47:00 AM

TABLE 7

Change in Emissions from Increased Natural Gas Combustion

Baseline Emissions (Average of 1996 and 1997 Actuals)

Pollutant	Emissions (Tons/Yr)
PM	2.9
PM_{-10}	2.9
SO_2	0.34
NO_x	174.11
VOM	1.59
CO	22.76

Potential Emissions from Natural Gas Usage of 1,346 $mmft^3/Yr$

Pollutant	Emissions (Tons/Yr)
PM	3.43
PM_{-10}	3.43
SO_2	0.40
NO_x	205.94
VOM	1.88
CO	26.92

Net Emission Change

Pollutant	Emissions (Ton/Yr)	Significant Emissions Level (Tons/Yr)
PM	0.53	25
PM_{-10}	0.53	15
SO_2	0.06	40
NO_x	31.83	40
VOM	0.29	40
CO	4.16	100

KLS:jar

TABLE 8

1996 Actual Emissions from Natural Gas Usage of 1,131 mmft³/Yr

Pollutant	Emissions (Tons/Yr)
PM	2.88
PM_{-10}	2.88
SO_2	0.34
NO_x	172.04
VOM	1.58
CO	22.62

TABLE 9

1997 Emissions from an Allowable Natural Gas Usage of 1,145 mmft³/Yr

Pollutant	Emissions (Tons/Yr)
PM	2.92
PM_{-10}	2.92
SO_2	0.34
NO_x	176.10
VOM	1.60
CO	22.9

NLS:jer

Schnepp, Jason

From: Schnepp, Jason
Sent: Friday, August 05, 2011 2:46 PM
To: 'Jason K Braxton'
Cc: Belogorsky, Anatoly; Romaine, Chris
Subject: RE: U. S. Steel- Granite City Permit-95010001

Jason B.,

I'm not familiar with the acid fog study, so my guess is no. I've copied a couple other people to see if they are familiar with this study.

Thanks.
Jason

From: Jason K Braxton [mailto:JKBraxton@uss.com]
Sent: Friday, August 05, 2011 2:43 PM
To: Schnepp, Jason
Subject: U. S. Steel- Granite City Permit-95010001

Jason,
Sorry to bug you again, forgot to ask you during our previous discussion, but are we required to submit the acid fog study as well?

Thanks,
-Jason

Jason K. Braxton
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200
Pittsburgh, PA 15222-4211
Tel: (412) 433-6544-office
Tel: (205) 296-5093-mobile
Fax: (412) 433-5920 fax
jkbraxton@uss.com

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RELEASABLE
AUG 23 2013
REVIEWER JRM

Schnepp, Jason

From: Jason K Braxton [JKBraxton@uss.com]
Sent: Friday, August 05, 2011 2:43 PM
To: Schnepp, Jason
Subject: U. S. Steel- Granite City Permit-95010001

Jason,
Sorry to bug you again, forgot to ask you during our previous discussion, but are we required to submit the acid fog study as well?

Thanks,
-Jason

Jason K. Braxton
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200
Pittsburgh, PA 15222-4211
Tel: (412) 433-6544-office
Tel: (205) 296-5093-mobile
Fax: (412) 433-5920 fax
jkbraxton@uss.com

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013
REVIEWER JRM

Scott, Jim

From: Schnepp, Jason
Sent: Tuesday, July 05, 2011 2:38 PM
To: Scott, Jim
Subject: RE: US Steel Request Letter.docx

95010001 – thanks.

From: Scott, Jim
Sent: Tuesday, July 05, 2011 2:17 PM
To: Schnepp, Jason
Subject: RE: US Steel Request Letter.docx

What permit number is this?

From: Schnepp, Jason
Sent: Tuesday, July 05, 2011 2:10 PM
To: Jouett, Pam; Scott, Jim
Subject: US Steel Request Letter.docx

Pam or Jim,
Please process the attached final. I will take care of the enclosure.
Thanks.
Jason

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REVIEWER JRM

Schnepp, Jason

From: Romaine, Chris
Sent: Thursday, March 03, 2011 8:54 PM
To: Schnepp, Jason
Subject: FW: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM

fyi

I forgot about the application for revisions to the production increase permit!

-----Original Message-----
From: Romaine, Chris
Sent: Monday, February 28, 2011 12:21 AM
To: Patel, Manish; Smith, Kevin L.
Cc: VonLanken, Vicky
Subject: FW: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM

fyi

An FOIA request related to recent permitting for US Steel.

See the original message from Vicky.

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23
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REVIEWER JRM

-----Original Message-----
From: VonLanken, Vicky
Sent: Friday, February 18, 2011 10:32 AM
To: Romaine, Chris
Cc: Bakowski, Ed
Subject: FW: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM

Chris,
FYI, sorry I forgot to copy you on my original email.

-----Original Message-----
From: VonLanken, Vicky
Sent: Thursday, February 17, 2011 4:01 PM
To: Reed, Michael; Belogorsky, Anatoly
Cc: Bakowski, Ed; Kroack, Laurel
Subject: RE: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM

Yes, but only if they are within the time period of the request and are responsive to what is being requested. Our response is due on March 4 (this date already includes an extension period as allowed by the FOIA statute).

-----Original Message-----
From: Reed, Michael
Sent: Thursday, February 17, 2011 3:50 PM
To: VonLanken, Vicky; Kroack, Laurel; Bakowski, Ed; Kaleel, Rob; Pilapil, Ray; Youngblut, Steven; Johnson, David M.; Bloomberg, David E.; Kaleel, Rob
Cc: Belogorsky, Anatoly
Subject: RE: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM

I have material that will need to be gone through and sorted yet. In addition, Anatoly also has information that will need to be gone through.

Are we supposed to be compiling all of our email as well?

-----Original Message-----
From: VonLanken, Vicky
Sent: Thursday, February 17, 2011 3:06 PM
To: Kroack, Laurel; Bakowski, Ed; Reed, Michael; Kaleel, Rob; Pilapil, Ray; Youngblut, Steven; Johnson, David M.; Bloomberg, David E.; Kaleel, Rob
Subject: FW: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM
Importance: High

Please let me know if you or someone in your section has any documents or information responsive to this request that will not be contained in the facility file in the Bureau's file room. Also please forward this to anyone that I may have missed that may have any responsive information.

Note: I am forwarding this request to legal for them to provide any information they may have that is not contained in the Bureau's file room.

-----Original Message-----
From: Louis Baer [mailto:labaer@wulaw.wustl.edu]
Sent: Thursday, February 17, 2011 12:21 PM
To: BOA, EPA.FOIA
Subject: FOIA Request - Louis Baer 2/17/2011 12:20:30 PM

Following information submitted for FOIA request: 2/17/2011-1029169 Request for information was routed to:
Bureau of Air - Unit - 217/524-5683 - 217/524-5023(FAX)

From: Mr. Louis Baer
Organization: Washington University Interdisciplinary Environmental Clinic Organization Type: Public Interest/Not-For-Profit
Location: One Brookings Drive, Campus Box 1120
St. Louis, MO. 63130
St. Louis
Phone: (314) 935-5837
Fax: (314) 935-5171
labaer@wulaw.wustl.edu

Facility Name: U.S. Steel Corporation Granite City Works Facility Address: 20th and State Streets Facility City: Grant City
County: Madison

Specific information requested from: Bureau of Air - Unit - 217/524-5683 - 217/524-5023(FAX)

Date From: Sep 15 2010 To: Feb 17 2011
Specific Permits: Yes
Annual Emmision Reports: Yes
Applications: Yes
Memo/Correspondence: Yes
Inspection Reports: Yes
Violation Notices: Yes
Violation Notice Packages: Yes
Other Information: On behalf of the American Bottom Conservancy, the Washington University Interdisciplinary Environmental Clinic requests copies of documents related to United States Steel Corporation - Granite City Works (hereafter USS-GCW) in Granite City, Madison County, Illinois.1. All documents regarding communications between U.S. Environmental Protection

Agency and the Illinois Environmental Protection Agency (IEPA) pertaining to USS-GCW since October 1, 2009.2. All documents pertaining to the Consent Order in People of the State of Illinois v. United States Steel Corporation, No. 05-CH-750, including but not limited to progress reports, compliance schedules and all communications related to the matter, since January 1, 2010.3. All inspection reports, violation notices, notices of violation, compliance reports, enforcement matters and all related documents pertaining to USS-GCW since September 15, 2010.4. The USS-GCW annual emissions report for 2010.5. All air permit applications received by IEPA and pertaining to USS-GCW since September 15, 2010.6. All draft air permits, comments and response to comments, and final permits issued or received by IEPA pertaining to USS-GCW since September 15, 2010.7. All data from PM2.5 monitors 17-119-0024 and 17-119-1007 since September 15, 2010.8. All documents pertaining to shutdown, startup, and/or malfunctions at the USS-GCW facility from January 2007 to the present.

--end of request--

Schnepp, Jason

From: Miller, Karen M.
Sent: Wednesday, January 26, 2011 11:55 AM
To: Schnepp, Jason
Subject: US Steel termination letter
Attachments: 1103947.Madison.01-25-2011.Revised Production Increase-US Steel.pdf

Attached.

Karen M. Miller
Division of Ecosystems & Environment
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
217-524-1048

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REVIEWER JRM

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

Pat Quinn, Governor
Marc Miller, Director

January 26, 2011

Jason Schnepp
Illinois Environmental Protection Agency
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

RE: Revised Production Increase-US Steel
IDNR Project #1103947

Dear Mr. Schnepp:

This letter concerns the Endangered Species Consultation for a revision to a 1996 US Steel Production Increase Permit to correct sulfur dioxide emission rates for combustion of blast furnace gas and volatile organic material and CO emission rates for combustion of natural gas at its Granite City plant. This action was submitted for consultation in accordance with the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

Two state-listed species have been recorded a little more than one mile from the facility. The state-endangered Yellow-crowned Night Heron (*Nyctanassa violacea*) occurs north of the facility and the state and federally threatened Decurrent False Aster (*Boltonia decurrens*) occurs to the east and south of the facility.

The change in emission rates will increase total allowable emissions and the Additional Impacts Analysis included in U.S. Steel's Application to Modify did not demonstrate that this potential increase would not adversely impact the listed species near the facility. While it may be correct to state that "the emissions changes resulting from the proposed modification have already occurred in the project area" it appears that production levels have never reached that allowed in the original permit.

However, modeling indicates the revised permitted emissions will not violate the primary or secondary NAAQS. As the Department is not aware of any data that suggest the NAAQS are not protective of the species present near the facility, it is the Department's Biological Opinion that the action is unlikely to have an adverse effect on the essential habitat of the Yellow-crowned Night Heron and the Decurrent False Aster.

Consultation on the part of the Department is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Sincerely,

Karen M. Miller

Karen M. Miller
Division of Ecosystems and Environment
Phone (217) 785-5500
karen.m.miller@illinois.gov

Schnepp, Jason

From: Brooks, Pamela
Sent: Wednesday, January 05, 2011 10:39 AM
To: Ryan, Heather
Cc: Sprague, Jeff; Schnepp, Jason; Kaleel, Rob
Subject: US Steel, Granite City, NAAQS Modeling Output
Attachments: ALL_3hrSO2_89_far_NAAQS.xlsx; ALL_annual_88_SO2_far_NAAQS.xlsx; ALL_24hr_91_newinvSO2_NAAQS.xlsx

Ms. Ryan,

As requested, attached are National Ambient Air Quality (NAAQS) AERMOD modeling runs (output) for U.S. Steel Corporation, Granite City Works. They are in MsExcel 2007 format.

These files are in response to a request for Modeling from Karen Miller (IDNR).

Files can be opened in ArcCatalog and create a feature class from XUTM, YUTM. The feature class can then be exported into a GIS format of your choice (ArcCatalog, shape file, geodatabase etc.). The AVERAGE_CONC fields contain the model concentration output (values) in micrograms per cubic meter (ug/m3). Averaging times are 3-hour, 24-hour and Annual 2nd high concentration output.

Please let me know if you have any problems using these files or creating the GIS data.

This is the last of the data that will be sent via e-mail. We hope this satisfies your request.

Regards,

Pamela Brooks
IEPA, BOA, AQPS
Springfield, IL
Pamela.brooks@illinois.gov
(217) 524-4776

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[illegible]
Thank you. Thank you [illegible] using the files or creating the gis data.

Heather

From: Brooks, Pamela
Sent: Wednesday, December 22, 2010 11:43 AM
To: Ryan, Heather
Subject: Significant Impact Modeling Output

Ms. Ryan,

Attached are Significant Impact modeling runs for U.S. Steel Corporation, Granite City Works. They are in MsExcel 2007 format.

These files are in response to a request for Modeling from Karen Miller (IDNR). Additional NAAQS modeling files will be sent after the holiday via email.

Files can be opened in ArcCatalog and create a feature class from XUTM, YUTM. The feature class can then be exported into a GIS format of your choice (ArcCatalog, shape file, geodatabase etc.). The AVERAGE field or AVECONC fields contain the model concentration output (values) in micrograms per cubic meter (ug/m3). Averaging times are 3 hour, 24 hour and Annual 1st high concentration runs.

Please let me know if you have any problems using these files or creating the GIS data.

Regards,

Pamela Brooks
IEPA, BOA, AQPS
Springfield, IL
Pamela.brooks@illinois.gov
(217) 524-4776

Schnepp, Jason

From: Brooks, Pamela
Sent: Wednesday, January 05, 2011 8:51 AM
To: Schnepp, Jason
Subject: FW: Significant Impact Modeling Output

FYI, please see below. I will be sending non-NAAQS files today as well.

Pam

From: Ryan, Heather
Sent: Monday, January 03, 2011 10:15 AM
To: Brooks, Pamela
Subject: RE: Significant Impact Modeling Output

Thank you. I had no problems using the files or creating the gis data.

Heather

From: Brooks, Pamela
Sent: Wednesday, December 22, 2010 11:43 AM
To: Ryan, Heather
Subject: Significant Impact Modeling Output

Ms. Ryan,

Attached are Significant Impact modeling runs for U.S. Steel Corporation, Granite City Works. They are in MsExcel 2007 format.

These files are in response to a request for Modeling from Karen Miller (IDNR). Additional NAAQS modeling files will be sent after the holiday via email.

Files can be opened in ArcCatalog and create a feature class from XUTM, YUTM. The feature class can then be exported into a GIS format of your choice (ArcCatalog, shape file, geodatabase etc.). The AVERAGE field or AVECONC fields contain the model concentration output (values) in micrograms per cubic meter (ug/m3). Averaging times are 3 hour, 24 hour and Annual 1st high concentration runs.

Please let me know if you have any problems using these files or creating the GIS data.

Regards,

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.hnepp, Jason

om: Brook
ent: Frida er 10, 2010 9:16 AM
o: Mille
c: Schn
ubject: Proc ase Permit Application

Karen,

Can you please prov ide me a pl er where I can reach you at the IDNR? Do you have GIS st aff available to as: you with taking mo el output entrations) and creating point shape files for your purposes?

Thanks,
Pam

Pamela Brooks
IEPA, BOA, AQPS
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Schnepp, Jason

From: Miller, Karen M
Sent: Thursday, December 09, 2010 5:00 PM
To: Brooks, Pamela; Schnepp, Jason
Subject: RE: Production Increase Permit Application

What we really need are shapefiles of the dispersal area for the SIL and the NAAQS so we can use them with our current heritage database information.

From: Brooks, Pamela
Sent: Wednesday, December 08, 2010 3:19 PM
To: Miller, Karen M.
Cc: Schnepp, Jason
Subject: RE: Production Increase Permit Application

Ms. Miller

Hi. If you type the location (38.8343191602687, -90.062261235346) into Google Earth (Try to), Google Maps or Bing Maps you will be able to see the below location and zoom in for more details. See attached image of coordinate from Google.

Are you more concerned with the Significant Impact Level (SIL), which is the facility by itself or the NAAQS which includes background facilities (concentration, report)? Location represents much more than just the facility by itself.

Link:

38.8343191602687, -90.062261235346
http://www.bing.com/maps/?v=2&where1=38.8343191602687%2C%20-90.062261235346&q=38.8343191602687%2C%20-90.062261235346&encType=1

Regards,
Pamela Brooks

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From: Brooks, Pamela
Sent: Wednesday, December 01, 2010 2:53 PM
To: Schnepp, Jason
Cc: Sprague, Jeff; Romaine, Chris
Subject: RE: Production Increase Permit Application

Jason,

Attached are graphics showing highest impact location for all three averaging periods (Annual, 3-hour and 24-hour). All modeling runs were compare to the NAAQS or SIL. Please see attached.

Facility: US Steel, Granite City Works in Granite City (lower part of graphic)

Max location: UTM Zone 15, NAD83 (meters), Location X = 755000, Y = 4302500

Please pass this information along to Karen.

Thanks,
Pam

From: Miller, Karen M.
Sent: Tuesday, November 09, 2010 1:44 PM
To: Schnepp, Jason
Subject: RE: Production Increase Permit Application

Jason, I have been looking over the information you sent me on the revision to the US Steel construction permit/PSD approval. To be able to review this submission we need a plume dispersal graphic. Is one available?

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:14 AM
To: Miller, Karen M.
Cc: Romaine, Chris; Smet, Robert; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Karen,

I understand Mike Branham has retired. Please see the email below and contact me if you have any questions.

Thanks.
Jason Schnepp
Illinois EPA
524-3724

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:10 AM
To: 'rineheart.rachel@epa.gov'; 'Michael.Branham@illinois.gov'
Cc: 'Robert B Ribbing'; Constantine Blathras (blathras.constantine@epa.gov); Romaine, Chris; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Rachel and Mike: Today, the Illinois EPA will be mailing letters to USEPA and IDNR for a request to initiate consultation under the Endangered Species Act for a project at US Steel in Granite City. As a supplement to these letters, please see the attached application from US Steel. In this application, you will find that US Steel has requested a revision to a PSD Approval for their Production Increase Permit. If you have questions regarding this project, please feel free to contact me.

Thanks.

Jason Schnepp
217-524-3724

Schnepp, Jason

From: Romaine, Chris
Sent: Thursday, December 09, 2010 5:43 PM
To: Schnepp, Jason
Subject: Revision to Production Increase Permit

Need to discuss briefly.

Thanks

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Schnepp, Jason

From: Brooks, Pamela
Sent: Wednesday, December 08, 2010 5:00 PM
To: Miller, Karen M.
Cc: Schnepp, Jason
Subject: FW: Production Increase Permit Application

Hello again,

Please disregard North American Datum from last e-mail. It appears the modeling was actually done in NAD27 which is the same UTM zone (15) and UTM coordinate, but slightly different Decimal Degree location for Google or Bing Maps. Please use **Latitude: 38.8361884767406, Longitude: -90.0622593282002 instead.**

Max location: UTM Zone 15, **NAD27** (meters), Location X = 755000 m E, Y = 4302500 m N

Link to Bing maps:

38.8361884767406, -90.0622593282002
http://www.bing.com/maps/?v=2&where1=38.8361884767406%2C%20-90.0622593282002&q=38.8361884767406%2C%20-90.0622593282002&encType=1

Location out is still pretty close to the original attached image.

Regards,

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Pamela Brooks
IEPA, BOA, AQPS
Springfield, IL
Pamela.brooks@illinois.gov
(217) 524-4776

From: Brooks, Pamela
Sent: Wednesday, December 08, 2010 3:19 PM
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Cc: Schnepp, Jason
Subject: RE: Production Increase Permit Application

Ms. Miller,

Hi. If you type the location (38.8361884767406, -90.0622593282002) into Google Earth (Fly to), Google Maps or Bing Maps you will be able to see the below location and zoom in for more details. See attached image of coordinate from Google.

Are you more concerned with the Significant Impact Level (SIL), which is the facility by itself or the NAAQS which includes background facilities (concentration, not mass)? Location represents impacts from more than just the facility by itself.

Link:

38.8343191602687, -90.062261235346
http://www.bing.com/maps/?v=2&where1=38.8343191602687%2C%20-90.062261235346&q=38.8343191602687%2C%20-90.062261235346&encType=1

Regards,
Pamela Brooks

From: Brooks, Pamela
Sent: Wednesday, December 01, 2010 2:53 PM
To: Schnepp, Jason
Cc: Sprague, Jeff; Romaine, Chris
Subject: RE: Production Increase Permit Application

Jason,

Attached are graphics showing highest impact location for all three averaging periods (Annual, 3-hour and 24-hour). Modeling runs were compare to the NAAQS for SO2. Please see attached.

Facility: US Steel, Granite City Works in Granite City (lower part of graphic)

Max location: UTM Zone 15, NAD83 (meters), Location X = 755000, Y = 4302500

Please pass this information along to Karen.

Thanks,
Pam

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Sent: Tuesday, November 09, 2010 1:44 PM
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Subject: RE: Production Increase Permit Application

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From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:14 AM
To: Miller, Karen M.
Cc: Romaine, Chris; Smet, Robert; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Karen,

I understand Mike Branham has retired. Please see the email below and contact me if you have any questions.

Thanks.
Jason Schnepp
Illinois EPA

524-3724

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:10 AM
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Jason Schnepp
217-524-3724

Schnepp, Jason

From: Brooks, Pamela
Sent: Wednesday, December 08, 2010 3:19 PM
To: Miller, Karen M.
Cc: Schnepp, Jason
Subject: RE: Production Increase Permit Application
Attachments: location of Max in google maps.jpg

Ms. Miller,

Re: If you type the location (38.8343191602687, -90.062261235346) into Google Earth (Fly In), Google Maps or Bing Maps you will be able to see the below location and zoom in for more details. See attached image of coordinate from Google.

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Regards,
Pamela Brooks

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From: Brooks, Pamela
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Cc: Sprague, Jeff; Romaine, Chris
Subject: RE: Production Increase Permit Application

Jason,

Attached are graphics showing highest impact location for all three averaging periods (Annual, 3-hour and 24-hour). Modeling runs were compare to the NAAQS for 2012. Please see attached.

Facility: US Steel, Granite City Works in Granite City (lower part of graphic)

Max location: UTM Zone 15, NAD83 (meters), Location X = 755000, Y = 4302500

Please pass this information along to Karen.

Thanks,
Pam

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Sent: Tuesday, November 09, 2010 1:44 PM
To: Schnepp, Jason
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Thanks.
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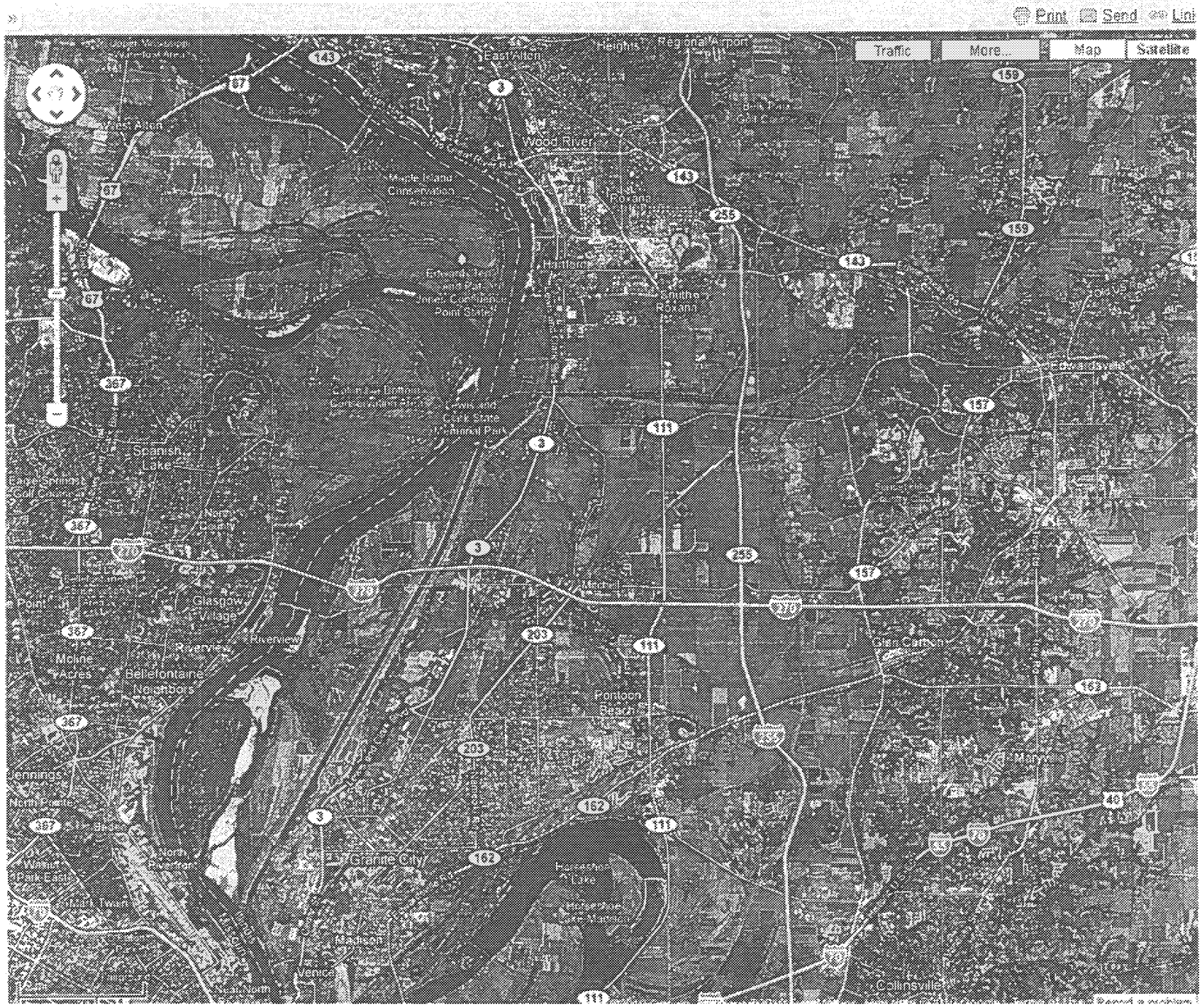
217-524-3724

R009006


Google maps
38.8343191602687, -90.062261235346
Search Maps
Show search options
Print
Send
Link
Traffic
More...
Map
Satellite
East Alton
Heights
Regional Airport
West Alton
Wood River
Maple Island Conservation Area
Roxana
Hartford
Smith Roxana
Edwardsville
Spanish Lake
Glasgow Village
Riverview
Moline Acres
Bellefontaine Neighbors
Pontoon Beach
Glen Carbon
Maryville
Dennings
North Pointe
Granite City
Madison
Venice
Collinsville
Report a problem

Schnepp, Jason

From: Schnepp, Jason
Sent: Wednesday, December 08, 2010 8:53 AM
To: Brooks, Pamela
Subject: RE: Production Increase Permit Application

Yes, please email her directly. Thanks.

Jason

From: Brooks, Pamela
Sent: Wednesday, December 08, 2010 8:49 AM
To: Schnepp, Jason
Subject: RE: Production Increase Permit Application

Sure,

She could type the coordinates into google earth and have it zoom to the location, however I can create a .kmz for her.

Does she have google earth software? If not I will create a quick image of the locations for her.

Also, is she concerned with the Significant Impact Level (SIL), which is the facility by itself or the NAAQS which includes background facilities?

Would it be ok if I just email her direct and cc you?

Thanks,

Pam

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From: Schnepp, Jason
Sent: Wednesday, December 08, 2010 7:13 AM
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Cc: Sprague, Jeff; Romaine, Chris
Subject: FW: Production Increase Permit Application

Pam,
See Karen's comment. Can we help her?
Jason

From: Miller, Karen M.
Sent: Tuesday, December 07, 2010 4:25 PM
To: Schnepp, Jason
Subject: RE: Production Increase Permit Application

By graphic I meant map. I need to see this in relation to the landscape.

From: Schnepp, Jason
Sent: Wednesday, December 01, 2010 2:56 PM
To: Miller, Karen M.

Cc: Romaine, Chris; Brooks, Pamela; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Karen,
Does the attached satisfy your request? If not, let me know what more we need to do.
Thanks.
Jason Schnepp

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Facility: US Steel, Granite City Works in Granite City (lower part of graphic)

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Please pass this information along to Karen.

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Karen,

I understand Mike Branham has retired. Please see the email below and contact me if you have any questions.

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Illinois EPA
524-3724

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217-524-3724

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217-524-3724

Schnepp, Jason

From: Miller, Karen M
Sent: Tuesday, December 07, 2010 4:25 PM
To: Schnepp, Jason
Subject: RE: Production Increase Permit Application

By graphic I meant map. I need to see this in relation to the landscape.

From: Schnepp, Jason
Sent: Wednesday, December 01, 2010 2:56 PM
To: Miller, Karen M.
Cc: Romaine, Chris; Brooks, Pamela; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Karen,
Does the attached satisfy your request? If not, let me know what more we need to do.
Thanks.
Jason Schnepp

From: Brooks, Pamela
Sent: Wednesday, December 01, 2010 2:53 PM
To: Schnepp, Jason
Cc: Sprague, Jeff; Romaine, Chris
Subject: RE: Production Increase Permit Application

Jason,

Attached are graphics showing highest impact location for all three averaging periods. (Annual, 3-hour and 24-hour). Modeling runs were compare to the NAAQS for SO2. Please see attached.

Facility: US Steel, Granite City Works in Granite City (lower part of graphic)

Max location: UTM Zone 15, NAD83 (meters), Location X = 755000, Y = 4302500

Please pass this information along to Karen.

Thanks,
Pam

From: Schnepp, Jason
Sent: Tuesday, November 09, 2010 2:20 PM
To: Brooks, Pamela
Cc: Sprague, Jeff; Romaine, Chris; Miller, Karen M.
Subject: FW: Production Increase Permit Application

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Sent: Tuesday, November 09, 2010 1:44 PM

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Subject: RE: Production Increase Permit Application

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Karen,

I understand Mike Branham has retired. Please see the email below and contact me if you have any questions.

Thanks.
Jason Schnepp
Illinois EPA
524-3724

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:10 AM
To: 'rineheart.rachel@epa.gov'; 'Michael.Branham@illinois.gov'
Cc: 'Robert B Ribbing'; Constantine Blathras (blathras.constantine@epa.gov); Romaine, Chris; Sprague, Jeff
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Jason Schnepp
217-524-3724

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R009019

R009020

R009021

6,000	740,000	742,000	744,000	746,000	748,000	750,000	752,000	754,000	756,000	758,000	760,000	762,000	764,000	766,000	768,000	770,000	
9.58	32.72	44.85	50.91	56.14	61.89	68.83	81.78	106.	115.	114.	220.	165.	160.	172.	181.	333.	282.	218.	126.	112.	79.41	63.61	52.16	45.52	42.31	36.83	38.57	33.60	35.12	33.89	33.30	33.60	4,305,000 33.66
7.42	41.54	43.05	46.59	49.07	51.54	61.20	69.25	65.72	73.64	125.	172.	110.	148.	219.	324.	493.	566.	271.	142.	109.	64.64	70.85	59.94	63.10	47.67	44.43	44.19	39.45	38.39	36.56	37.24	35.60	4,304,000 34.56
8.56	33.82	41.26	42.97	45.09	48.55	50.44	49.87	53.38	66.03	97.58	106.	95.61	110.	162.	301.	339.	1,007.	426.	214.	132.	97.27	86.62	72.16	61.57	58.60	52.66	49.20	45.86	42.69	40.29	36.34	36.39	4,303,000 34.71
7.32	38.49	39.35	41.37	40.57	40.33	40.28	52.01	52.45	54.52	69.05	75.70	91.05	99.91	145.	181.	391.	422.	385.	255.	149.	118.	80.79	83.00	75.10	62.51	56.59	52.11	49.75	45.94	43.07	41.07	38.02	4,302,000 37.18
4.02	34.54	34.58	33.99	36.28	38.11	43.91	45.00	46.16	51.92	58.00	63.96	67.11	61.95	98.50	159.	217.	215.	167.	201.	149.	140.	106.	82.39	70.90	60.67	57.75	55.72	53.32	49.51	46.64	44.35	42.18	4,301,000 39.69
3.51	31.80	31.02	33.21	36.05	38.93	42.29	45.19	45.14	45.74	46.00	61.78	64.85	72.06	112.	109.	140.	130.	109.	125.	131.	102.	102.	94.91	80.24	68.54	57.12	51.30	47.29	46.63	45.12	40.33	37.97	4,300,000 36.34
3.62	32.96	31.84	33.71	35.60	38.95	40.31	42.87	43.19	40.40	42.69	49.60	59.73	66.19	91.62	85.89	95.66	96.95	74.01	73.48	96.99	95.66	79.39	71.52	77.23	70.42	64.05	57.84	51.24	44.45	41.40	39.27	38.00	4,299,000 35.62
4.39	34.62	33.74	34.07	34.64	34.66	37.92	41.67	44.72	41.72	45.12	52.93	71.96	76.60	66.77	72.10	70.12	62.12	61.28	56.72	66.95	77.92	75.43	64.06	53.61	59.51	50.62	56.19	63.24	49.69	45.53	40.96	36.74	4,298,000 35.21
2.16	33.50	35.00	34.66	33.83	33.98	35.94	41.68	47.42	45.60	48.62	66.37	68.32	61.84	56.56	62.05	54.34	47.91	52.98	47.29	43.71	59.19	65.43	62.49	53.70	45.79	49.48	51.76	50.25	47.16	45.15	43.16	40.64	4,297,000 37.45
9.19	30.45	33.16	34.96	34.55	36.18	35.71	41.90	47.73	50.09	56.53	64.48	59.62	50.35	52.90	53.94	44.01	41.45	44.96	39.57	41.07	45.50	52.47	55.62	52.70	46.25	41.77	41.54	47.95	44.39	45.26	43.31	39.36	4,296,000 36.01
0.40	29.86	30.46	33.37	35.60	35.35	38.05	41.32	47.87	55.89	57.28	64.48	49.33	41.59	47.25	43.55	37.23	35.07	37.80	34.02	37.30	37.09	41.94	45.61	46.09	45.43	41.89	39.78	39.61	44.83	40.83	38.34	39.56	4,295,000 39.66
1.19	31.16	30.67	31.73	33.77	36.47	37.83	42.14	53.51	60.76	62.16	51.02	42.46	36.29	40.98	33.60	35.89	31.29	33.75	33.13	35.79	35.66	35.17	35.25	41.84	42.14	39.89	37.62	37.90	35.60	38.51	37.58	34.49	4,294,000 35.08
3.49	32.76	32.74	33.53	34.55	36.34	39.63	45.21	51.76	58.95	67.04	65.29	44.10	41.63	41.72	40.17	32.88	36.38	35.12	31.53	30.84	32.10	30.47	33.15	35.27	36.83	37.34	35.49	34.12	35.31	31.23	33.44	35.49	4,293,000 32.45
3.43	33.11	33.42	35.87	39.10	39.78	43.62	47.59	51.61	54.86	59.30	67.38	51.27	47.33	49.83	39.76	34.72	35.98	32.28	29.86	30.04	30.63	29.06	30.43	34.76	37.07	36.87	33.91	31.90	30.58	32.14	29.47	29.94	4,292,000 32.83
2.51	32.10	34.38	36.60	40.09	41.29	45.43	46.40	47.49	57.36	65.50	66.01	61.46	60.77	58.76	41.90	39.45	34.03	31.83	30.59	29.22	28.61	29.46	30.76	30.86	31.79	31.86	30.98	30.54	29.07	27.69	29.53	27.92	4,291,000 27.48
9.35	34.13	35.96	36.37	39.42	43.32	45.30	49.44	55.39	59.65	73.08	96.29	87.72	77.36	68.43	48.73	38.36	34.41	31.37	31.46	31.16	30.26	28.98	27.34	27.44	27.73	29.31	30.18	30.29	29.62	28.36	26.60	27.25	4,290,000 28.46
2.66	39.10	38.94	33.43	37.95	40.61	44.10	52.47	62.96	78.99	78.11	112.	146.	105.	66.04	48.11	38.67	34.79	32.09	31.27	30.49	29.91	28.36	27.94	27.46	28.15	27.52	28.33	28.06	29.68	26.89	27.64	26.21	4,289,000 25.30
1.51	32.49	36.57	39.75	36.86	38.95	43.09	54.72	73.96	97.62	120.	168.	228.	131.	70.50	49.74	41.84	35.83	34.73	34.64	32.87	30.51	28.84	28.88	27.17	26.75	25.36	27.19	29.27	29.33	23.92	25.06	26.89	4,288,000 25.56
2.63	36.50	37.52	39.45	40.31	39.05	41.78	49.06	63.07	108.	[illegible]	[illegible]	[illegible]	206.	37.07	51.33	42.25	34.59	34.42	32.60	31.93	28.17	27.62	27.46	27.21	27.08	26.09	25.88	26.79	28.64	28.56	26.07	27.24	4,287,000 26.19
																																	4,286,000

Schnepp, Jason

From: Brooks, Pamela
Sent: Wednesday, December 01, 2010 2:53 PM
To: Schnepp, Jason
Cc: Sprague, Jeff; Romaine, Chris
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Attachments: Annual-far-events_location.bmp; 3hr-far-events_location.bmp; 24hr-far-events_newinv_location.tif

Jason,

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Facility: US Steel, Granite City Works in Granite City (lower part of graphic)

Max location: UTM Zone 15, NAD83 (meters), Location X = 755000, Y = 4302500

Please pass this information along to Karen.

Thanks,
Pam

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Karen,

I understand Mike Branham has retired. Please see the email below and contact me if you have any questions.

Thanks.
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Illinois EPA
524-3724

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Jason Schnepp
217-524-3724

R009024

R009025

R009026

Schnepp, Jason

From: Miller, Karen M.
Sent: Wednesday, November 10, 2010 8:31 AM
To: Schnepp, Jason
Subject: RE: Production Increase Permit Application

Thanks.

From: Schnepp, Jason
Sent: Wednesday, November 10, 2010 7:29 AM
To: Miller, Karen M.
Cc: Brooks, Pamela; Sprague, Jeff; Romaine, Chris
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To: Schnepp, Jason
Cc: Sprague, Jeff
Subject: RE: Production Increase Permit Application

Jason,
I can get them a maximum impact graphic for significant impact. This is the 1st I have seen a request of this type for an Endangered Species assessment.

Pam

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Subject: RE: Production Increase Permit Application

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From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:14 AM
To: Miller, Karen M.
Cc: Romaine, Chris; Smet, Robert; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Karen,

I understand Mike Branham has retired. Please see the email below and contact me if you have any questions.

Thanks
Jason Schnepp
Illinois EPA
524-3724

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:10 AM
To: 'rineheart.rachel@epa.gov'; 'Michael.Branham@illinois.gov'
Cc: 'Robert B Ribbing'; Constantine Blathras (blathras.constantine@epa.gov); Romaine, Chris; Sprague, Jeff
Subject: FW: Production Increase Permit Application

Rachel and Mike: Today, the Illinois EPA will be mailing letters to USEPA and IDNR for a request to initiate consultation under the Endangered Species Act for a project at US Steel in Granite City. As a supplement to these letters, please see the attached application from US Steel. In this application, you will find that US Steel has requested a revision to a PSD Approval for their Production Increase Permit. If you have questions regarding this project, please feel free to contact me

Thanks.

Jason Schnepp
217-524-3724

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Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:14 AM
To: Miller, Karen M.
Cc: Romaine, Chris; Smet, Robert; Sprague, Jeff
Subject: FW: Production Increase Permit Application
Attachments: Application to Modify Permit No. 95010001.pdf

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Illinois EPA
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Jason Schnepp
217-524-3724

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REVIEWER JRM

PRODUCTION INCREASE PERMIT

U.S. STEEL CORPORATION
GRANITE CITY WORKS

See original received Feb 4, 2008.

Application to Modify

Permit No. 95010001

Prepared for

U.S. Steel Corporation Granite City Works
1951 State Street
Granite City, Illinois 62040

January 29, 2008

URS Corporation
1001 Highlands Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project #20236935.00400

Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, October 26, 2010 9:10 AM
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Cc: 'Robert B Ribbing'; Constantine Blathras (blathras.constantine@epa.gov); Romaine, Chris; Sprague, Jeff
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Jason Schnepp
217-524-3724

EPA-DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

PRODUCTION INCREASE PERMIT

U.S. STEEL CORPORATION
GRANITE CITY WORKS

See original
received Feb. 4, 2008

Application to Modify

Permit No. 95010001

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January 29, 2008

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1001 Highlands Plaza Drive West, Suite 300
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(314) 429-0100
Project #20236935.00400

217/782-2113

October 25, 2010

EPA-DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

USEPA, Region 5, A-18J
Attn: Ms. Cheryl Newton
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Re: Proposed Changes to a PSD Approval for United States Steel
Request to Initiate Consultation Under the Endangered Species Act

Dear Ms. Newton:

By this letter, the Illinois EPA is requesting that the USEPA initiate appropriate consultation under the federal Endangered Species Act for an application submitted by the United States Steel - Granite City Works ("US Steel"), for proposed changes to a PSD Approval for a Production Increase Project.

US Steel has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996, for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as a fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by the applicant.

Because the current application involves corrections to the emission information originally provided for the project, the requested revisions are being evaluated using the NSR rules that applied for the original application in January 1996. At that time, Granite City was designated nonattainment for ozone and PM_{10} and attainment for all other pollutants.

Accordingly, with the corrected emission rates for SO_2 and CO, which are higher than in the original application and current PSD approval, this project is still subject to a PSD review as a major modification for SO_2 and CO emissions.

An electronic copy of the application for this project will be e-mailed to Rachel Pinehcart and Constantine Blathras of your staff.

If individuals at USEPA have questions about this project or require any assistance from the Illinois EPA in carrying out appropriate consultation, please contact Jason Schnepp at 217/524-3724 or Jason.Schnepp@Illinois.gov.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

cc: P. Blakley
C. Blathras
Application No.: 95010001; ID No.: 119813AAI
Jeff Sprague, Illinois EPA

217/782-3113

October 25, 2010

Todd Rettig, Division Manager
Division of Resource Review & Coordination
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

Re: Request for Consultation under the Illinois Endangered Species Protection Act
United States Steel Corporation, Granite City Works - Revision to Construction Permit/PSD Approval for Production Increase Project

Dear Mr. Rettig:

In accordance with the Illinois Endangered Species Protection Act, the Illinois EPA is filing the enclosed Agency Action Report to begin the required consultation process for the above referenced permit application.

United States Steel Corporation - Granite City Works ("US Steel") has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996 for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by US Steel.

An electronic copy of this application will be sent to Mike Branham of your office.

If you have any questions or require additional information, please contact Jason Schnepp at (217)524-3724 or Jason.Schnepp@Illinois.gov. Thank you in advance for your assistance.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Enclosures: AAR, Project Location Maps

cc: Jeff Sprague, Illinois EPA
Application No.: 95010001; ID No.: 119813AAI

Schnepp, Jason

From: Schnepp, Jason
Sent: Monday, October 25, 2010 11:49 AM
To: Marr, Linda
Subject: Letters for Ed's Signature
Attachments: US Steel IDNR Consultation.doc; US Steel - ESA Request to USEPA.doc

Linda,

Please prepare the attached letters. Thanks.

Jason

Schnepp, Jason

From: Robert B Ribbing [RBRibbing@uss.com]
Sent: Friday, October 01, 2010 12:14 PM
To: Schnepp, Jason
Cc: Jill A Foust
Subject: Production Increase Permit Application Review Extension Letter
Attachments: IEPA application review extension PIP 2010 09 30.pdf

The original will follow in the mail.

Robert B. Ribbing
EQC Department
U.S. Steel - Granite City Works
Phone: 618-451-4026
Cell: 618-779-0199
Fax: 618-451-4020

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Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

September 30, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0224 3840
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794

Subject: Extension of Permit Application Review Period
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel, Granite City Works (GCW) is granting an extension, until October 31, 2010, to Illinois EPA for the review of the following permit application:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)

Should you have questions or require additional information, please contact Jill Foust at (618) 451-3391 or e-mail jafoust@uss.com.

Sincerely,

Richard E. Veitch
General Manager

Schnepp, Jason

From: Schnepp, Jason
Sent: Wednesday, July 28, 2010 11:12 AM
To: 'Robert B Ribbing'
Cc: Romaine, Chris
Subject: esa
Attachments: image001.gif

I believe SunCoke was working with Jennifer Darrow:

USEPA REGION 5
77 West Jackson Boulevard
Mail Code: AR-18J
Chicago, IL 60604-3507

CONTACT

Office Phone – Extension
312-886-6315

Email
darrow.jennifer@epa.gov

In the past I have also worked with Rachel Rineheart:

USEPA REGION 5
77 West Jackson Boulevard
Mail Code: AR-18J
Chicago, IL 60604-3507

CONTACT

Office Phone - Extension
312-886-7017

Email
rineheart.rachel@epa.gov

I do not recall who the contact is for IDNR. Here is a link for more information: http://dnr.state.il.us/orep/ec/brief.htm

Schnepp, Jason

From: Robert B Ribbing [RBRibbing@uss.com]
Sent: Thursday, October 21, 2010 11:13 AM
To: Schnepp, Jason
Cc: Jill A Foust
Subject: Production Increase Permit Application
Attachments: Application to Modify Permit No. 95010001.pdf

Jason,
Attached is a scanned copy of the application. I am assuming you will be forwarding my email to the three individuals who will be reviewing the application. Let me know if you need anything else.

Robert B. Ribbing
EQC Department
U.S. Steel - Granite City Works
Phone: 618-451-4026
Cell: 618-779-0199
Fax: 618-451-4020

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PRODUCTION INCREASE PERMIT

U.S. STEEL CORPORATION
GRANITE CITY WORKS

See original
received Feb. 4, 2008

Application to Modify

Permit No. 95010001

Prepared for

U.S. Steel Corporation Granite City Works
1951 State Street
Granite City, Illinois 62040

January 29, 2008

URS Corporation
1001 Highlands Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100

Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, June 01, 2010 7:39 AM
To: Brooks, Pamela
Cc: Romaine, Chris; Kaleel, Rob
Subject: RE: Granite City Works, 95010001

They have not yet commented on the March 19 draft.

From: Brooks, Pamela
Sent: Thursday, May 27, 2010 4:44 PM
To: Schnepp, Jason
Cc: Romaine, Chris; Kaleel, Rob
Subject: RE: Granite City Works, 95010001

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Jason,

Did you hear back from US Steel regarding your revised construction permit? I am going to focus on getting you a draft memorandum for the modeling by June 1st. The Final Rule for SO2 is expected on Tuesday June 2 2010 and will include a new 1-hour SO2 NAAQS. Not sure how this will effect this permit? Chris? I am going to assume it will effect permits after this date.

Pam

From: Schnepp, Jason
Sent: Tuesday, May 25, 2010 9:16 AM
To: Brooks, Pamela
Subject: RE: Granite City Works, 95010001

No. There have been no changes to the SO2 emissions, i.e., the rates in the most recent draft permit should be consistent with the Jan 2008 application.

From: Brooks, Pamela
Sent: Tuesday, May 25, 2010 9:13 AM
To: Schnepp, Jason
Subject: RE: Granite City Works, 95010001

Did SO2 emissions change in the modified (edited draft you sent) permit since the modeling was submitted way back in January of 2008? Jeff mentioned something, but I am not seeing a change in total emissions.

Pam

From: Brooks, Pamela
Sent: Thursday, May 06, 2010 9:16 AM
To: Schnepp, Jason
Subject: Granite City Works, 95010001

Jason I am trying to make some headway on this PSD today. It is very complex. Do you have a final version of the Construction Permit/PSD?

Am I holding up the works?

Pam

Pamela Brooks
IEPA, BOA, AQPS
Springfield, IL
Pamela.brooks@illinois.gov
(217) 524-4776

Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, June 01, 2010 7:18 AM
To: Reed, Michael; Romaine, Chris; Bakowski, Ed
Cc: Belogorsky, Anatoly
Subject: RE: More U.S. Steel questions

When did we begin a policy to not "scan and email permits" to USEPA?

-----Original Message-----
From: Reed, Michael
Sent: Friday, May 28, 2010 3:05 PM
To: Romaine, Chris; Bakowski, Ed
Cc: Belogorsky, Anatoly; Schnepp, Jason
Subject: RE: More U.S. Steel questions

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Chris,

I will take care of getting the copies of these permits to Genevieve. We should probably discuss the other part of this request as both Anatoly and I tried to find this information and as I recall, it doesn't exist.

Just for everyones benefit, she is most likely reviewing the adequacy of periodic monitoring in the permit and where we do not have anything but recordkeeping, she is seeing if adequately justified the use of EF and operating records (ie: Production Increase permit).

Michael T. Reed, CAAPP Unit Manager
Illinois Environmental Protection Agency BOA/DAPC/Permit Section
1021 N. Grand Ave East
Springfield, Illinois 62794
Michael.Reed@illinois.gov
Office: 217.782.4651 | Fax 217.524.5023

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-----Original Message-----
From: Damico.Genevieve@epamail.epa.gov [mailto:Damico.Genevieve@epamail.epa.gov]
Sent: Friday, May 28, 2010 2:35 PM
To: Reed, Michael; Romaine, Chris
Cc: Blakley.Pamela@epamail.epa.gov; Blathras.Constantine@epamail.epa.gov
Subject: More U.S. Steel questions

Chris and Mike,

I know I just got permit 82060043 from you and I am asking for more permits.... : (

Permits #72080034, #72080036 and #95010001 are not available in the database. I am looking of the origin of the emission factors that are the basis for the "Emission Factor" and "Maximum Emissions" in these permits. I am aware that IEPA has a policy not to scan and e-mail permits. So if that is not an available option, could someone provide me with the permits and the supporting documentation that explains the origin of the "Emission Factor" and "Maximum Emissions" via snail mail? Are these BACT limits?

Schnepp, Jason

From: Reed, Michael
Sent: Friday, May 28, 2010 3:05 PM
To: Romaine, Chris; Bakowski, Ed
Cc: Belogorsky, Anatoly; Schnepp, Jason
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Illinois Environmental Protection Agency BOA/DAPC/Permit Section
1021 N. Grand Ave East
Springfield, Illinois 62794
Michael.Reed@illinois.gov
Office: 217.782.4651 | Fax 217.524.5023

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Schnepp, Jason

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Sent: Thursday, May 27, 2010 4:44 PM
To: Schnepp, Jason
Cc: Romaine, Chris; Kaleel, Rob
Subject: RE: Granite City Works, 95010001

Jason,

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From: Schnepp, Jason
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Subject: RE: Granite City Works, 95010001

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Am I holding up the works?

Pam

Pamela Brooks
IEPA, BOA, AQPS
Springfield, IL
Pamela.brooks@illinois.gov

(217) 524-4776

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Pamela.brooks@illinois.gov
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IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

Schnepp, Jason

From: Benbenek, Jeff
Sent: Friday, March 26, 2010 11:52 AM
To: Schnepp, Jason
Subject: RE: Emailing: 95010001 - USS_4.doc

Jason,

I still am trying to find the time to review this. Hopefully next week.

Jeff

-----Original Message-----
From: Schnepp, Jason
Sent: Friday, March 19, 2010 1:48 PM
To: Robert B Ribbing
Cc: Benbenek, Jeff
Subject: Emailing: 95010001 - USS_4.doc

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Bob,

Please review the attached draft revised production increase permit. I have also copied Jeff Benbenek on this email so that he has an opportunity to review the proposed changes as well.

Thanks.
Jason

The message is ready to be sent with the following file or link attachments:

95010001 - USS_4.doc

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, March 23, 2010 7:06 AM
To: Romaine, Chris
Subject: FW: Emailing: 95010001 - USS_4.doc

fyi

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REVIEWER JRM

-----Original Message-----
From: Benbenek, Jeff
Sent: Monday, March 22, 2010 3:25 PM
To: Schnepp, Jason
Subject: RE: Emailing: 95010001 - USS_4.doc

Jason,

I will likely have comments on this one. Particularly concerned about language changes to the original permit.

Jeff

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From: Schnepp, Jason
Sent: Friday, March 19, 2010 1:48 PM
To: Robert B Ribbing
Cc: Benbenek, Jeff
Subject: Emailing: 95010001 - USS_4.doc

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Schnepp, Jason

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Schnepp, Jason

From: Benbenek, Jeff
Sent: Friday, March 19, 2010 1:57 PM
To: Schnepp, Jason
Subject: RE: Emailing: 95010001 - USS_4.doc

Jason,

Thanks for providing the draft. I do not know when I will get a chance to review it, but I am interested in it from our perspective.

Jeff

-----Original Message-----
From: Schnepp, Jason
Sent: Friday, March 19, 2010 1:48 PM
To: Robert B Ribbing
Cc: Benbenek, Jeff
Subject: Emailing: 95010001 - USS_4.doc

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REVIEWER JRM

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Thanks.
Jason

The message is ready to be sent with the following file or link attachments:

95010001 - USS_4.doc

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Schnepp, Jason

From: Carter, Sally
Sent: Tuesday, March 16, 2010 2:31 PM
To: Schnepp, Jason; Romaine, Chris
Subject: RE: Request for conference call with US Steel re: Revised Production Increase Permit

I am available on the afternoon of the 18th, all day on the 22nd and 23rd, all day on the 24th with exception of 12:30 to 2:30 and all day on the 25th.

From: Schnepp, Jason
Sent: Tuesday, March 16, 2010 2:28 PM
To: Carter, Sally; Romaine, Chris
Subject: Request for conference call with US Steel re: Revised Production Increase Permit

Sally and Chris,

Bob Ribbing called and asked for a conference call to discuss the draft revised production increase permit we sent them. He said US Steel would have an attorney present on the call. Please let me know your availability for this week and next week. It looks like Chris and I are generally available 3/17 – 23. Chris, if any of these dates look bad, let me know.

Jason

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Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, March 16, 2010 2:28 PM
To: Carter, Sally; Romaine, Chris
Subject: Request for conference call with US Steel re: Revised Production Increase Permit

Sally and Chris,

Bob Ribbing called and asked for a conference call to discuss the draft revised production increase permit we sent them. He said US Steel would have an attorney present on the call. Please let me know your availability for this week and next week. It looks like Chris and I are generally available 3/17 – 23. Chris, if any of these dates look bad, let me know.

Jason

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Schnepp, Jason

From: Romaine, Chris
Sent: Thursday, March 11, 2010 12:29 PM
To: Schnepp, Jason
Subject: FW: Question on Production Increase Permit

Please gibe Bob a call,

Thanks

From: Robert B Ribbing [mailto:RBRibbing@uss.com]
Sent: Thursday, March 11, 2010 10:11 AM
To: Romaine, Chris
Cc: Jill A Foust
Subject: Question on Production Increase Permit

Chris,
Could you please call me sometime. I have a question regarding the Production Increase Permit.

Thanks,

Robert B. Ribbing
EQC Department
U.S. Steel - Granite City Works
Phone: 618-451-4026
Cell: 618-779-0199
Fax: 618-451-4020

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Schnepp, Jason

From: Carter, Sally
Sent: Monday, March 01, 2010 8:39 AM
To: Romaine, Chris
Cc: Schnepp, Jason
Subject: RE: My homework assignment

Noteman? What kind of super hero outfit does Noteman wear? I think I already know his purported super powers.

I would use the term "effective" rather than "adopted". Technically, the regulation was adopted prior to May 22, 1996. It became effective on May 22, 1996.

I am concerned that this note may actually confuse the public. Despite earlier clarification over the scope of the permit, I believe the public will wonder why this regulation has not been included in the permit. If not clarified (again) in this note, further discussion of why this regulation is not in play should be provided in the Project Summary... (ie., due to the clean-up of permit).

From: Romaine, Chris
Sent: Saturday, February 27, 2010 5:10 PM
To: Carter, Sally
Cc: Schnepp, Jason
Subject: RE: My homework assignment

This looks like it may be a job for Noteman.

P.S. The note would be something like, "Note: See also 35 IAC 212.446(c), adopted May 22, 1996.

From: Carter, Sally
Sent: Wednesday, February 24, 2010 1:37 PM
To: Romaine, Chris
Subject: My homework assignment

I just gave the answer to Schneppers

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Schnepp, Jason

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I just gave the answer to Schneppers

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Schnepp, Jason

From: Belogorsky, Anatoly
Sent: Friday, February 19, 2010 8:14 AM
To: Romaine, Chris
Cc: Schnepp, Jason; Reed, Michael
Subject: RE: Working draft of a revision to the production increase permit for the Granite City Works

OK, I would appreciate such discussion.

From: Romaine, Chris
Sent: Thursday, February 18, 2010 6:12 PM
To: Belogorsky, Anatoly
Cc: Schnepp, Jason; Reed, Michael
Subject: RE: Working draft of a revision to the production increase permit for the Granite City Works

Thank for looking over the working draft of a revision to this PSD permit. We will come over some time in the next couple of days to discuss it with you.

With respect to the Integrated Iron and Steel NESHAP (and other applicable NESHAPs), which are not proposed to be added to the permit, this is because this revision would involve changes to a construction permit that was originally issued in 1996. This is before these NESHAPs were adopted, so they were not addressed in the original PSD permit. In particular, 40 CFR 63, Subpart FFFFF, was not adopted until May, 2003. Also, as NESHAPs are adopted and become effective, subject sources must comply with them as a matter of rule. NESHAPs do not have to be mentioned in a construction permit for them to become applicable for subject sources.

From: Schnepp, Jason
Sent: Thursday, February 18, 2010 11:23 AM
To: Romaine, Chris
Subject: FW: Draft of for the revised production increase permit

Can you please handle this.

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From: Belogorsky, Anatoly
Sent: Thursday, February 18, 2010 10:29 AM
To: Reed, Michael
Cc: Schnepp, Jason
Subject: RE: Draft of for the revised production increase permit

Jason,

I've briefly looked into this draft and I have one big Q so far: why the permit not addressing integrated steel MACT at all? This draft will be on the public notice and by not addressing current fundamental regulatory statutes applicable to this source we are giving the outsiders perfect ammunition to smash us terribly.

From: Reed, Michael
Sent: Wednesday, February 17, 2010 11:37 AM
To: Belogorsky, Anatoly
Cc: Schnepp, Jason
Subject: FW: Draft of for the revised production increase permit

Anatoly,

Please take a look at this modified US Steel construction permit and provide any comments to Jason.

Pay particular attention to how you will eventually incorporate this into the CAAPP. Keep in mind this is a really "hot issue" and your statement of basis is going to need additional discussion on the rationale and justification. I would suggest speaking with Jason to make sure that what you will need on our end is in his permit record and he has explained enough for you to pick up the ball and complete.

Please get back to him by Tues. 2/23 close of business.

Thanks.

Michael T. Reed, CAAPP Unit Manager
Illinois Environmental Protection Agency
BOA/DAPC/Permit Section
1021 N. Grand Ave East
Springfield, Illinois 62794
Michael.Reed@illinois.gov
Office: 217.782.4651 | Fax 217.524.5023

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From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 10:57 AM
To: 'Jill A Foust'
Cc: Romaine, Chris; Kaleel, Rob; Carter, Sally; Reed, Michael
Subject: Draft of for the revised production increase permit

Jill,
Please review the attached draft permit.
Thanks.
Jason

Schnepp, Jason

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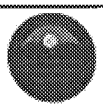
Please get back to him by Tues. 2/23 close of business.

Thanks.



Michael T. Reed, CAAPP Unit Manager
Illinois Environmental Protection Agency
BOA/DAPC/Permit Section
1021 N. Grand Ave East
Springfield, Illinois 62794
Michael.Reed@illinois.gov
Office: 217.782.4651 | Fax 217.524.5023

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Thanks.

Michael T. Reed, CAAPP Unit Manager
Michael.Reed@Illinois.gov
Office: 217.782 4651 | Fax 217.524 5023

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Thanks.

Michael T. Reed, CAAPP Unit Manager
Michael.Reed@illinois.gov
Office: 217.782.4651 | Fax 217.524.5023

From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 10:57 AM
To: 'Jill A Foust'
Cc: Romaine, Chris; Kaleel, Rob; Carter, Sally; Reed, Michael
Subject: Draft of for the revised production increase permit

Jill,
Please review the attached draft permit.
Thanks.
Jason

Schnepp, Jason

From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 12:54 PM
To: Kaleel, Rob
Subject: RE: Draft of for the revised production increase permit

Correct.

From: Kaleel, Rob
Sent: Tuesday, February 16, 2010 11:53 AM
To: Schnepp, Jason
Subject: RE: Draft of for the revised production increase permit

Will do. From what I'm reading, this is a clean-up of outstanding issues from the 1996 permit and is not for any new production changes, correct?

From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 11:00 AM
To: Kaleel, Rob
Subject: FW: Draft of for the revised production increase permit

Rob,

I couldn't remember who was assigned this project. Please forward the permit that I recently sent you to your staff handling the modeling for this PSD application. Thanks.

Jason

From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 10:57 AM
To: 'Jill A Foust'
Cc: Romaine, Chris; Kaleel, Rob; Carter, Sally; Reed, Michael
Subject: Draft of for the revised production increase permit

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Jill,
Please review the attached draft permit.
Thanks.
Jason

Schnepp, Jason

From: Kaleel, Rob
Sent: Tuesday, February 16, 2010 12:20 PM
To: Brooks, Pamela
Cc: Sprague, Jeff; Schnepp, Jason
Subject: RE: Draft of for the revised production increase permit

My bad... This is about US Steel in Granite City.

From: Brooks, Pamela
Sent: Tuesday, February 16, 2010 12:02 PM
To: Kaleel, Rob
Cc: Sprague, Jeff; Schnepp, Jason
Subject: RE: Draft of for the revised production increase permit

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What company?...I did not get the attached draft.

Thanks,
Pam

From: Kaleel, Rob
Sent: Tuesday, February 16, 2010 11:53 AM
To: Sprague, Jeff; Brooks, Pamela
Subject: FW: Draft of for the revised production increase permit

Jeff... Was Pam assigned to this? Looks like Permits wants to move on it.

From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 11:00 AM
To: Kaleel, Rob
Subject: FW: Draft of for the revised production increase permit

Rob,

I couldn't remember who was assigned this project. Please forward the permit that I recently sent you to your staff handling the modeling for this PSD application. Thanks.

Jason

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Cc: Romaine, Chris; Kaleel, Rob; Carter, Sally; Reed, Michael
Subject: Draft of for the revised production increase permit

Jill,
Please review the attached draft permit.
Thanks.
Jason

Schnepp, Jason

From: Reed, Michael
Sent: Tuesday, February 16, 2010 12:09 PM
To: Schnepp, Jason
Subject: RE: Draft of for the revised production increase permit

Yes. I will have Anatoly review this and get back to you by Tuesday 2/23/10.

Michael T. Reed, CAAPP Unit Manager
Michael.Reed@illinois.gov
Office: 217.782.4651 | Fax 217.524.5023

From: Schnepp, Jason
Sent: Tuesday, February 16, 2010 10:58 AM
To: Reed, Michael
Subject: FW: Draft of for the revised production increase permit

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Mike,
This draft will go to public notice. Do you plan to comment on this draft?
Jason

From: Schnepp, Jason
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To: 'Jill A Foust'
Cc: Romaine, Chris; Kaleel, Rob; Carter, Sally; Reed, Michael
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Please review the attached draft permit.
Thanks.
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From: Kaleel, Rob
Sent: Tuesday, February 16, 2010 11:53 AM
To: Sprague, Jeff; Brooks, Pamela
Subject: FW: Draft of for the revised production increase permit

Jeff... Was Pam assigned to this? Looks like Permits wants to move on it.

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Thanks.
Jason

Schnepp, Jason

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To: Schnepp, Jason
Subject: RE: Draft of for the revised production increase permit

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Jason

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Schnepp, Jason

From: Schnepp, Jason
Sent: Wednesday, January 06, 2010 10:20 AM
To: Carter, Sally
Cc: Romaine, Chris
Subject: RE: multi part permit

I will wait for Chris' search and then I will turn this over to the proper authorities. Thanks.

Jason

From: Carter, Sally
Sent: Wednesday, January 06, 2010 10:04 AM
To: Schnepp, Jason
Cc: Romaine, Chris
Subject: RE: multi part permit

I have the US Steel Title V record. I do not believe I have the Production Increase Permit file... although, I remember our friend Romaine holding it in a special spot in his old office for safe keeping. If you want, you can go through my boxes. I just do not have the energy to move boxes today as my daughter has contaminated me yet again. I also have to be in the file room at 10:30 this am to discuss a few matters with Betsy and a conference call and meetings all afternoon. Once I feel better, I will be better suited to move boxes.

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From: Schnepp, Jason
Sent: Wednesday, January 06, 2010 9:50 AM
To: Carter, Sally; Romaine, Chris
Cc: Belogorsky, Anatoly; Crawford, Amelia
Subject: RE: multi part permit

Please check your areas for parts other than part 1 of 95010001 – US Steel Production Increase Permit. If you don't have this file I will notify the file room to send out a more formal search request.

Thanks.

Jason

From: Crawford, Amelia
Sent: Wednesday, January 06, 2010 9:48 AM
To: Schnepp, Jason
Subject: RE: multi part permit

Did you ask him who he gave it to when it left his possession? I have an out card saying that part 1 is with Chris Romaine and part 2 is with Anatoly. Neither have been returned. You may want to check with Sally Carter too. Sometimes these Title V's end up there with her.

From: Schnepp, Jason
Sent: Wednesday, January 06, 2010 9:43 AM
To: Crawford, Amelia
Cc: Romaine, Chris; Belogorsky, Anatoly
Subject: RE: multi part permit

Anatoly does not have this file.

From: Crawford, Amelia
Sent: Wednesday, January 06, 2010 9:40 AM
To: Schnepp, Jason
Subject: RE: multi part permit

I have an out card showing part 2 is with Anatoly Belogorsky. You will need to check with him to get the other part of the permit. Please let me know when you receive it and I will correct the out card to show that you have the file.

From: Schnepp, Jason
Sent: Wednesday, January 06, 2010 9:36 AM
To: Crawford, Amelia
Cc: Romaine, Chris
Subject: multi part permit

Amy,
Permit 95010001 is assigned to me. I have just corrected ICEMAN to show that the current location is with me; however, I noticed I only have Part 1 of the application. Can you please pull the remaining parts and route them to me? This is a construction permit for a Title V source. Thanks.
Jason

Schnepp, Jason

From: Carter, Sally
Sent: Wednesday, January 06, 2010 10:04 AM
To: Schnepp, Jason
Cc: Romaine, Chris
Subject: RE: multi part permit

I have the US Steel Title V record. I do not believe I have the Production Increase Permit file... although, I remember our friend Romaine holding it in a special spot in his old office for safe keeping. If you want, you can go through my boxes. I just do not have the energy to move boxes today as my daughter has contaminated me yet again. I also have to be in the file room at 10:30 this am to discuss a few matters with Betsy and a conference call and meetings all afternoon. Once I feel better, I will be better suited to move boxes.

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Cc: Belogorsky, Anatoly; Crawford, Amelia
Subject: RE: multi part permit

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To: Schnepp, Jason
Subject: RE: multi part permit

I have an out card showing part 2 is with Anatoly Belogorsky. You will need to check with him to get the other part of the permit. Please let me know when you receive it and I will correct the out card to show that you have the file.

From: Schnepp, Jason
Sent: Wednesday, January 06, 2010 9:36 AM

To: Crawford, Amelia
Cc: Romaine, Chris
Subject: multi part permit

Amy,
Permit 95010001 is assigned to me. I have just corrected ICEMAN to show that the current location is with me; however, I noticed I only have Part 1 of the application. Can you please pull the remaining parts and route them to me? This is a construction permit for a Title V source. Thanks.
Jason

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 - (217) 782-2113

PAT QUINN, GOVERNOR LISA BONNETT, INTERIM DIRECTOR

July 5, 2011

United States Steel Corporation - Granite City Works
Attn: Jill Foust
1951 State Street
Granite City, Illinois 62040

Re: US Steel's Application for Revisions to Construction Permit No. 95010001
Deadline for Comments on a Preliminary Draft of a Revised Permit

Dear Ms. Foust:

By this letter, the Illinois EPA is setting a deadline, August 15, 2011, for US Steel to submit its comments on the preliminary draft of a revision to Construction Permit 95010001 previously prepared by the Illinois EPA and provided to US Steel.

As you aware, Construction Permit 95010001, which addresses a production increase at US Steel's Granite City Works, must be revised pursuant to a 2007 Consent Decree. In March 2010, the Illinois EPA sent a preliminary draft of a revision to this permit to US Steel for its comments. To date, US Steel has not provided comments on the March 2010 draft. US Steel's comments on the preliminary draft of a revised permit are needed to facilitate the processing of the revisions to this permit.

If you have any questions on this matter, please contact Jason Schnepp at 217/782-2113.

Edwin C. Bakowski

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

ECB:JMS:psj

Enclosure

Application No. 95010001, ID No. 119813AAI

cc: S. Carter, DLC
C. Pressnall, DLC

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

217/782-2113

CONSTRUCTION PERMIT/PSD APPROVAL - REVISED

PERMITTEE

United States Steel Corporation - Granite City Works
Attn: Jill Fouse
1951 State Street
Granite City, Illinois 62040

Application No.: 95010001
Applicant's Designation:
Subject: Production Increase Project
Date Initial Permit Issued: January 25, 1996
Date Revised Permit Issued: DRAFT 1/12/2010
Location: Granite City Works, Granite City

I.D. No.: 119813AAI
Date Received: February 4, 2008

This Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of A Production Increase Project, as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for the above referenced project, as described in the application. In that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated thereunder at 40 CFR 52.21 for PSD, and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the findings and conditions that follow.

If you have any questions on this permit, please contact Jesse Schnepp at 217/782-2113.

Edward C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed:

ECB:JRS:

cc: FOS Region 3

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Comment [JMS1]: This permit has been revised several times. Original issued 1/25/96.

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FINDINGS FOR REVISED PERMIT

1. United States Steel Corporation Granite City Works (US Steel) applied for a revision to its Construction Permit/PSD Approval for a Production Increase Project. This permit, which was originally issued on January 25, 1996, authorized increases in iron and steel production at the plant. The requested revision would correct sulfur dioxide (SO_2) emission rates for combustion of blast furnace gas. US Steel also applied for revisions to the permit to correct volatile organic material (VOM) and carbon monoxide (CO) emission rates for combustion of natural gas. No additional increases in production or modifications are authorized by this permit revision.

2a. Because this revision involves correction to the emission information originally provided for the project, this revision has been evaluated using the New Source Review (NSR) rules that applied for the original permit application. At that time, the area in which the plant is located was designated nonattainment for ozone and particulate matter less than 10 micrometers (PM_{10}) and attainment for all other pollutants.

b. i. With the corrected emission rates for SO_2 and CO, which are higher than provided in the original application, this project is still subject to a PSD review as a major modification for SO_2 and CO emissions. This is because the corrected net emissions increases for the project are still significant as summarized in Table 5.

ii. This project would still not be subject to PSD for other PSD pollutants as summarized in Table 5.

c. With the corrected emission rates for VOM, the revised net emissions increase for this project still is not subject to 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM). This is because the increase in emissions is still not significant, i.e., the increase of VOM emissions is less than 40 tons/year as also summarized in Table 5.

3a. After reviewing US Steel's request, the Illinois EPA has determined that the application for the revised permit complies with all applicable Illinois Pollution Control Board air pollution control regulations and the applicable provisions of the federal PSD rules.

b. As the units associated with this project which contribute to a significant increase in emissions do not undergo a physical change or change in the method of operation, these units are not subject to BACT.

4. The revised air quality analysis submitted for the project shows that the project will not cause violations of the ambient air quality standards for CO and SO_2.

5. In conjunction with issuance of this revised permit, various changes have also been made to clarify the requirements of this permit, including clarifications of the form of particulate matter that is addressed by various standards and the associated compliance time periods. These changes are not intended to make substantive changes to

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the requirements of this permit.

6a. The conditions of this permit supplement the conditions of applicable state operating permits for this source that were in effect on January 28, 1996, when this permit was originally issued. Where a conflict exists between a condition of this permit and a condition of such operating permit, the condition in this permit shall take precedence except as specifically identified.

b. The conditions of this permit do not affect the conditions of other Construction Permits issued since January 28, 1996. In particular, this permit does not affect conditions of Construction Permit 06070023, issued on January 30, 2008 for a new cogeneration boiler, which could replace existing Boilers 7 through 10. It also does not affect the conditions of Construction Permit 05070086, issued March 13, 2008, for a Conveyor Belt associated with a heat recovery coke plant constructed by Gateway Energy, which permit requires reductions in road dust emissions beyond those required by this permit.

c. The conditions of this permit do not affect the requirements of the Clean Air Act Permit Program (CAAPP) permit issued to the source.

Note: CAAPP Permit No. 96090056 was issued to the source on September 1, 2009. It was appealed by the Permittee and has not yet taken effect.

7. A copy of the application and the Illinois EPA's review of the application and a draft of the permit were forwarded to a location in the vicinity of the plant, and the public was given notice and opportunity to examine this material and to submit comments.

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CONDITIONS

1. The Illinois EPA is issuing this approval consistent with the specifications and data included in the application. Any significant departure from terms expressed in the application would need to receive prior written authorization of the Illinois EPA.

BLAST FURNACE OPERATIONS (BLAST FURNACES A AND B)

2a. Total combined production of hot metal (molten iron) from the blast furnaces shall not exceed 9,849 net tons per day, averaged over any calendar month.

b. Total combined production of hot metal from the blast furnaces shall not exceed 3,165,000 net tons per year. Compliance with this annual limit and certain other annual limits set by this permit shall be determined on a calendar year basis, as provided in Condition 32(c).

3a. Particulate matter emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1). For this purpose, particulate matter shall be determined as filterable particulate matter as would be measured by USEPA Method 5, as specified by 35 IAC 212.452.

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(2).

4. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in Table 1.

BASIC OXYGEN FURNACE (BOF) SHOP

6a. Total combined production of liquid steel from the BOF shall not exceed 11,000 net tons per day, averaged over any calendar month.

b. Total combined production of liquid steel from the BOF shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF ESP stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(2)3. For this purpose, PM_{10} emissions shall be determined as filterable particulate matter as would be measured by appropriate USEPA Methods, as specified by 35 IAC 212.108.

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8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 30% on a 3 minute rolling average basis.

Note: See also 35 IAC 212.445(c), effective May 22, 1996.

9a. The Permittee shall determine the opacity from the openings BOF shop on at least a weekly basis. Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9 including the requirement that readings be taken by a certified observer.

d. These determinations shall be recorded in a log book, which at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.

10. The Permittee shall follow the operating procedures and requirements specified in Attachment A for the BOF, which are designed to ensure proper operation of the ESP and BOF control system. A copy of these procedures shall be posted in the BOF control room or Pulpit.

11. Flame suppression shall be used and maintained on each BOF vessel during the entire tapping process.

Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.

12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency at the charging and primary hoods:

i. Set point requirements while only a single BOF vessel is in operation:

A. Minimum set point during charging process: 550,000 cfm;

B. Minimum set point during refining process: 650,000 cfm;

C. Minimum set point during tapping process: 300,000 cfm (until one minute after completing alloy addition);

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b. i. During dual operation of BOF vessels (i.e., overlapping BOF operation), the minimum set point for the BOF control system shall be 700,000 cfm.

ii. Overlapping operations of the BOF vessels is allowed under the following conditions, which conditions shall be part of the Standard Operating Procedures (SOP) for the BOF vessels.

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. The draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the draft may begin to be transferred over to the capture system for the other vessel in order to satisfy condition (A) above.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

c. Except for purposes of emissions testing as related to the set point, the BOF capture system shall be operated at or above the applicable minimum set points until and unless the Agency approves a lower minimum set point based on a demonstration that a better level of particulate matter control will occur.

d. i. The Permittee shall calibrate, operate, and maintain a continuous monitor for stack gas flow rate from the BOF Control System (ESP stack) with a continuous strip chart recorder or other continuous recording device for numerical data on a minute by minute basis of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use. This monitor shall be calibrated on at least a quarterly basis.

ii. For each steel production cycle of a BOF vessel, the Permittee shall record the various stack gas flow rates for each process (i.e., for charging, refining and tapping) in the steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each process during each production cycle.

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13a. The Permittee shall operate and maintain the waste gas suction monitor system that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

b. The waste gas suction monitoring system shall be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated and maintained to ensure accurate and useful data.

d. The Permittee shall continuously record the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

14a. The Permittee shall visually inspect at least monthly all visible BOF vessel enclosures, hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which include, the following:

a. Operating time of the BOF;

b. Operating time of the capture systems and performance parameters, including air flow and fan amperage through the fan motors, gas temperature at inlet to ESP, damper settings, and steam injection rate;

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c. Operating time of the ESP and performance parameters, including voltage and amperage of each transformer/rectifier set, number of sections in use;

d. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.

18. Emissions from the BOF Shop shall not exceed the limits in Table 2.

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Table 3.

FUEL COMBUSTION UNITS

21. Total fuel usage for blast furnace stoves (Stoves A and B), boiler house boilers (Boilers 1-10), blast furnace boilers (Boilers 11 and 13), existing blast furnace gas flare, and ladle drying preheaters (the subject fuel combustion units) shall not exceed the limits in Table 4(a).

Note: Boilers 1-10 were permanently shutdown in ????, in conjunction with construction of the Cogeneration Boiler. (See Finding 6(b).)

22a. Emissions from the subject fuel combustion units shall not exceed the limits in Table 4(b), (c), and (d).

b. These limits do not address emissions attributable to burning coke oven gas (COG) in these units.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for maps that summarize the required fugitive dust roadway control measures for various road segments at the plant)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as to eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

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b. Blast Furnace Gas (BFG) usage: 30,800 million ft³ per month and 185,930 million ft³ per year; ¶
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c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year. ¶
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ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in Attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

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i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas that are part of normal traffic patterns as identified in attachment B, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and G shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily,

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

vii. Notwithstanding the above, roads shall not be considered part of the normal traffic patterns of the source if they are out of service for an extended period or are no longer utilized by the Permittee.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF FSP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

a. The date (and time for the gate areas) each road or area was treated;

b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

Note: Additional requirements now apply for control of fugitive dust from off-site roadways in conjunction with the construction of Gateway Energy. (See Finding 6(b).)

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in Conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

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B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in Conditions 2(b) and 6(b).

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C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual production limits in Conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

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2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

33a. Compliance with opacity limits and measurements of opacity shall be made by opacity observations taken in accordance with the procedures set out in 40 CFR Part 60, Appendix A, Method 9.

b. The Permittee shall have at least two employees or agents who are certified for and experienced in making opacity observations to the extent that it is reasonably possible to do so, who shall be able to make the opacity observations required by this permit.

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, subject to adjustment based upon documented slag and iron losses.

b. BOF liquid steel production shall be measured by a scale equipped crane, subject to adjustment based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{million ft}^3 \text{ BFG per month} = \frac{(4.585277\,\text{NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

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b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage of the subject fuel combustion units as follows: Natural gas (total combined million ft³ per month and year); BFG (total combined million ft³ per month and year); and fuel oil (total combined gallons per month and year).

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

37. Emissions testing shall be performed upon request by the Illinois EPA as specified in Condition 5.7 of the source's CAAPP Permit.

38. This revised permit does not alter the historical requirements for testing of emissions in Condition 3A of the original permit issued January 2nd, 1976, which required testing that was to be performed by August 6, 1997.

Note: The original permit required testing of particulate matter emissions at Boiler #2 while burning blast furnace gas.

REPORTING

39. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois EPA
Bureau of Air
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

40. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Iron and steel production (tons/month and tons/yr, each);

b. Natural gas and BFG usage (mmft³/month and mmft³/yr, each);

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Deleted: 37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source, and supersede such conditions in cases where a conflict exists.¶

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¶
i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);¶
¶
b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.¶
¶
c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Boiler [1]

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c. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF NEW SOURCE REVIEW (NSR)

41a. This permit was originally issued on January 25, 1996 based upon the following changes in emissions, accompanying increased production as allowed by this permit, as further described in Table 6 in the original permit issued for this project:

i. The increases in emissions of VOM and lead are not significant under 35 IAC Part 203 and 40 CFR 52.21, respectively.

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 IAC Part 203 or 40 CFR 52.21.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 IAC Part 203 or 40 CFR 52.21.

Note: The Permittee has also agreed to provide further additional dust control consisting of the sweeping of certain Granite City public streets (See Condition 30) and housekeeping measures in the area below and surrounding the BOF ESP (See Condition 34). Attachment C is a listing of the emission reductions provided by these control measures.

iv. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21. Accordingly, the project is considered a major modification and must comply with the substantive requirements of 40 CFR 52.21 for SO_2 and CO emissions.

42. A separate construction permit, Permit 98110038, issued December 9, 1998 that allowed an increase in usage of natural gas. That permit was issued based on the increases in emissions of PM, PM_{10}, SO_2, NO_x and VOM resulting from increased natural gas combustion, as allowed by that permit, not altering the applicability of NSR to this project. The accounting of the increases in emissions is shown in Tables I, II, and III of that permit.

c. This revised permit is issued based on the following incremental increases in permitted emissions with the correction of certain emission data:

i. An increase of 249.2 tons per year of SO_2.

ii. An increase of 4.4 tons per year of CO.

iii. An increase of 0.3 tons per year of VOM.

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TABLE 1

EMISSION LIMITS FOR BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping) - captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0703	111.19
PM_{10}	0.0703	111.19
SO_2	0.2006	422.0
NO_x	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.031	49.06
PM_{10}	0.0155	24.53
SO_2	0.0104	21.94
NO_x	0.0007	1.38
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0024	5.17
PM_{10}	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00417	6.60
PM_{10}	0.00417	6.60
SO_2	0.0100	15.83

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TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.02548	40.32
PM_{10}	0.02548	40.32
SO_2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00279	6.01
PM_{10}	0.00279	6.01

7. Totals

Pollutant	Emissions (Tons/Yr)
PM	213.35
PM_{10}	133.83
SO_2	477.69
NO_x	72.93
VOM	157.39

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TABLE 2

EMISSION LIMITS FOR BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack (charge, refine, tap)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.16	262.80
PM_{10}	0.16	262.80
NO_x	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.1934 lbs/hr	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0987	176.71
PM_{10}	0.06614	118.40
Lead	0.0129 lbs/hr	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.03721	58.88
PM_{10}	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09 tons/yr

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00032	0.57
PM_{10}	0.00032	0.57

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TABLE 2 (cont.)

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0016	2.86
PM_{10}	0.0016	2.86

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6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0050	7.94
PM_{10}	0.0050	7.94

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7. Totals

Pollutant	Emissions (Tons/Yr)
PM	504.75
PM_{10}	451.45
NO_x	69.63
VOM	12.32
CO	16,097.44
Lead	1.43

TABLE 3

EMISSION LIMITS FOR CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00715	12.80
PM_{10}	0.00715	12.80

2. Deslagging Station and Material Handling System.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00355	6.35
PM_{10}	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.006	10.74
PM_{10}	0.006	10.74
NO_x	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00852	15.25
PM_{10}	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0071	12.71
PM_{10}	0.0071	12.71

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TABLE 3 (cont.)

6. Slab Ripping

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00722	12.92
PM_{10}	0.00722	12.92

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7. Totals

Pollutant	Emissions (Tons/Yr)
PM	70.27
PM_{10}	70.27
NO_x	83.50

TABLE 4

EMISSION LIMITS FOR CERTAIN FUEL COMBUSTION UNITS[1]

a. Total combined fuel usage from the subject units[2]

Fuel Type	Maximum Usage Monthly	Maximum Usage Annual
Natural Gas (total)	225 million scf	1,346 million scf
BFG	30,600 million scf	185,030 million scf
Fuel Oil	60,000 gallons	365,000 gallons

b. Emissions from Combustion of Natural Gas

Pollutant	Emission Factor Lbs/million scf	Maximum Emissions Tons/Yr
PM	5.1	3.43
PM_{10}	5.1	3.43
SO_2	0.6	0.40
NO_x	306	205.94
VOM	5.5	3.70
CO	84	56.53

c. Emissions from Combustion of Blast Furnace Gas

Pollutant	Emission Factor Lbs/million scf	Maximum Emissions Tons/Yr
PM	2.9	268.29
PM_{10}	2.9	268.29
SO_2	16.0	1,480.24
NO_x	5.28	488.48
CO	13.7	1,267.46

d. Emissions from Combustion of Oil

Pollutant	Emission Factor Lbs/1000 gallon	Maximum Emissions Tons/Yr
PM	9.72	1.77
PM_{10}	9.72	1.77
SO_2	141.3	25.79
NO_x	55	10.04
VOM	0.28	0.05
CO	5.0	0.91
Lead (waste oil)	0.336	0.06

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2. 2 boilers (#'s 11 - 12)¶
3. Blast Furnace Stoves A & B.¶
4. BFG Flares¶
5..Ladle Drying Preheaters (5 heaters).¶
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BFG
185,030 ¶
¶
Fuel Oil
365 thousand gallons/yr¶

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Page 22

* Subject units include
1. Ten boilers (Boilers 1 - 10)
2. Two boilers (Boilers 11 - 12)
3. Blast Furnace Stoves A & B
4. Blast Furnace Gas (BFG) Flare
5. Ladle Drying Preheaters (5 heaters)

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TABLE 5

SUMMARY OF EMISSIONS FROM MAJOR OPERATIONS AND ACTIVITIES

Operation/Activity	Emission Limits (Tons/Year)				
	PM	PM_{10}	SO_2	NO_x	VOM
Blast Furnace Operations	218.35	102.82	473.66	23.93	157
BOF Shop	509.76	451.45	--	69.63	12
Continuous Casting Operations	70.77	70.77	--	69.50	
Certain Fuel Combustion Units[A]	273.49	273.49	1,906.43	794.46	
Roadways	27	27	--	--	
Material Handling	2	2	--	--	
Totals	1,101.37	1,018.53	1,980.09	887.52	179

Notes:

[A] Excludes emissions associated with combustion of coke oven gas, which are not affected by the increased production of metal and steel.

TABLE 6

OVERALL EVALUATION OF PROJECT NET EMISSIONS CHANGES
(Updated March 2010, for revised permit)

	Emission (Tons/Year)				
	PM	PM_{10}	SO_2	NO_x	VOM
Project Emission Changes	-52.0	51.6	775.2	238.8	
Contemporaneous Increases	20.3	20.7	0.3	26.0	
Contemporaneous Decreases	58.0	58.0	0.1	226.5	
Net Emissions Change	-89.3	14.3	775.1	38.3	
Significance Threshold	25	15	40	40	
Greater than significant?	No	No	Yes	No	

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TABLE 7

COMPARISON OF CHANGES FROM PREVIOUS PERMIT TO REVISED PERMIT ISSUED 6/8/2010

	Previous Permit Emission (Tons/Year)			Adjustments Emission (Tons/Year)		
	SO_2	VOM	CO	SO_2	VOM	CO
Project Emission Changes	476.0	39.3	5,689.0	299.2	0.3	4.4
Contemporaneous Increases	0.25	1.6	11.9	---	---	---
Contemporaneous Decreases	0.36	32.8	83.31	---	---	---
Net Emissions Change	475.9	39.1	5,672.5	299.2	0.3	4.4
Significance Threshold	40	40	100			
Greater than Significant?	Yes	No	Yes			

* No changes have been made to emissions of PM, PM_{10}, $PM_{2.5}$, or lead.

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Comment [JMS5]: Includes 4.6 (or 4.4) tpy attributable to switching NG CO factor from 40 to 84 on 208 mmscf (or 201).

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Change in Emissions from Increased Natural Gas Combustion¶

¶

¶

Baseline Emissions (Average of 1996 and 1997 Actuals)¶

¶

Emissions ¶
Pollutant
(Tons/Yr)¶
¶
PM
2.9¶
PM_{10}
2.9¶
SO_2
0.34¶
NO_x
174.11¶
VOM
1.59¶
CO
23.76¶
¶
Potential Emissions from Natural Gas Usage of 1,346 $mmft^3/Yr$¶
¶

Emissions ¶
Pollutant
(Tons/Yr)¶
¶
PM
3.43¶
PM_{10}
3.43¶
SO_2
0.40¶
NO_x
205.94¶
VOM
1.88¶
CO
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ATTACHMENT A

PROCEDURES TO ENSURE PROPER OPERATION OF THE BOF AND BOF CONTROL SYSTEM

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1. The emissions control operator shall:

   a. Check on a regular basis and report to the emissions control foreman or melter:

      i. Any ESP fields down;

      ii. Any ESP fields in which the meter readings are showing no current or a fault;

   b. Check on a regular basis that doors on all hopper screws are closed;

   c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.

2. The melter shall:

   a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;

   b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;

   c. Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:

      i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;

      ii. Check the stack gas pulpit set point for proper setting;

      iii. Call the emissions control operator who shall perform the following steps;

         A. Check the AVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;

         B. Check to ensure that doors on all hopper screws are closed;

   d. Check oxygen blow rates and adjust, if necessary;

   e. Check hot metal chemistry;

ATTACHMENT A (cont.)

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f. A log shall be maintained of the above checks and any actions taken as a result.

3. The emission control foreman shall:

a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;

b. Check on a regular basis the draft rate set points;

c. Check on a regular basis primary and secondary damper settings;

d. Check on a regular basis ESP operation, including the following:

i. Fields down;

ii. Fields indicating shorts and unable to reset;

iii. Hopper screw doors are closed;

e. Check on a regular basis blow rates;

f. Check on a regular basis spray water system operation;

g. Check on a regular basis steam injection rate;

h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;

i. Contact the area manager for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;

j. Notify the emissions control operator and melter when isolation work begins;

k. A log shall be maintained of the above checks and any actions taken as a result.

4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:

a. Use controlled pouring of the hot metal into the BOF vessel;

b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;

c. Use the most beneficial furnace tilt angle;

Page 38

d. A copy of these procedures shall be posted in the crane operator booth.

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ATTACHMENT 6

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ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND MAPS SHOWING THE ROAD SEGMENTS

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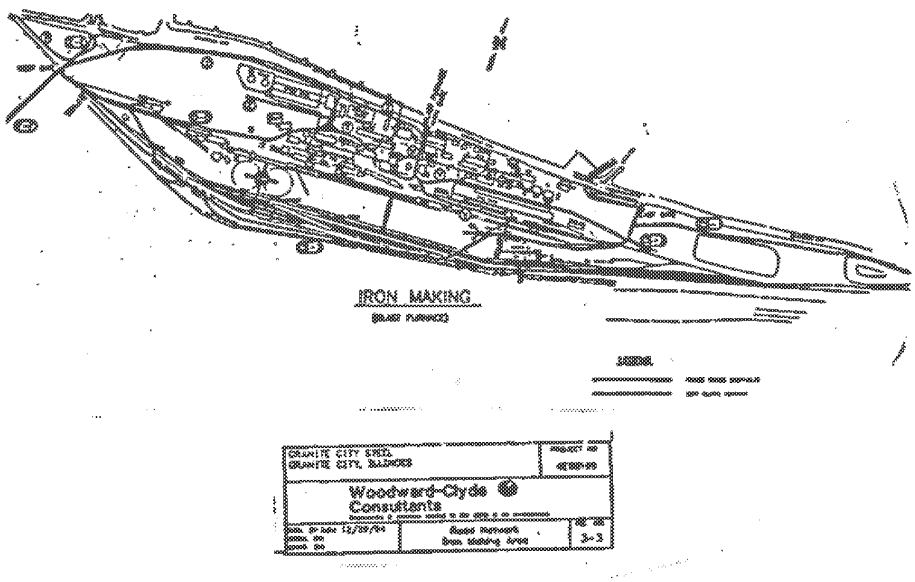

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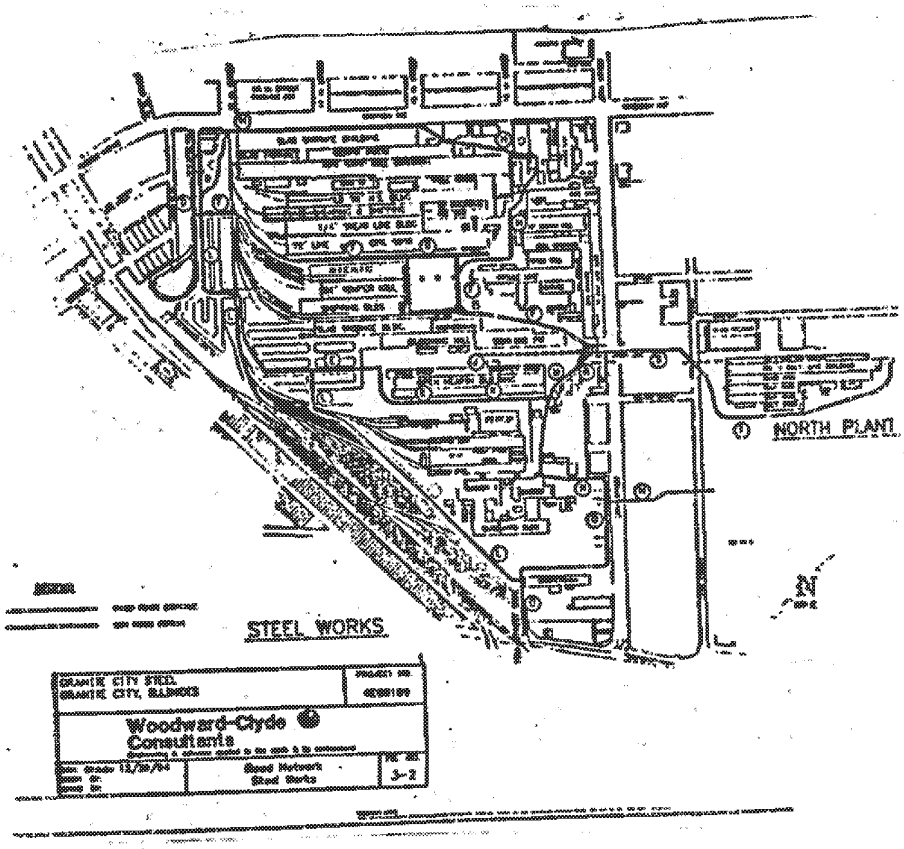

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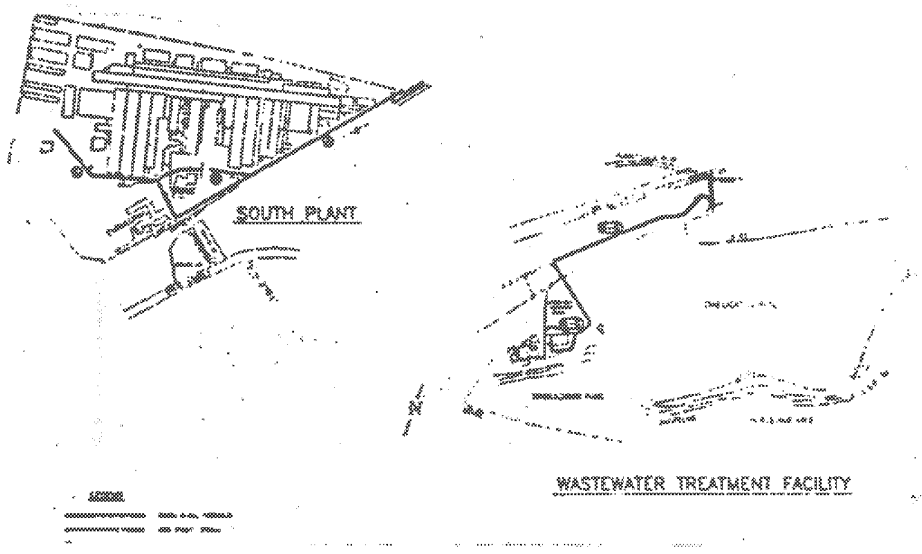

GRANITE CITY STEEL
GRANITE CITY, ILLINOIS

Woodward-Clyde Consultants

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ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE EMISSIONS OF PM-10

- Historic roadway emissions of 428 tons/yr, minus future potential roadway emissions of 27 tons/yr, equals a resulting reduction in roadway emissions of 401 tons/yr
- Historic material handling emissions of 17 tons/yr minus future potential material handling emissions of 2 tons/yr, equals a resulting reduction in material handling emissions of 15 tons/yr.
- Emission reductions resulting from the sweeping of city streets = 52 tons/yr*
- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/yr*

Total reductions in the emissions of PM-10 as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 480 tons/yr

* These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

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Rita Garl

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

June 26, 2013

CERTIFIED MAIL NO. 7011 3500 0000 7048 8723
RETURN RECEIPT REQUESTED

Mr. Robert Bernoteit
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794

Subject: Extension of Permit Application Review Periods
U. S. Steel – Granite City Works, Granite City, IL
(Facility ID No. 119813AAI)

Dear Mr. Bernoteit:

United States Steel, Granite City Works (GCW) is granting an extension, until September 30, 2013, to Illinois EPA for the review of the following permit applications:

- Production Increase Permit Renewal (IEPA Permit No. 95010001)
- Implementation of Memorandum of Understanding between U. S. Steel and Illinois EPA (Application #10080015)

Should you have questions or require additional information, please contact Bryan Kresak at 618-451-3391 or email bmkresak@uss.com.

Sincerely,

Richard E. Veitch

Richard E. Veitch
General Manager
Granite City Works
United States Steel Corporation

EPA-DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
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JUL 01 2013

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4/7/10

119813AAI STI

R009119

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

FILE IN ORANGE

NFR
1
send

RECEIVED
JUN 30 2010
Environmental Protection Agency
Bureau of Air
STATE OF ILLINOIS

June 28, 2010

CERTIFIED MAIL NO. 7008 1830 0001 1423 2527
RETURN RECEIPT REQUESTED

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Source Emission Test Specialist
9511 West Harrison Street
Des Plaines, Illinois 60016

RE: 119813AAI U.S. Steel – Granite City Works Cogen & Blast Furnace Gas Inlet Test Results

To Whom It May Concern:

The tests performed on April 6 and 7, 2010, on the Cogen Stack and Blast Furnace Gas Inlet, demonstrated compliance with the limits in Permit Application #06070023. The tests were performed during normal Blast Furnace and Cogen operations. Enclosed is the test report.

Should you have questions or require further information, please feel free to contact me at 618-451-3391, jafoust@uss.com or Michael McLean at 618-451-3451, memclean@uss.com.

Sincerely,

Jill Foust

Jill Foust
Manager – Environmental Control

cc: Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Compliance Unit #40
P.O. Box 19276
Springfield, Illinois 62794-9276
CERTIFIED MAIL NO. 7008 1830 0001 1423 2541

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234
CERTIFIED MAIL NO. 7008 1830 0001 1423 2534

IEPA - DIVISION OF RECORDS MANAGEMENT
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TEST REPORT

EMISSION TEST PROGRAM
COGEN BOILER STACK
COGEN BFG PRETREATMENT SYSTEM
FACILITY ID NO. 119813AAI
CONSTRUCTION PERMIT NO. 06070023

UNITED STATES STEEL CORPORATION
GRANITE CITY, ILLINOIS

PREPARED FOR:

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20th and State Streets
Granite City, Illinois 62040
Phone: 618.451.3451
Fax: 618.451.4020
E-mail: memclean@uss.com
Attention: Mr. Michael McLean

RECEIVED
JUN 30 2010
Environmental Protection Agency
Bureau of Air
State of Illinois

ARI Project No. 436-203
ARI Proposal No. 41809 Revision 1
US Steel Purchase Order No. 00869539
Test Dates: April 6 and 7, 2010

ARI Environmental, Inc.
951 Old Rand Road, Unit 106
Wauconda, Illinois 60084
Phone: 847.487.1580 Ext. 109
Fax: 847.487.1587
E-mail: jbovee@arienv.com
Jerry Bovee
Senior Project Manager
Source Testing Division

R009121

TABLE 1-1. COGEN BOILER STACK SUMMARY OF TEST RESULTS

RUN NO. :	1	2	3		Emission
TEST DATE :	4/6/10	4/7/10	4/7/10	Average	Limit
Filterable Particulate Matter					
Concentration, gr/dscf	0.00161	0.00201	0.00189	0.00184	
Emission Rate, lb/MMBtu	0.0042	0.0053	0.0050	0.0048	0.03
Total Particulate Matter					
Concentration, gr/dscf	0.00658	0.00409	0.00473	0.00513	
Emission Rate, lb/MMBtu	0.0172	0.0097	0.0166	0.0145	0.101
Sulfur Dioxide					
Concentration, ppmv db	26.8	27.8	26.8	27.1	
Emission Rate, lb/MMBtu	0.081	0.085	0.082	0.083	0.20
Nitrogen Oxides					
Concentration, ppmv db	2.5	3.0	2.6	2.7	
Emission Rate, lb/MMBtu	0.005	0.007	0.006	0.006	0.05
Carbon Monoxide					
Concentration, ppmv db @ 50% excess air	<0.8	<0.8	<0.8	<0.8	200
Emission Rate, lb/MMBtu	<0.0013	<0.0013	<0.0013	<0.0013	0.15
Non-Methane VOM, as propane (C_3H_8)					
Concentration, ppmv db	0.8	<0.3	<0.3	<0.5	
Emission Rate, lb/MMBtu	0.0016	<0.0007	<0.0007	<0.0010	
Metals, Emission Rate lb/MMBtu*					
Antimony (Sb)	<2.694E-06	3.461E-06	2.855E-06	<3.003E-06	6.600E-04
Arsenic (As)	<2.694E-06	<2.769E-06	<2.767E-06	<2.743E-06	6.600E-04
Barium (Ba)	5.479E-06	3.022E-06	2.283E-06	3.595E-06	6.600E-04
Beryllium (Be)	<4.491E-07	<4.614E-07	<4.611E-07	<4.572E-07	6.600E-04
Cadmium (Cd)	<8.981E-07	<9.228E-07	<9.223E-07	<9.144E-07	6.600E-04
Chromium (Cr)	2.048E-06	1.306E-06	1.245E-06	1.533E-06	6.600E-04
Cobalt (Co)	<8.981E-07	4.711E-06	4.750E-07	<2.028E-06	6.600E-04
Copper (Cu)	1.891E-06	1.693E-06	1.388E-06	1.657E-06	6.600E-04
Lead (Pb)	2.272E-06	3.484E-06	2.882E-06	2.879E-06	6.600E-04
Manganese (Mn)	7.028E-06	6.008E-06	4.814E-06	5.950E-06	6.600E-04
Mercury (Hg)	1.662E-07	1.615E-07	9.269E-08	1.401E-07	6.600E-04
Nickel (Ni)	1.994E-06	1.680E-06	1.955E-06	1.876E-06	6.600E-04
Phosphorus (P)	3.208E-04	2.964E-04	3.059E-04	3.077E-04	6.600E-04
Selenium (Se)	5.025E-06	4.282E-06	6.553E-06	5.287E-06	6.600E-04
Silver (Ag)	<1.796E-06	<1.846E-06	<1.845E-06	<1.829E-06	6.600E-04
Thallium (Tl)	<5.389E-06	<5.537E-06	<5.534E-06	<5.487E-06	6.600E-04
Zinc (Zn)	2.046E-05	1.568E-05	4.330E-06	1.349E-05	6.600E-04
Total Metal HAPS**	3.672E-04	3.419E-04	3.348E-04	3.480E-04	5.300E-03

* Less than (<) values represent parameters that were non-detected (ND) and are reported at the Practical Quantifiable Limit (PQL).

**Total Metal HAPS values do not include parameters reported as ND.

TABLE 1-2. COGEN BFG INLET SUMMARY OF TEST RESULTS

RUN NO. :	1	2	3		
TEST DATE :	4/6/10	4/7/10	4/7/10	Average	Emission Limit
Filterable Particulate Matter					
Concentration, gr/dscf	0.00082	0.00058	0.00098	0.00079	0.01
Emission Rate, lb/MMBtu	0.00192	0.00132	0.00222	0.00182	
BFG Sulfur Content					
Concentration, ppmv db	11.80	12.40	11.90	12.03	
Emission Rate, lb/MMBtu	0.016	0.016	0.016	0.016	

TABLE 1-3. BFG PRETREATMENT SYSTEM SUMMARY OF TEST RESULTS

RUN NO. :	PT-MM-1		PT-MM-2	
TEST DATE :	4/6/10 Dust Sample Metal Concentration µg/g	4/6/10 Analytical PQL µg/g	4/7/10 Dust Sample Metal Concentration µg/g	4/7/10 Analytical PQL µg/g
Metals				
Antimony (Sb)	ND	12	ND	12
Arsenic (As)	ND	12	ND	12
Barium (Ba)	34.2	2	43.0	2
Beryllium (Be)	ND	2	ND	2
Cadmium (Cd)	ND	4	ND	4
Chromium (Cr)	257	2	298	2
Cobalt (Co)	ND	4	5.49	4
Copper (Cu)	22.6	2	14.8	2
Lead (Pb)	38.5	9	65.9	9
Manganese (Mn)	4,343	44	3,642	43
Mercury (Hg)	0.0072	0.005	0.0074	0.005
Nickel (Ni)	7.33	7	8.51	6
Phosphorus (P)	393	10	404	10
Selenium (Se)	ND	10	ND	10
Silver (Ag)	ND	9	ND	9
Thallium (Tl)	ND	49	ND	97
Zinc (Zn)	142	2	370	2

Reference Material

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Granite City Division
of National Steel Corporation
Attn: James Squires
20th and State Street
Granite City, Illinois 62040

Application No.: 98110038
I.D. No.: 119813AAI
Applicant's Designation: NGI98
Date Received: November 13, 1998
Subject: Natural Gas Usage Increase
Date Issued: December 9, 1998
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in natural gas usage for boiler house boilers (1-10), blast furnace boilers (11 and 12), and five (5) ladle drying preheaters as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

1. This permit is issued such that the net increases in emissions of PM, PM_{10}, SO_2, NO_x, and VOM resulting from increased natural gas combustion are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration. The accounting of the increases in emissions are shown in Tables I, II, and III of the attachments.

2. Total fuel usage for boiler house boilers (1-10), blast furnace boilers (11 and 12), and the five (5) ladle drying preheaters shall not exceed the following limits:

   a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year.

   b. Combined emissions of each pollutant from the units listed above shall not exceed the following limits:

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	5.1	3.43
PM-10	5.1	3.43
SO_2	0.6	0.40
NO_x	306	205.94
VOM	2.8	1.88
CO	40	26.92

3. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The

report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

4. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Natural gas usage ($mmft^3$/month and $mmft^3$/yr, each).

If you have any questions on this permit, please call Ernie Kierbach at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:ELK:jar

cc: Illinois EPA, FOS Region 3

TABLE 1

Change in Emissions

Baseline Emissions (Average of 1996 and 1997 Actuals)

Pollutant	Emissions (Tons/Yr)
PM	2.9
PM-10	2.9
SO_2	0.34
NO_x	174.11
VOM	1.59
CO	22.76

Potential Emissions from Natural Gas Usage of 1,346 $mmft^3/Yr$

Pollutant	Emissions (Tons/Yr)
PM	3.43
PM-10	3.43
SO_2	0.40
NO_x	205.94
VOM	1.88
CO	26.92

Net Emission Change

Pollutant	Emissions (Ton/Yr)	Significant Emissions Level (Tons/Yr)
PM	0.53	25
PM-10	0.53	15
SO_2	0.06	40
NO_x	31.83	40
VOM	0.29	40
CO	4.16	100

ELK:jar

TABLE II

1996 Actual Emissions from Natural Gas Usage of 1,131 $mmft^3/Yr$

Pollutant	Emissions (Tons/Yr)
PM	2.88
PM-10	2.88
SO_2	0.34
NO_x	173.04
VOM	1.58
CO	22.62

TABLE III

1997 Emissions from an Allowable Natural Gas Usage of 1,145 $mmft^3/Yr$

Pollutant	Emissions (Tons/Yr)
PM	2.92
PM-10	2.92
SO_2	0.34
NO_x	175.19
VOM	1.60
CO	22.9

ELK:jar

Reference Material - Select pages

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - REVISED

PERMITTEE

Granite City Division
of National Steel Corporation
Attn: Joseph S. Kocot
20th and State Street
Granite City, Illinois 62040

Application No.: 94120017
Applicant's Designation:
Subject: Sulfur Dioxide Emission Limits
Date Issued: November 19, 1996
Location: Granite City

I.D. No.: 119813AAI
Date Received: April 1, 1996
Expiration Date: February 22, 2000

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of sulfur dioxide emission units as described in the above-referenced application and as enumerated in the existing permits listed in Table 1. This permit is subject to standard conditions attached hereto and the following special conditions:

1. This federally enforceable state operating permit is issued to limit sulfur dioxide emissions to levels which ensure that compliance with the national ambient air quality standard for sulfur dioxide is maintained in the surrounding area.

LIMITATIONS ON EMISSIONS AND OPERATIONS

2. Emissions of sulfur dioxide (SO_2) from each unit operating group as a whole shall not exceed the following limits:

BFG Flares? Federally enforceable permit condition established under 40 CFR 52.21

Unit Operating Group	Sulfur Dioxide Emissions* (Lbs/3-Hours)	(Lbs/Day)	(Tons/Yr)
Slab Reheat Furnaces (1-3)	2,299	9,754	987
Slab Reheat Furnace 4		11,873	1,204
* Blast Furnace Stoves (A and B)		19,774	3,609
* Boilerhouse Boilers(1-10)		20,285	3,702
* Blast Furnace Boilers (11 and 12)		20,584	3,756
* Ladle Drying Preheaters	555	2,786	509
Blast Furnace Casthouse Baghouse		3,430	626
Iron Spout Baghouse		170	31

* Refer to special note of the Compliance Determinations Section of this permit.

3. Fuel oil shall not be fired in the Blast Furnace Stoves and Ladle Drying Preheaters.

13a. Total SO_2 emissions from an unit operating group for determination of compliance with the SO_2 limits of this permit shall be the sum of the emissions resulting from the use of COG and fuel oil at the unit operating group, i.e.:

Lbs SO_2 per unit operating group = SO_2 emissions from fuel oil usage + SO_2 emissions from COG usage

Special Note: The SO_2 emissions which would result from the use of blast furnace gas and natural gas in the unit operating groups has been accounted for in the SO_2 limits of this permit. This was accomplished by lowering the permitted SO_2 from the SO_2 levels used for air quality modeling by an amount equal to the SO_2 which would have been emitted should the unit operating groups use blast furnace gas or natural gas continuously. The SO_2 emissions from blast furnace gas and natural gas were calculated using standard emission factors as found in AIRS Facility Subsystem, Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants, EPA Document Number EPA 450/4-90-003, and Compilation of Air Pollution Emission Factors, Vol. 1, Stationary Point and Other Sources, AP-42.

b. The SO_2 emissions attributable to <u>fuel oil usage</u> shall be calculated using the recorded parameters required by this permit and the following equation:

Lbs SO_2/period = gallons of oil burned per period x sulfur content in weight percent of the fuel oil used x density of the fuel oil used in pounds per gallon x 2.

Note that emissions attributable to fuel oil used in each tank must be calculated individually using the most recent recorded parameters of the oil in that tank).

c. The SO_2 emissions attributable to <u>COG usage</u> shall be calculated using the recorded parameters required by this permit and the following equation:

Lbs SO_2/period = thousand standard cubic feet of COG burned per period x average H_2S content of the COG in grains per standard cubic foot for the period x 0.269.

14. Stack test measurement shall be the primary method of determining compliance of the Blast Furnace Casthouse and Iron Spout Baghouse with the lbs/day limits in this permit.

The secondary means of determining compliance shall be the following emission calculation equations:

United States
Environmental Protection
Agency

Air Pollution Training Institute (APTI)
MD 17
Environmental Research Center
Research Triangle Park, NC 27711

January 2000

Air

Control of Gaseous Emissions

Student Manual

APTI Course 415
Third Edition

Author

John R. Richards, Ph.D., P.E.
Air Control Techniques, P.C.

Developed by

ICES Ltd.
EPA Contract No. 68D99022

Problem 9-2

A boiler is converting from a coal supply having a sulfur content of 2.0% by weight and a heating value of 13,500 Btus per pound to a low sulfur coal having a sulfur content of 1.0% and a heating value of 8,500 Btu/pound. Assuming 94% of the fuel sulfur reacts according to Reaction 9-1, what is the percent reduction in sulfur dioxide emissions due to this fuel conversion?

Solution:

Step 1. Calculate the boiler sulfur dioxide emissions for the high sulfur fuel.

As indicated in Problem 9-1, two pounds of sulfur dioxide form for every pound of sulfur escaping the combustion chamber. Choose a boiler firing rate of 100 MM Btu/hr.

$$SO_2\,(\text{lb/hour}) = \left(\frac{2\ \text{lb}_m\ S}{100\ \text{lb}_m\ \text{coal}}\right)\left(\frac{0.94\ \text{lb S converted}}{\text{lb S total}}\right)\left(\frac{2\ \text{lb}_m\ SO_2}{\text{lb}_m\ S}\right)\left(\frac{\text{lb}_m\ \text{coal}}{13{,}500\ \text{Btu}}\right)100 \times 10^6\ \text{Btu/hr}$$

$$SO_2\,(\text{lb/hour}) = 279\ \text{lb}_m\ SO_2/\text{hour}$$

Step 2. Calculate the boiler sulfur dioxide emissions form the low sulfur fuel.

$$SO_2\,(\text{lb/hour}) = \left(\frac{1\ \text{lb}_m\ S}{100\ \text{lb}_m\ \text{coal}}\right)\left(\frac{0.94\ \text{lb S converted}}{\text{lb S total}}\right)\left(\frac{2\ \text{lb}_m\ SO_2}{\text{lb}_m\ S}\right)\left(\frac{\text{lb}_m\ \text{coal}}{8{,}500\ \text{Btu}}\right)100 \times 10^6\ \text{Btu/hr}$$

$$SO_2\,(\text{lb/hour}) = 221\ \text{lb}\,SO_2/\text{hour}$$

Step 3. Calculate the percent reduction

$$\text{Reduction} = \left(\frac{279 - 221}{279}\right)100\% = 20.8\%$$

While this example has extreme differences in the fuel quality, it does illustrate the importance of evaluating the fuel's heating value along with the sulfur content. The calculated sulfur dioxide reduction is considerably lower than the 50% reduction that would be estimated based only on the fuel sulfur content.

While the conversion to low sulfur fuels has often been a successful control option, it is not universally applicable to all coal-fired boilers. Each boiler system is designed for a narrow range of coal characteristics. The available low sulfur coals can have properties, such as a heat content, volatile content, ash fusion temperature, or grindability, that are not appropriate for the specific unit.

In addition to completely changing the type of fuel being burned, it is sometimes possible to substitute a portion of the heating demand supplied by a high sulfur fuel with a fuel such as natural gas or No. 2 oil, which have low fuel sulfur levels.

R009131
Reference Material

Technology Transfer Network
Clean Air Technology Center - RACT/BACT/LAER Clearinghouse

Pollutant Information

Click on the Process Information button to see more information about the process associated with this pollutant.
Or click on the Process List button to return to the list of processes.

RBLC Home | New Search | Search Results | Facility Information | Process List
Process Information | Pollutant Information

Help

FINAL

RBLC ID: MI-0377
Corporate/Company: SEVERSTAL NORTH AMERICA, INC.
Facility Name: SEVERSTAL NORTH AMERICA, INC.
Process: BLAST FURNACE STOVES

Pollutant: Sulfur Dioxide (SO2) **CAS Number:** 7446-09-5
Pollution Prevention/Add-on Control Equipment/Both/No Controls Feasible: N
P2/Add-on Description: NO CONTROLS FEASIBLE. COMPLIANCE VERIFICATION VIA CEMS.

Test Method: Unspecified EPA/OAR Methods | All Other Methods

Estimated % Efficiency:
Compliance Verified: UNKNOWN
EMISSION LIMITS:
Basis: BACT-PSD
Other Applicable Requirements: N/A
Other Factors Influence Decision: No
Emission Limit 1: 14.3700 LB/MMMSCF WHEN 8 FURNACE OPERATING
Emission Limit 2: 16.6200 LB/MMSCF WHEN 8 FURNACE NOT OPERATING
Standardized:

COST DATA: **Verified by Agency?** No
Year Used in Cost Estimates:
Cost Effectiveness:
Incremental Cost Effectiveness:

Pollutant Notes: EMISSION LIMIT 3 = 58.3 LB/HR WHEN 8 FURNACE IS OPERATING EMISSION LIMIT

R009132

4 = 67.3 LB/HR WHEN B FURNACE IS NOT OPERATING SO2 LIMITS BASED ON 24-HR AVERAGE. COMPLIANCE DETERMINED VIA CEMS.

Sulfur Information

Much of the sulfur contained in the gas delivered by PG&E consists of compounds that naturally occur in the gas, but PG&E also adds sulfur compounds to odorize the gas. The gas is odorized as a safety measure so that leaks can be detected by consumers.

Common sulfur compounds that may be found in the gas supply are Tetrahydrothiophene (THT), Tertiary Butyl Mercaptan (TBM), Dimethyl Sulfide (DMS), and Hydrogen Sulfide (H2S). A more comprehensive listing of typical sulfur compounds that may be found in the PG&E gas supply is shown at the end of this page. These compounds are harmless at low levels but can cause customer complaints due to excessive gas odor or in the case of Hydrogen Sulfide become dangerous at very high levels.

PG&E continuously monitors the gas stream for specific sulfur compounds at several points on its system as part of its program to ensure that the gas is properly odorized and that sulfur levels are within established limits. The monitoring equipment works well for the intended purpose but it does not provide comprehensive data on all potential sulfur compounds flowing in the gas supply. To supplement the continuous monitoring equipment PG&E has started a program to collect and analyze samples from representative parts of the system to provide an estimate of the total sulfur contained in the PG&E gas supply expressed as parts per million by volume or grains per 100 Standard Cubic Feet.

PG&E's Gas Rule 21, Section C contains specifications on the quality of the gas received into the system and these specifications include limits for sulfur compounds as well as for other constituents contained in the natural gas. Gas Rule 21 can be found in the PGE.com Web tariff book and the sulfur limits are summarized below.

Rule 21, Section C

Section C of Gas Rule 21 provides quality specifications for gas delivered into the PG&E pipeline system from California gas wells and generally governs the gas quality received from interconnecting pipelines. However, gas quality specifications, contained in the interconnection agreement may supersede the Gas Rule 21 C specifications.

- **Total Sulfur**: The gas shall contain no more than one grain (17 ppm) of total sulfur per one hundred standard cubic feet.
- **Mercaptan Sulfur**: The gas shall contain no more than 0.5 grain (8 ppm) of mercaptan sulfur per one hundred standard cubic feet.
- **Hydrogen Sulfide**: The gas shall contain no more than 0.25 grain (4 ppm) of hydrogen sulfide per one hundred standard cubic feet.

Pipeline Quality Gas

Many air quality compliance reporting requirements can be met by certifying that the fuel used in the process was "pipeline quality natural gas." The EPA criteria for pipeline quality natural gas from [40CFR72.2] is as follows:

"Pipeline natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by a supplier through a pipeline. Pipeline natural gas contains 0.5 grains or less of total sulfur per 100 standard cubic feet. Additionally, pipeline natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot."

One criterion is that the total sulfur be less than 0.5 gr/100 scf which is a lower amount than in PG&E's tariff. To help customers understand PG&E gas quality in relation to their reporting requirements, the total sulfur measured in the gas stream as total sulfur is expressed as grains per 100 standard cubic feet (gr/100 scf). PG&E's gas supply typically qualifies as "pipeline quality natural gas" as shown in the Gas System Survey Results table below.

Gas System Sulfur Survey Results

PG&E has a program of periodically surveying representative locations on the system to determine the sulfur containing compound concentrations in the gas stream. PG&E tests for sulfur using ASTM D 5504 "Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence." Our detection limit is approximately 10 PPBv for each compound. PG&E odorizes our gas with a 50/50 blend of Tetrahydothiophene (THT) and Tertiary Butyl Mercaptan (TBM) and they are typically present at approximately 1 PPMv each in the natural gas on our system. The values shown in the table below provide a representative sample of the gas flowing on the PG&E system.

Date	Total Sulfur Average all sites		Total Sulfur Maximum	
	gr/100 scf	PPMv	gr/100 scf	PPMv
Fourth Quarter 2009	0.164	2.77	0.595	10.03
Third Quarter 2009	0.186	3.14	0.713	12.01
Second Quarter 2009	0.166	2.79	0.326	5.50
First Quarter 2009	Unavailable		Unavailable	
Fourth Quarter 2008	0.182	3.06	0.608	10.25
Third Quarter 2008	0.231	3.89	0.442	7.45
Second Quarter 2008	0.224	4.12	0.463	7.80
First Quarter 2008	0.227	3.82	0.475	8.01
Fourth Quarter 2007	0.225	3.79	0.462	7.79
Third Quarter 2007	0.204	3.44	0.421	7.10
Second Quarter 2007	0.197	3.31	0.326	5.50
First Quarter 2007	0.226	3.81	0.664	11.20
Fourth Quarter 2006	0.223	3.86	0.522	8.80
Third Quarter 2006	0.241	4.05	0.466	7.88
Second Quarter 2006	0.160	2.70	0.408	6.90
First Quarter 2006	0.145	2.45	0.318	5.37

PMv is expressed as parts per million by volume.

ıe total readings include 0.400 PPMv of sulfur to account for compounds not measured by the existing equipment. This amount ıs been determined by supplemental testing at selected locations on the gas system.

isclaimer

ıe data points shown above are from representative samples of sulfur content only. The data points are provided solely for formational purposes, and not for billing or odorant level monitoring purposes. PG&E makes no claim or representation that the ıta points provided are accurate. Data may be subject to adjustments and corrections.

aboratory Services

3&E's in-house laboratory, located in San Ramon, can collect a sample and perform sulfur analyses of your gas for a fee. Please ntact J Henderson via e-mail or by phone at (925) 866-5491 to discuss this service in more detail. They may also provide outside ɔoratory references.

ypical Sulfur Compounds Contained in Natural Gas

ompound	Molecular Weight (MW) Grams per mole
etrahydrothiophene (THT)	88.00
ertiary Butyl Mercaptan (TBM)	90.00
imethyl Sulfide (DMS)	62.00
lydrogen Sulfide (H2S)	34.00
lethyl Mercaptan (MTM)	48.00
thyl Mercaptan (ETM)	62.00
sopropyl Mercaptan (IPM)	76.00
lormal Propyl Mercaptan	76.00
ulfur	32.00

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R009135

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Reference Material: underlying const. permit for increase in NG usage - incorporated into Prod. Inc. permit.

R09136

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/782-2113
P. O. Box 19506, Springfield, IL 62794-9506

CONSTRUCTION PERMIT

PERMITTEE

Granite City Division
of National Steel Corporation
Attn: James Squires
20th and State Street
Granite City, Illinois 62040

Application No.: 98110038
Applicant's Designation: NGI98
Subject: Natural Gas Usage Increase
Date Issued: December 9, 1998
Location: Southeastern Granite City

I.D. No.: 119813AAI
Date Received: November 13, 1998

Permit is hereby granted to the above-designated Permittee for an increase in natural gas usage for boiler house boilers (1-10), blast furnace boilers (11 and 12), and five (5) ladle drying preheaters as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

1. This permit is issued such that the net increases in emissions of PM, PM_{10}, SO_2, NO_x, and VOM resulting from increased natural gas combustion are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration. The accounting of the increases in emissions are shown in Tables I, II, and III of the attachments.

2. Total fuel usage for boiler house boilers (1-10), blast furnace boilers (11 and 12), and the five (5) ladle drying preheaters shall not exceed the following limits:

   a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year.

   b. Combined emissions of each pollutant from the units listed above shall not exceed the following limits:

Pollutant	Emission Factor (lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	5.1	3.43
PM-10	5.1	3.43
SO_2	0.6	0.40
NO_x	306	205.94
VOM	2.8	1.88
CO	40	26.92

3. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The

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report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

4. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Natural gas usage (mmft^3/month and mmft^3/yr, each).

If you have any questions on this permit, please call Ernie Kierbach at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:ELK:jar

cc: Illinois EPA, FOS Region 3

COPY
Original Signed by
Donald E. Sutton, P.E.

TABLE I

Change in Emissions

Baseline Emissions (Average of 1996 and 1997 Actuals)

Pollutant	Emissions (Tons/Yr)
PM	2.9
PM-10	2.9
SO_2	0.34
NO_x	174.11
VOM	1.59
CO	22.76

Potential Emissions from Natural Gas Usage of 1,346 mmft^3/Yr

Pollutant	Emissions (Tons/Yr)
PM	3.43
PM-10	3.43
SO_2	0.40
NO_x	205.94
VOM	1.88
CO	26.92

Net Emission Change

Pollutant	Emissions (Ton/Yr)	Significant Emissions Level (Tons/Yr)
PM	0.53	25
PM-10	0.53	15
SO_2	0.06	40
NO_x	31.83	40
VOM	0.29	40
CO	4.16	100

ELK:jar

TABLE II

1996 Actual Emissions from Natural Gas Usage of 1,131 mmft^3/Yr

Pollutant	Emissions (Tons/Yr)
PM	2.89
PM-10	2.88
SO_2	0.34
NO_x	173.04
VOM	1.56
CO	22.62

TABLE III

1997 Emissions from an Allowable Natural Gas Usage of 1,145 mmft^3/Yr

Pollutant	Emissions (Tons/Yr)
PM	2.92
PM-10	2.92
SO_2	0.34
NO_x	175.19
VOM	1.60
CO	22.9

BLK:jar

Reference Material: excerpt from Jan 19, 1996 Application

TABLE 3-1
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - CO

Projected Emissions Based On: Blast Furnace @ 8,671 NTPD
BOF @ 9,808 NTPD

LINE #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy
1	0004	01	"A" Blast Furnace Stoves - BFG	13.7	lb/MMcf	22,774	MMcf	156.00	included in line 17	-	-	-
2	0009	01	"B" Blast Furnace Stoves - BFG	13.7	lb/MMcf	22,203	MMcf	152.09	included in line 17	-	-	-
3	0008	01	Blast Furnace Gas Flare - BFG	13.7	lb/MMcf	26,132	MMcf	179.00	included in line 17	-	-	-
4	0041	01	Boiler House 1 (Blrs 1-10) - BFG	13.7	lb/MMcf	37,501	MMcf	256.88	included in line 17	-	-	-
5	0041	91	Boiler House 1 (Blrs 1-10) - NG	40	lb/MMcf	351	MMcf	7.22	included in line 16	-	-	-
6	0044	01	Boiler #11 - BFG	13.7	lb/MMcf	5,323	MMcf	36.46	included in line 17	-	-	-
7	0044	91	Boiler #11 - NG	40	lb/MMcf	226	MMcf	4.92	included in line 16	-	-	-
8	0044	92	Boiler #11 - Fuel Oil	5.0	lb/Mgal	15.00	Mgal	0.04	included in line 18	-	-	-
9	0048	01	Boiler #12 - BFG	13.7	lb/MMcf	7,106	MMcf	48.68	included in line 17	-	-	-
10	0048	91	Boiler #12 - NG	40	lb/MMcf	218	MMcf	4.36	included in line 16	-	-	-
11	0048	92	Boiler #12 - Fuel Oil	5.0	lb/Mgal	1.00	Mgal	0.00	included in line 18	-	-	-
12	0033	01	BOF 2 Vessels	8.993	lb/ton proc.	2,413,406	ton proc.	10,851.89	3,580,000	ton proc.	16,097.47	5,245.58
13	0038	01	BOF Preheaters/Dryers - NG	40	lb/MMcf	283	MMcf	5.68	included in line 16	-	-	-
14	0071 & 0119	01	Continuous Casters #1 & #2 - NG	40	lb/MMcf	57	MMcf	1.14	included in line 16	-	-	-
15			Natural Gas	40	lb/MMcf	1,145	MMcf	inc. above	1,145	MMcf	22.90	-
16			Blast Furnace Gas	13.7	lb/MMcf	121,039	MMcf	inc. above	185,030	MMcf	1,267.46	-
17			Fuel Oil	5.0	lb/Mgal	16	Mgal	inc. above	365	Mgal	0.91	-
	TOTALS:							11,703.34			17,388.74	5,684.80
			Contemporaneous Changes									(11.51)
			Net Change									*5,673.29*

96-97 Baseline = 1138
original Baseline = 1145
permit Limit = 1346

1346 − 1145 = 201

1346 − 1138 = 208

208 × 8.4 = 8.74
208 × 40 = 416
4.58 ≈ 4.6

201 × 8.4 = 8.44
201 × 40 = 4.02
4.42 ≈ 4.4

5684.80
4.60
5689.4

R009140

Reference Material: excerpt from Jan 19, 1996 Application.

TABLE 3-3
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - SO2

Projected Emissions Based On: Blast Furnace @ 8,671NTPD
BOF @ 9,809 NTPD

LINE #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy	COMMENTS
1	0004	01	"A" Blast Furnace Stoves - BFG	6.65	lb/MMcf	22,774	MMcf	75.72	Included in line 19	-	-	-	-
2	0009	01	"B" Blast Furnace Stoves - BFG	6.65	lb/MMcf	22,203	MMcf	73.82	Included in line 19	-	-	-	-
3	0008	01	Blast Furnace Gas Flare - BFG	6.65	lb/MMcf	26,132	MMcf	86.88	Included in line 19	-	-	-	-
4	0041	01	Boiler House 1 (Bls 1-10) - BFG	6.65	lb/MMcf	37,501	MMcf	124.69	Included in line 19	-	-	-	-
5	0041	91	Boiler House 1 (Bls 1-10) - NG	0.6	lb/MMcf	381	MMcf	0.11	Included in line 18	-	-	-	-
6	0044	01	Boiler #11 - BFG	6.65	lb/MMcf	5,323	MMcf	17.70	Included in line 19	-	-	-	-
7	0044	91	Boiler #11 - NG	0.6	lb/MMcf	226	MMcf	0.07	Included in line 18	-	-	-	-
8	0044	92	Boiler #11 - Fuel Oil	141.3	lb/Mgal	15.00	Mgal	1.06	Included in line 20	-	-	-	-
9	0048	01	Boiler #12 - BFG	6.65	lb/MMcf	7,106	MMcf	23.63	Included in line 19	-	-	-	-
10	0048	91	Boiler #12 - NG	0.6	lb/MMcf	218	MMcf	0.07	Included in line 18	-	-	-	-
11	0048	92	Boiler #12 - Fuel Oil	141.3	lb/Mgal	1.00	Mgal	0.07	Included in line 20	-	-	-	-
12	0038	01	BOF Preheaters/Dryers - NG	0.6	lb/MMcf	283	MMcf	0.08	Included in line 18	-	-	-	-
13	0007 & 0012	01	"A & B" Blast Furnace - Casthouse	0.2006	lb/ton proc.	2,059,557	tons proc.	206.57	3,165,000	tons proc.	422.00	215.43	Est. Annual Max
14	0005 & 0010	01	"A & B" Blast Furnace - Uncap. roof	0.0104	lb/ton proc.	2,059,557	tons proc.	10.71	3,165,000	tons proc.	21.94	11.23	Est. Annual Max
15	.....	--	Iron Spout Baghouse	0.0073	lb/ton proc.	2,059,557	tons proc.	7.52	3,165,000	tons proc.	13.89	6.37	Est. Annual Max
16	113	1	Blast Furnace Slag Pits	0.0100	lb/ton	2,059,557	tons proc.	10.30	3,165,000	tons proc.	15.83	5.53	
17	0071 & 0119	01	Continuous Casters #1 & #2 - NG	0.6	lb/MMcf	57	MMcf	0.02	Included in line 18	-	-	-	
18			Natural Gas	0.6	lb/MMcf	1,145	MMcf	-	1,145	MMcf	0.34	0.00	
19			Blast Furnace Gas	6.65	lb/MMcf	121,039	MMcf	-	185,030	MMcf	615.22	(212.77)	
20			Fuel Oil	141.3	lb/Mgal	18	Mgal	-	365	Mgal	25.79	24.56	
	TOTALS:							639.03			1,115.01	475.98	
												(0.13)	
	Contemporaneous Changes											475.85	
	Net Change												

185030
- 121039
63,991 × 16 lb/mmcf ÷ 2000 lb/ton = 511.93 tpy increase

new No. is 511.93

775.
775.02

RDD9141

Reference Material: exerpt from Jan 19 1996 Application

TABLE 3-6
GRANITE CITY DIVISION of NATIONAL STEEL
NETTING ANALYSIS SUMMARY - VOM

Projected Emissions Based On: Blast Furnace @ 9,671 NTPD
BOF @ 9,803 NTPD

LINE #	POINT	MODE	SOURCE DESCRIPTION	EMISSION FACTOR	UNITS	BASE YEAR THRUPUT	UNITS	ACTUAL EMISSION tpy	PROJECTED THRUPUT	UNITS	PROJECTED ACTUAL EMISSIONS tpy	POTENTIAL EMISSIONS INCREASE tpy
1	0004	01	"A" Blast Furnace Stoves - BFG	0.0	lb/MMcf	22,774	MMcf	0.00	included in line 18	-	-	-
2	0009	01	"B" Blast Furnace Stoves - BFG	0.0	lb/MMcf	22,203	MMcf	0.00	included in line 18	-	-	-
3	0008	01	Blast Furnace Gas Flare - BFG	0.0	lb/MMcf	28,132	MMcf	0.00	included in line 18	-	-	-
4	0041	01	Boiler House 1 (Blrs 1-10) - BFG	0.0	lb/MMcf	37,501	MMcf	0.00	included in line 18	-	-	-
5	0041	91	Boiler House 1 (Blrs 1-10) - NG	2.8	lb/MMcf	361	MMcf	0.51	included in line 17	-	-	-
6	0044	01	Boiler #11 - BFG	0.0	lb/MMcf	5,323	MMcf	0.00	included in line 18	-	-	-
7	0044	91	Boiler #11 - NG	1.4	lb/MMcf	226	MMcf	0.16	included in line 17	-	-	-
8	0044	92	Boiler #11 - Fuel Oil	0.28	lb/Mgal	15.00	Mgal	0.00	included in line 18	-	-	-
9	0048	01	Boiler #12 - BFG	0.0	lb/MMcf	7,108	MMcf	0.00	included in line 18	-	-	-
10	0048	91	Boiler #12 - NG	1.4	lb/MMcf	218	MMcf	0.15	included in line 17	-	-	-
11	0048	92	Boiler #12 - Fuel Oil	0.28	lb/Mgal	1.00	Mgal	0.00	included in line 18	-	-	-
12	0033	01	BOF Preheaters/Dryers - NG	2.8	lb/MMcf	283	MMcf	0.40	included in line 17	-	-	-
13	0007 & 0012	01	"A & B" Blast Furnace - Casthouse	0.0848	lb/ton proc.	2,059,557	tons proc.	97.40	3,165,000	tons proc.	149.68	-
14	0005 & 0010	01	"A & B" Blast Furnace - Uncap. roof	0.0047	lb/ton proc.	2,059,557	tons proc.	4.83	3,165,000	tons proc.	7.43	-
15	0033	01	2 BOF Vessels	0.0060	lb/ton proc.	2,413,408	tons proc.	7.24	3,580,000	tons proc.	10.74	-
16	0035	01	Transfer Pits	0.0010	lb/ton proc.	2,059,557	tons proc.	1.03	3,165,000	tons proc.	1.58	-
17	0071 & 0119	01	Continuous Casters #1 & #2 - NG	2.8	lb/MMcf	57	MMcf	0.08	included in line 17	-	-	-
18			Natural Gas	2.8	lb/MMcf	-	MMcf	-	1,145	MMcf	1.60	-
19			Blast Furnace Gas	0.0	lb/MMcf	-	MMcf	-	185,030	MMcf	0.00	-
20			Fuel Oil	0.28	lb/Mgal	-	Mgal	-	365	lb/Mgal	0.05	-
	TOTALS:							111.80			171.09	59.28
			Contemporaneous Changes									(31.23)
			Net Change									*28.05*

96-97 Baseline = 1138
original Baseline = 1145
permit limit = 1346

1346 − 1145 = 201

1346 − 1138 = 208

208 × 5.5 = 0.57

208 × 2.8 = 0.39 / 0.28

201 × 5.5 = 0.55

201 × 2.8 = 0.28 / 0.27

59.28 / 0.28 ≈ 59.6

R0009142

Reference Material: R009143

"New" factors for VOM & CO emissions

1.4 Natural Gas Combustion

1.4.1 General[1,2]

Natural gas is one of the major combustion fuels used throughout the country. It is mainly used to generate industrial and utility electric power, produce industrial process steam and heat, and heat residential and commercial space. Natural gas consists of a high percentage of methane (generally above 85 percent) and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium). The average gross heating value of natural gas is approximately 1,020 British thermal units per standard cubic foot (Btu/scf), usually varying from 950 to 1,050 Btu/scf.

1.4.2 Firing Practices[3-5]

There are three major types of boilers used for natural gas combustion in commercial, industrial, and utility applications: watertube, firetube, and cast iron. Watertube boilers are designed to pass water through the inside of heat transfer tubes while the outside of the tubes is heated by direct contact with the hot combustion gases and through radiant heat transfer. The watertube design is the most common in utility and large industrial boilers. Watertube boilers are used for a variety of applications, ranging from providing large amounts of process steam, to providing hot water or steam for space heating, to generating high-temperature, high-pressure steam for producing electricity. Furthermore, watertube boilers can be distinguished either as field erected units or packaged units.

Field erected boilers are boilers that are constructed on site and comprise the larger sized watertube boilers. Generally, boilers with heat input levels greater than 100 MMBtu/hr, are field erected. Field erected units usually have multiple burners and, given the customized nature of their construction, also have greater operational flexibility and NO_x control options. Field erected units can also be further categorized as wall-fired or tangential-fired. Wall-fired units are characterized by multiple individual burners located on a single wall or on opposing walls of the furnace while tangential units have several rows of air and fuel nozzles located in each of the four corners of the boiler.

Package units are constructed off-site and shipped to the location where they are needed. While the heat input levels of packaged units may range up to 250 MMBtu/hr, the physical size of these units are constrained by shipping considerations and generally have heat input levels less than 100 MMBtu/hr. Packaged units are always wall-fired units with one or more individual burners. Given the size limitations imposed on packaged boilers, they have limited operational flexibility and cannot feasibly incorporate some NO_x control options.

Firetube boilers are designed such that the hot combustion gases flow through tubes, which heat the water circulating outside of the tubes. These boilers are used primarily for space heating systems, industrial process steam, and portable power boilers. Firetube boilers are almost exclusively packaged units. The two major types of firetube units are Scotch Marine boilers and the older firebox boilers. In cast iron boilers, as in firetube boilers, the hot gases are contained inside the tubes and the water being heated circulates outside the tubes. However, the units are constructed of cast iron rather than steel. Virtually all cast iron boilers are constructed as package boilers. These boilers are used to produce either low-pressure steam or hot water, and are most commonly used in small commercial applications.

Natural gas is also combusted in residential boilers and furnaces. Residential boilers and furnaces generally resemble firetube boilers with flue gas traveling through several channels or tubes with water or air circulated outside the channels or tubes.

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION[a]

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO_x[b]		CO	
	Emission Factor (lb/10^6 scf)	Emission Factor Rating	Emission Factor (lb/10^6 scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS)[c]	280	A	84	B
Uncontrolled (Post-NSPS)[c]	190	A	84	B
Controlled - Low NO_x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO_x burners	50	D	84	B
Controlled - Low NO_x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10^6 scf to kg/10^6 m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10^6 scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

[c] NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

R009144

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION[a]

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_X burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6 scf] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

cc: Romaine

R009146

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3241
fax: 618 451 3707
email: skowen@uss.com

Sharon K. Owen
General Manager

* Permit File (original)

May 16, 2008

CERTIFIED MAIL NO. 7007 1490 0002 3533 9669
RETURN RECEIPT REQUESTED

Ms. Laurel Kroack
Bureau Chief
Bureau of Air
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, Illinois 62794-9276

IEPA, DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

RE: United States Steel Corporation – Granite City Works
Flare Minimization Plan

Dear Ms. Kroack:

As you are aware, earlier this year, United States Steel Corporation and Gateway Energy and Coke Company (GECC) entered into an agreement with the American Bottom Conservancy (ABC) and the Sierra Club regarding the GECC Heat Recovery Coke Plant and U. S. Steel Coke Conveyor project and permits.

Paragraph 8d of the Agreement obligates United States Steel to submit a Flare Minimization Plan for Granite City Works to the Illinois Environmental Protection Agency. Therefore, pursuant to provision, U. S. Steel is enclosing a Flare Minimization Plan.

Should you have questions regarding the enclosed document, please contact Larry Siebenberger at 618o-451-3391 or via email at lsiebenberger@uss.com.

Sincerely,

SLKOwen

Sharon K. Owen
General Manager

Enclosdure(s)

cc: American Bottom Conservancy
Sierra Club – Illinois Chapter
Director, Interdisciplinary Environmental Clinic
Delauna Pack – Gateway Energy & Coke Company, LLC
David W. Hacker – USS

American Bottom Conservancy
P. O. Box 4242
Fairview Heights, IL 62208
CERTIFIED MAIL NO. 7007 1490 0002 3533 9676

Sierra Club – Illinois Chapter
70 East Lake Street, Suite 1500
Chicago, IL 60601
CERTIFIED MAIL NO. 7007 1490 0002 3533 9683

Director, Interdisciplinary Environmental Clinic
Washington University School of Law
One Brookings Drive – Campus Box 1120
St. Louis, MO 63130
CERTIFIED MAIL NO. 7007 1490 0002 3533 9690

Gateway Energy & Coke Company, LLC
ATTN: Delauna Pack
SunCoke Energy, Inc.
Parkside Plaza
11400 Parkside Drive
Knoxville, Tennessee 37934
CERTIFIED MAIL NO. 7007 1490 0002 3533 9706

Energy Department Fuel Balancing
Flare Minimization Plan
Granite City Works
04/10/08

Purpose

The purpose of the Flare Minimization Plan is to minimize flaring of Blast Furnace Gas and Coke Oven Gas, which will reduce purchased Natural Gas.

Description of Flares

Blast Furnace Gas flare is caused by a lack of users. There is an Annular Orifice Plate meter measuring the amount of Blast Furnace Gas flared. There is always a small amount of Blast Furnace Gas bled into the flare stack. This is to prevent an explosion in the flare stack. The Blast Furnace Gas control valve allows for this volume of gas to pass by the valve.

Coke Oven Gas flare is caused by either a lack of users, or an inability of the Boosters to compress the gas for use. This is referred to as either high-pressure flare or low-pressure flare respectively. There is an Insertion Turbine meter measuring the amount of Coke Oven Gas flared. There is always a small amount of Coke Oven Gas bled into the flare stack. This is to prevent an explosion in the flare stack. There is a fixed limiting orifice plate that is used to control this amount of Coke Oven Gas bled into the stack.

Responsibilities

The Energy and Utility Department will be responsible for implementation of this plan. The Utility Dispatcher will continuously monitor and optimize the use of Coke Oven Gas and Blast Furnace Gas. This will require the Utility Dispatcher to work with the following areas: Hot Strip Operations, Utility Operations, Coke Oven Gas Booster Operations and BF Stove Operations. All communications regarding Blast Furnace Gas and Coke Oven Gas utilization will be coordinated through the Utility Dispatcher.
Area Maintenance for the Hot Strip and Blast Furnace will be responsible for maintaining the associated equipment and metering required to implement this plan.
Area Operations will be responsible for operating their respective areas to maximize the use of Blast Furnace Gas and Coke Oven Gas.

Plan

The Utility Dispatcher will:

- Work through the BF Utility Operations Foreman/Boiler House Operators to maximize the use of Blast Furnace Gas on the Boilers to reduce natural gas. If available, the Boilers may also use Coke Oven Gas to reduce Natural Gas use above minimum.
    - If Blast Furnace Gas is being flared and Natural Gas is above minimum, contact the BF Utility Operations Foreman/Boiler House Operators and request that they increase the use of Blast Furnace Gas to reduce Natural Gas use above minimum.

  - When the Hot Strip is operating, Blast Furnace Gas will be the primary fuel for the Boilers. Coke Oven Gas can be used as available, to displace Natural Gas above minimum requirements.
  - When the Hot Strip is down, Blast Furnace Gas will still be the primary fuel, but additional Coke Oven Gas will be available to displace Natural Gas above minimum requirements. Contact the BF Utility Operations Foreman/Boiler House Operators and advise them when additional Coke Oven Gas is available to reduce Natural Gas above minimum requirements.
- Work through the Hot Strip Heater/Foreman to maximize the use of Coke Oven Gas on the Hot Strip Slab Furnaces.
  - When the Hot Strip is operating, monitor the use of Coke Oven Gas on the slab furnaces to make sure that all zones capable are using Coke Oven Gas.
  - If the Hot Strip does not have Coke Oven Gas on all possible zones, contact the Hot Strip Heater/Foreman and request Coke Oven Gas be utilized on those zones.
- Work with the Booster Operator/Foreman to maximize the delivery of Coke Oven Gas from the Boosters.
  - If there is Coke Oven Gas flare and the Coke Oven Gas pressure is lower than normal operating pressure, contact the Booster Operator/Foreman and request that Coke Oven Gas boosters be placed online or the loading increased on the boosters.
  - If there is Coke Oven Gas flare and the Coke Oven gas pressure is greater than normal operating pressure, contact the users and request that additional Coke Oven Gas be utilized. Do not increase Coke Oven Gas use on the Boilers if it will result in additional Blast Furnace Gas being flared.

The Coke Oven Managers will:

- Conduct a root cause analysis for each use of an emergency flare.
  - Take appropriate actions based on the analysis to minimize potential for future occurrences.
  - Submit root cause analysis to the Environmental Quality Control Department.

R009150

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name U.S. STEEL GRANITE CITY Date Rec'd 3-27-07

Appl.# 95010001 Location GRANITE CITY Analyst _____

CASH EREWOLE, EXP. 1-9-09

LEGAL PRESS, EXP. 10-18-07 FOS FLAG _____ CROPA NSP/SHAP M&M _____ TOXICS

☐ CAAPP ☐ FESOP ☑ OPERATING PERMIT APP. ☐ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP

R

3-28-07 BAS
I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

SO2 NOx TSP VOM CO OTHER

POT _____

ACT _____

Is Project Subject to NSPS/NESHAP: ☐ Yes ☐ No

Is Project a Major Source or Major Modification: ☐ Yes ☐ No
- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☐ No
- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop: ☐ Yes ☐ No
- If Yes, Complete CROPA Section

☐ Project Emissions Recorded Date _____ Init. _____ ☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP Notif. Proj. Summary To/From: BOL _____ PWS _____ WPC _____ DLC _____ USEPA _____

CAAPP Tracking

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project

CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group	_____	Comment Period Completed	_____
Comment Period Initiated	_____	Comments/Hearing Records Reviewed	_____
Public Hearing Req./Not Req. If Req. Public Hearing Date	_____	Public Participation Completed	_____

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☐ Grant						

EPA - DIVISION OF RECORDS MANAGEMENT
RECEIVED
AUG 23 2013
REVIEWER JRM

Mail-Out ☐ District ☐ USEPA ☐ Health Depart _____ ☐ Enf ☐ Public Participation List

☐ Cook County ☐ Other _____

Date: _____ Init. _____ Date: _____ Init. _____

a copy of this letter has been emailed to Libby Cailey & Chris Pressnall BAS

IL 532 2274
APC 539 Feb-96

ORIGINAL

R009151

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

March 26, 2007

Mr. Ed Bakowski
Division of Air Pollution Control –Permitting Section
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Application for Renewal of Three Operating Permits at the United States Steel Corporation - Granite City Works, Granite City, Il (Facility ID No. 119813AAI)

Dear Mr. Bakowski:

United States Steel Corporation (U. S. Steel) is herein applying for renewal of three operating permits. The renewals are required because these permits were revised after submittal of the CAAPP application and the revised permits are set to expire in June 2007. The three permits requiring renewal are as follows:

1. Production Increase Permit (IEPA Permit No. 95010001) expiring June 25, 2007
2. No. 8 Galvanizing Line (IEPA Permit No. 950010005) expiring June 25, 2007
3. Pickle Line Fume Scrubbers Permit (IEPA Permit No. 00030107) expiring June 28, 2007.

The Granite City Works has already submitted a complete CAAPP application and is currently awaiting issuance of that permit. In the absence of the completed CAAPP permit, these operating permits do not fall under the permit shield and require permit renewals.

U. S. Steel does not wish to modify the above permits at this time and requests that the above permits be re-issued allowing operation until such time as the CAAPP permit is finalized for the facility.

If you have questions or require further information, please contact Robert Ribbing at (618) 451-4026.

Sincerely,

Larry Siebenberger
Manager – Environmental Control

jm

Enclosures

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

RECEIVED
MAR 29
IEPA/DAPC/SPFLD

R009152

Michael A. Fedorenko
Project Manager

March 26, 2007

Mr. Ed Bakowski
Division of Air Pollution Control –Permitting Section
Illinois Environmental Protection Agency
1021 North Grand
Springfield, Illinois 62702

Subject: Application for Renewal of Production Increase Permit at the United States Steel Corporation - Granite City Works, Granite City, IL (Facility ID No. 119813AAI)

RECEIVED
MAR 27 2007
IEPA-DAPC-SPFLD

Dear Mr. Bakowski:

United States Steel Corporation (U. S. Steel) is herein applying for renewal of the Production Increase Permit for the Granite City Works. The renewal is required because this permit was revised after submittal of the facility's CAAPP application and the revised permit is set to expire. The permit is the Production Increase Permit (IEPA Permit No. 95010001) issued June 25, 2002 and expiring June 25, 2007.

The Granite City Works has already submitted a complete CAAPP application and is currently awaiting issuance of that permit. In the absence of the completed CAAPP permit, this operating permit does not fall under the permit shield and requires permit renewal.

U. S. Steel is currently discussing with IEPA the need to modify the Production Increase Permit to reflect new information on SO_2 emissions from BFG combustion. At this time, U. S. Steel does not believe that modification of the existing permit can take place during the renewal process. However, as stated above, U. S. Steel must renew the operating permit and has completed and included a compliance plan/schedule Form 294 CAAPP in this renewal request. Also included in this application is the revised information on BFG SO2 emissions on Form 240 CAAPP and the completed form 200-CAAPP. Because these forms are not specifically suited for Pre-CAAPP operating permit renewals, the form 200-CAAPP does not identify the operating permit being renewed.

To reduce the volume of paperwork necessary for this renewal application, by signature below, U. S. Steel certifies that with the exception of the BFG combustion SO_2 emission rate, all the information previously submitted for the Production Increase Permit remains true, correct and current as required by 35 IAC 201.157 and therefore does not require re-submittal here. The revised information on BFG combustion SO_2 emissions has been included in the forms attached.

If you have questions or require further information, please contact Robert Ribbing at (618) 451-4026.

Sincerely,

Michael Fedorenko
General Manager
Granite City Works
U. S. Steel Corporation

jm

Enclosures

R009154

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision # _____
Date ____ / ____ / ____
Page ____ of ____
Source Designation: _____

APPLICATION FOR CAAPP PERMIT
(CHECK ONLY ONE)

- ☐ INITIAL APPLICATION
- ☒ RENEWAL APPLICATION
- ☐ SIGNIFICANT MODIFICATION

FOR AGENCY USE ONLY

ID NUMBER: 119813AAI
PERMIT #: 95010001
DATE: 3/27/07

SOURCE INFORMATION

1) SOURCE NAME: United States Steel Corporation - Granite City Works
2) DATE FORM COMPLETED: 03/20/07
3) SOURCE STREET ADDRESS: 1951 State Street
4) CITY: Granite City
5) ZIP: 62040
6) IS THE SOURCE LOCATED WITHIN CITY LIMITS? ☒ YES ☐ NO
7) TOWNSHIP NAME: Nameoki
8) COUNTY: Madison
9) TYPICAL NO. OF EMPLOYEES AT THE SOURCE: 2200
10) ILLINOIS AIR POLLUTION SOURCE ID NO. (IF KNOWN): 119813AAI
11) FEDERAL EMPLOYER IDENTIFICATION NO (FEIN):
12) TYPE OF SOURCE AND PRODUCTS PRODUCED: Integrated Iron and Steel Mill
13) PRIMARY STANDARD INDUSTRIAL CLASSIFICATION (SIC) CATEGORY: Primary Metals Industries
14) PRIMARY SIC NO.: 3312
15a) LATITUDE (DD.MM SS):
b) LONGITUDE (DD.MM SS):
16a) UTM ZONE: 15
b) UTM VERTICAL (KM): 4286
c) UTM HORIZONTAL (KM): 748
17a) COORDINATE METHOD:
b) REFERENCE LOCATION:
c) COORDINATE ACCURACY:
18) SOURCE ENVIRONMENTAL CONTACT PERSON: Larry Siebenberger
19) CONTACT PERSON'S TELEPHONE NO.: 618.451.3391

RECEIVED
MAR 2 7 2007
EPA - DAPC - SPFLD

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

FOR APPLICANT'S USE

APPLICATION PAGE _____

OWNER INFORMATION

20) NAME: United States Steel Corporation

21) ADDRESS: 600 Grant St.

22) CITY:	23) STATE:	24) ZIP:
Pittsburgh	PA	15219

25) OWNER'S AGENT (IF APPLICABLE):

OPERATOR INFORMATION

26) NAME:

27) ADDRESS:

28) CITY:	29) STATE:	30) ZIP:

BILLING INFORMATION

31) NAME:

32) ADDRESS:

33) CITY:	34) STATE:	35) ZIP:

36) CONTACT PERSON:	37) CONTACT PERSON'S TELEPHONE NO.:
	618.451.4026

APPLICANT INFORMATION

38) WHO IS THE PERMIT APPLICANT? (CHECK ONE): ☒ OWNER ☐ OPERATOR

39) ALL CORRESPONDENCE TO: (CHECK ONE) ☐ OWNER ☐ OPERATOR ☒ SOURCE

40) ATTENTION NAME AND/OR TITLE FOR WRITTEN CORRESPONDENCE:
Larry Siebenberger - Environmental Manager

41) TECHNICAL CONTACT PERSON FOR APPLICATION:	42) CONTACT PERSON'S TELEPHONE NO.:
Robert Ribbing	618.451.4026

SUMMARY OF APPLICATION CONTENTS

NOTE: ITEMS 43 TO 62 WILL BE USED FOR APPLICATION COMPLETENESS DETERMINATION

43) DOES THE APPLICATION INCLUDE A TABLE OF CONTENTS?	☐ YES ☒ NO
44) DOES THE APPLICATION INCLUDE A LIST OF ALL ITEMS AND ACTIVITIES FOR WHICH A PERMIT IS BEING SOUGHT?	☒ YES ☐ NO
45) DOES THE APPLICATION INCLUDE A PLOT PLAN AND/OR MAP DEPICTING THE AREA WITHIN ONE-QUARTER MILE OF THE SOURCE?	☐ YES ☒ NO
46) DOES THE APPLICATION INCLUDE A PROCESS FLOW DIAGRAM(S) SHOWING ALL EMISSION UNITS AND CONTROL EQUIPMENT, AND THEIR RELATIONSHIP?	☐ YES ☒ NO
47) DOES THE APPLICATION INCLUDE A COMPLETE PROCESS DESCRIPTION FOR THE SOURCE?	☐ YES ☒ NO
48a) DOES THE APPLICATION INCLUDE THE APPROPRIATE, COMPLETED FORMS FOR ALL INDIVIDUAL EMSSION UNITS AND AIR POLLUTION CONTROL EQUIPMENT, LISTING ALL APPLICABLE REQUIREMENTS AND PROPOSED EXEMPTIONS FROM OTHERWISE APPLICABLE REQUIREMENTS?	☐ YES ☒ NO
b) DOES THE APPLICATION ADDRESS OTHER MODES OF OPERATION FOR WHICH A PERMIT IS BEING SOUGHT?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
c) DOES THE APPLICATION INCLUDE ALL REASONABLY ANTICIPATED OPERATING SCENARIOS FOR WHICH A PERMIT IS BEING SOUGHT?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
49) DOES THE APPLICATION INCLUDE A COMPLETED "FUGITIVE EMISSION" FORM 391-CAAPP?	☐ YES ☒ NO
50) DOES THE APPLICATION INCLUDE A COMPLETED "FEE DETERMINATION FOR CAAPP PERMIT" FORM 292-CAAPP? (NOTE: ANNUAL FEES WILL BE BASED UPON INFORMATION CONTAINED IN THIS FORM.)	☐ YES ☒ NO
51) DOES THE APPLICATION INCLUDE A COMPLETED "HAZARDOUS AIR POLLUTANT EMISSION SUMMARY" FORM 215-CAAPP?	☐ YES ☒ NO
52) DOES THE APPLICATION INCLUDE THE CALCULATIONS ON WHICH THE FOLLOWING, TO THE EXTENT THEY ARE RELATED TO AIR EMISSIONS, WERE BASED: • POLLUTANT EMISSION RATES, • FUELS AND RAW MATERIALS USAGE, AND • CONTROL EQUIPMENT EFFICIENCY?	☐ YES ☒ NO
53) DOES THE APPLICATION INCLUDE A COMPLETED "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE FOR CAAPP PERMIT" FORM 293-CAAPP?	☐ YES ☒ NO
54) DOES THE APPLICATION INCLUDE A COMPLETED "COMPLIANCE CERTIFICATION" FORM 295-CAAPP?	☐ YES ☒ NO
55) DOES THE APPLICATION INCLUDE A COMPLETED "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE ADDENDUM FOR NONCOMPLYING EMISSION UNITS" FORM 294-CAAPP FOR ONE OR MORE NONCOMPLIANT EMISSION UNITS FOR WHICH ISSUANCE OF A CAAPP PERMIT IS REQUESTED?	☐ *NA ☒ YES ☐ NO *NOTE: NOT APPLICABLE

56) HAS THE APPLICANT RETAINED A COPY OF THIS APPLICATION AT THE SOURCE? (NOTE: IF TRADE SECRET INFORMATION IS NOT BEING SUBMITTED, THEN ONLY THE ORIGINAL APPLICATION NEED BE INITIALLY SUBMITTED, HOWEVER, THE ILLINOIS EPA MAY REQUEST UP TO 4 COPIES OF THE FINAL APPLICATION PRIOR TO PUBLIC NOTICE.)	☒ YES ☐ NO
57a) DOES THE APPLICATION CONTAIN TRADE SECRET INFORMATION?	☐ YES ☒ NO
b) IF YES, HAS SUCH INFORMATION BEEN PROPERLY MARKED AND CLAIMED, AND TWO SEPARATE COPIES OF THE APPLICATION SUITABLE FOR PUBLIC INSPECTION BEEN SUBMITTED, IN ACCORDANCE WITH APPLICABLE REGULATIONS?	☐ YES ☐ NO
58) DOES THE APPLICATION INCLUDE AN EARLY REDUCTION DEMONSTRATION FOR HAZARDOUS AIR POLLUTANTS (HAP) PURSUANT TO SECTION 112(i)(5) OF THE CLEAN AIR ACT AS AMENDED IN 1990?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
59) DOES THE APPLICATION INCLUDE A PROPOSED DETERMINATION OF MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT) FOR HAZARDOUS AIR POLLUTANTS PURSUANT TO SECTION 112 OF THE CLEAN AIR ACT AS AMENDED IN 1990?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
60) HAS THE APPLICANT REGISTERED A RISK MANAGEMENT PROGRAM FOR ACCIDENTAL RELEASES PURSUANT TO SECTION 112(r) OF THE CLEAN AIR ACT AS AMENDED IN 1990 OR INTENDS TO COMPLY WITH THIS REQUIREMENT IN ACCORDANCE WITH ITS COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
61a) FOR CAAPP PERMIT RENEWALS, DOES THE APPLICATION INCLUDE A COMPLIANCE ASSURANCE MONITORING PLAN (FORM 464-CAAPP) PURSUANT TO 40 CFR PART 64?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
b) FOR SIGNIFICANT MODIFICATIONS AND INITIAL CAAPP APPLICATIONS SUBMITTED AFTER APRIL 20, 1998, DOES THE APPLICATION INCLUDE A COMPLIANCE ASSURANCE MONITORING PLAN (FORM 464-CAAPP) PURSUANT TO 40 CFR PART 64 FOR EMISSION UNITS WITH POST-CONTROL EMISSIONS GREATER THAN OR EQUAL TO THE MAJOR SOURCE THRESHOLD?	☒ *NA ☐ YES ☐ NO *NOTE: NOT APPLICABLE
62) FOR SIGNIFICANT MODIFICATIONS, DOES THE APPLICATION INCLUDE A DESCRIPTION OF THE PROPOSED CHANGE(S), INCLUDING ALL PHYSICAL CHANGES IN EQUIPMENT, CHANGES IN THE METHOD OF OPERATION, CHANGES IN EMISSIONS, AND ANY NEW APPLICABLE REQUIREMENTS WHICH WILL APPLY AS A RESULT OF THE PROPOSED CHANGE?	☐ YES ☐ NO

NOTE: ANSWERING "NO" TO ANY OF THE ABOVE (ITEMS 43-62, EXCEPT ITEM 57a) MAY RESULT IN THE APPLICATION BEING DEEMED INCOMPLETE.

63) DOES THE APPLICATION REQUEST TO UTILIZE THE OPERATIONAL FLEXIBILITY PROVISIONS AND INCLUDE THE INFORMATION REQUIRED FOR SUCH USE?	☐ YES ☒ NO
64a) DOES THE APPLICANT HEREBY REQUEST A PERMIT SHIELD FOR THE ENTIRE SOURCE?	☐ YES ☒ NO
b) IF NO, DOES THE APPLICATION CONTAIN A REQUEST FOR A PERMIT SHIELD FOR SPECIFIC ITEMS ONLY, IN ACCORDANCE WITH THE INSTRUCTIONS FOR A CAAPP PERMIT?	☐ YES ☒ NO
65) DOES THE APPLICATION INCLUDE A COMPLETED "LISTING OF INSIGNIFICANT ACTIVITIES" FORM 297-CAAPP?	☐ YES ☒ NO
66) DOES THE APPLICATION INCLUDE A DRAWING PROVIDING THE SOURCE LAYOUT? IF NO, PLEASE NOTE THAT THE ILLINOIS EPA MAY REQUEST SUCH A DRAWING UPON DETAILED REVIEW OF THE APPLICATION	☐ YES ☒ NO

67) WHY IS THE APPLICANT APPLYING FOR A CAAPP PERMIT (CHECK ALL THAT APPLY)?

☒ THE POTENTIAL TO EMIT ONE OR MORE AIR POLLUTANTS FOR THE SOURCE IS 100 TONS/YEAR OR GREATER

☐ THE SOURCE IS AN AFFECTED SOURCE FOR ACID RAIN DEPOSITION

☐ THE POTENTIAL TO EMIT VOM IS 25 TONS/YEAR OR MORE AND THE SOURCE IS LOCATED IN ONE OF THE FOLLOWING CHICAGO AREA COUNTIES OR TOWNSHIPS:

- COOK COUNTY
- DUPAGE COUNTY
- KANE COUNTY
- LAKE COUNTY
- McHENRY COUNTY
- WILL COUNTY
- AUX SABLE TOWNSHIP, GRUNDY COUNTY
- GOOSE LAKE TOWNSHIP, GRUNDY COUNTY
- OSWEGO TOWNSHIP, KENDALL COUNTY

NOTE: THE U. S. EPA HAS APPROVED AN EXEMPTION ON NITROGEN OXIDES (NOx) EMISSIONS AS AN OZONE PRECURSOR IN THE CHICAGO OZONE NON-ATTAINMENT AREA. THEREFORE THE MAJOR SOURCE THRESHOLD FOR NOx EMISSIONS IS 100 TONS/YEAR UNTIL THIS EXEMPTION IS NO LONGER EFFECTIVE. SHOULD THE CURRENT NOx EXEMPTION BE NO LONGER EFFECTIVE, THE MAJOR SOURCE THRESHOLD FOR NOx EMISSIONS WILL BE 25 TONS/YEAR IN THE ABOVE CHICAGO AREA COUNTIES AND TOWNSHIPS

☐ THE POTENTIAL TO EMIT AN INDIVIDUAL HAZARDOUS AIR POLLUTANT IS 10 TONS/YEAR OR MORE, OR THE POTENTIAL TO EMIT ALL SOURCE WIDE HAZARDOUS AIR POLLUTANTS IS 25 TONS/YEAR OR MORE, OR MEETS AN APPLICABLE LOWER THRESHOLD.

☐ THE SOURCE CONTAINS EQUIPMENT OR OPERATIONS SUBJECT TO CERTAIN USEPA EMISSION STANDARDS (NSPS AND NESHAP) FOR WHICH USEPA REQUIRES A CAAPP PERMIT

68a) ARE ACTUAL EMISSIONS OF THE SOURCE BELOW THE APPLICABILITY LEVELS FOR A CAAPP PERMIT? ☐ YES ☒ NO

b) DOES THE APPLICATION CONTAIN PROPOSED PERMIT LIMITATIONS THAT WILL CONSTRAIN THE EMISSIONS AND PRODUCTION OR OPERATION OF THE SOURCE SUCH THAT POTENTIAL EMISSIONS OF THE SOURCE WILL FALL BELOW THE LEVELS FOR WHICH A CAAPP PERMIT IS REQUIRED? ☐ YES ☒ NO

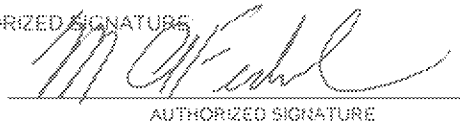
c) DOES THE APPLICANT HEREBY REQUEST A FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CONSTRAINING THE EMISSIONS AND PRODUCTION OR OPERATION OF THE SOURCE SUCH THAT POTENTIAL EMISSIONS WOULD FALL BELOW APPLICABILITY LEVELS AND THEREBY EXCLUDE THE SOURCE FROM REQUIRING A CAAPP PERMIT? ☐ YES ☒ NO

SIGNATURE BLOCK

NOTE: THIS CERTIFICATION MUST BE SIGNED BY A RESPONSIBLE OFFICIAL. APPLICATIONS WITHOUT A SIGNED CERTIFICATION WILL BE RETURNED AS INCOMPLETE.

69) I CERTIFY UNDER PENALTY OF LAW THAT, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION CONTAINED IN THIS APPLICATION ARE TRUE, ACCURATE AND COMPLETE.

AUTHORIZED SIGNATURE

BY 

AUTHORIZED SIGNATURE

Michael Fedorenko

TYPED OR PRINTED NAME OF SIGNATORY

General Mgr / Granite City Works

TITLE OF SIGNATORY

3 / 26 / 07

DATE

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page ____ of ____
Source Designation: _____

FUEL COMBUSTION EMISSION UNIT DATA AND INFORMATION	FOR AGENCY USE ONLY
	ID NUMBER:
	EMISSION POINT #:
	DATE:

SOURCE INFORMATION

1) SOURCE NAME:
United States Steel Corporation - Granite City Works

2) DATE FORM PREPARED	3) SOURCE ID NO (IF KNOWN)
March 23, 2007	119813AAI

GENERAL INFORMATION

4) NAME OF EMISSION UNIT:
BFG Combustion Units (Blast Air Stoves, Boilers 1-12, and Blast Furnace Flare)

5) NAME OF PROCESS:
BFG Combustion

6) DESCRIPTION OF PROCESS:
Combustion of by-product gas

7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED:
steam, hot air, or flaring

8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT:
NA

9) MANUFACTURER OF EMISSION UNIT (IF KNOWN):
NA

10) MODEL NUMBER (IF KNOWN)	11) SERIAL NUMBER (IF KNOWN):

12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)	a) CONSTRUCTION (MONTH/YEAR): Pre-1972
	b) OPERATION (MONTH/YEAR):
	c) LATEST MODIFICATION (MONTH/YEAR): 12/1997

13) DESCRIPTION OF MODIFICATION (IF APPLICABLE):
Changes in emissions related to production increase and related de-bottlenecking emissions from by-product fuels.

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992 CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

FOR APPLICANT'S USE
_____

14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☐ YES ☒ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 240-CAAPP MUST BE COMPLETED FOR EACH MODE):

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT. IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 250-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

None

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

185,030 MMscf of Blast Furnace Gas production annually

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 240-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS: 8760	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52
b) TYPICAL OPERATING HOURS: 8760	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52

20) ANNUAL THROUGHPUT	DEC-FEB(%): 25	MAR-MAY(%): 25	JUN-AUG(%): 25	SEP-NOV(%): 25

FIRING RATE INFORMATION

21a) RATED OR DESIGN HEAT INPUT CAPACITY (MILLION BTU/HR):

b) IS MORE THAN ONE FUEL FIRED AT A TIME? ☒ YES ☐ NO

IF YES, EXPLAIN:

Boilers and Blast Furnace Stoves are permitted to fire natural gas, blast furnace gas (BFG), coke oven gas, and fuel oil. Blast Furnace Flare fires only BFG.

21c) IF HEAT INPUT CAPACITY IS 100 MILLION BTU/HOUR OR GREATER, PROVIDE FURNACE VOLUME (CUBIC FEET)
NOTE: FURNACE VOLUME IS DEFINED AS THAT VOLUME BOUNDED BY THE FRONT FURNACE WALL WHERE THE BURNER IS LOCATED, THE FURNACE SIDE WATERWALL, AND EXTENDING TO THE LEVEL JUST BELOW OR IN FRONT OF THE FIRST ROW OF CONVECTION PASS TUBES.

	NATURAL GAS	FUEL OIL	COAL	OTHER
d) SINGLE FUEL (MAXIMUM - MILLION BTU/HOUR)				
e) SINGLE FUEL (TYPICAL - MILLION BTU/HOUR)				
f) COMBINED FUEL (TYPICAL - MILLION BTU/HOUR) (IF APPLICABLE)				

NATURAL GAS FIRING

22a) CURRENT ORIGIN OF NATURAL GAS

☐ PIPELINE (FIRM CONTRACT) ☐ BY-PRODUCT, SPECIFY ORIGIN:

☐ PIPELINE (INTERRUPTIBLE SUPPLY CONTRACT) ☐ OTHER, - SPECIFY: _____

b) TYPICAL HEAT CONTENT (BTU/SCF):

c) MAXIMUM CONSUMPTION	SCF/MONTH:	SCF/YEAR:
d) TYPICAL CONSUMPTION	SCF/MONTH:	SCF/YEAR:

OIL FIRING

23a) OIL TYPE (CHECK ONE):

☐ NO. 1 ☐ NO. 2 ☐ NO. 4 ☐ NO. 5 ☐ NO. 6

☐ OTHER, SPECIFY (INCLUDE GENERATOR OR SUPPLIER): _____

b) TYPICAL HEAT CONTENT: _____

☐ BTU/LB - OR - ☐ BTU/GAL

c) IS OIL USED ONLY AS A RESERVE FUEL? ☐ YES ☐ NO

d) TYPICAL SULFUR CONTENT AS FIRED (WT %):

e) TYPICAL ASH CONTENT AS FIRED (WT %):

f) MAXIMUM CONSUMPTION	GAL/MONTH:	GAL/YEAR:
g) TYPICAL CONSUMPTION	GAL/MONTH:	GAL/YEAR:

h) FIRING DIRECTION:

☐ HORIZONTAL ☐ TANGENTIAL ☐ OTHER, SPECIFY:

SOLID FUEL FIRING

*24a) SOLID FUEL TYPE (CHECK ALL THAT APPLY)
☐ SUB BITUMINOUS COAL ☐ LIGNITE COAL ☐ BITUMINOUS COAL
☐ ANTHRACITE COAL ☐ OTHER, SPECIFY:

b) TYPICAL HEAT CONTENT AS FIRED (BTU/LB):	c) TYPICAL MOISTURE CONTENT AS FIRED (WT %):
d) TYPICAL SULFUR CONTENT AS FIRED (WT %):	e) TYPICAL ASH CONTENT AS FIRED (WT %):
f) TYPICAL FINES CONTENT (% LESS THAN 1/8 INCH):	g) IS THE COAL CLEANED? ☐ YES ☐ NO

h) HOW MUCH COAL REFUSE IS IN THE FUEL? (WT %)

i) MAXIMUM CONSUMPTION	TON/MONTH:	TON/YEAR:
j) TYPICAL CONSUMPTION	TON/MONTH:	TON/YEAR:

k) FIRING TYPE (CHECK ONE):
☐ TRAVELING GRATE ☐ SPREADER STOKER % REINJECTION:
☐ CYCLONE ☐ PULVERIZED, TYPE (CIRCLE ONE): WET BOTTOM DRY BOTTOM
☐ HORIZONTALLY OPPOSED ☐ OTHER, SPECIFY: _____

*NOTE: IF REQUIRED, SUBMIT COPIES OF THOSE PORTIONS OF COAL SUPPLY CONTRACTS WHICH SET FORTH THE SPECIFICATIONS OF THE FUEL AND THE DURATION OF THE CONTRACT. IF THE ACTUAL FUEL FIRED IS A BLEND OF COAL, SUBMIT APPROPRIATE PORTIONS OF ALL FUEL CONTRACTS AND STATE THE MANNER BY WHICH THE FUELS ARE BLENDED AND ACTUALLY FIRED. ATTACH AND LABEL AS EXHIBIT 240-2.

OTHER FUEL FIRING

Z5a) OTHER FUEL FIRING

	TYPE	SUPPLIER
a)	BFG	by-product fuel
b)		

b) TYPICAL HEAT CONTENT (SPECIFY UNITS): 80 btu/cf	c) TYPICAL NITROGEN CONTENT AS FIRED (WT %): 38
d) TYPICAL SULFUR CONTENT AS FIRED (WT %): < 0.005	e) TYPICAL ASH CONTENT AS FIRED (WT %):

f) MAXIMUM CONSUMPTION	(SPECIFY UNITS/MONTH):	(SPECIFY UNITS/YEAR): 185030 mmcf
g) TYPICAL CONSUMPTION	(SPECIFY UNITS/MONTH):	(SPECIFY UNITS/YEAR): 135000 mmcf

APPLICABLE RULES

26) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., PARTICULATE MATTER, IAC 212.200, <= 0.10 LBS/MMBTU):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)

27) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)

28) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)

29) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)

30) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)

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31) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 240 3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

32) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☐ YES ☒ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE – ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

33) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Emission Factors

34) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Recordkeeping

TESTING, MONITORING, RECORDKEEPING AND REPORTING

35a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY)

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
BFG	mmscf	flow meter	monthly

35b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
BFG Productio	Log	Utilities Mgr	Env. Mgr.

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

36a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE.

None

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., OPACITY)?

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR):

36d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☐ NO

IF NO, EXPLAIN:

37) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 240-4.

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS

38) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY

(39)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☒ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM						( )	G S			
	TYPICAL						( )				
LEAD	MAXIMUM						( )				
	TYPICAL						( )				
NITROGEN OXIDES (NOx)	MAXIMUM						( )				
	TYPICAL						( )				
PARTICULATE MATTER (PART)	MAXIMUM						( )				
	TYPICAL						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM						( )				
	TYPICAL						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM		1297.99		14.03		( )				622.15
	TYPICAL				lbs/mmcf		( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM						( )				
	TYPICAL						( )				
OTHER, SPECIFY: _____	MAXIMUM						( )				
	TYPICAL						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 240-6.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE

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(40) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

HAP INFORMATION		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE				ALLOWABLE BY RULE	
NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	[5]RATE OR STANDARD	APPLICABLE RULE
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
		MAXIMUM						
		TYPICAL						
EXAMPLE:		MAXIMUM	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 240-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

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EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT

41) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:

42) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.

43) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):

44) DISCHARGE HEIGHT ABOVE GRADE (FT):

45) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):

46) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA.

47) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM):	b) TYPICAL (ACFM):
48) EXIT GAS TEMPERATURE	a) MAXIMUM (°F):	b) TYPICAL (°F):

49) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):

50) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT

	NAME	FLOW DIAGRAM DESIGNATION
a)		
b)		
c)		
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE

51a) LATITUDE	b) LONGITUDE:

52) UTM ZONE	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

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Illinois EPA
Document Index Form

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BREAKm

Bureau ID: 119813AAI Illinois EPA ID: 170000125683

Location Name: US Steel Granite City

Category: 03M

Document Date: 12/17/2012

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Date:

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Comment:

REVISION PRODUCTION INCREASE:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 - (217) 782-2113

PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/785-1705

CONSTRUCTION PERMIT/PSD APPROVAL
REVISED

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

PERMITTEE

U.S. Steel Granite City
Attn: Bryan Kresak, Environmental Director
Route 203 and 20th Street
Granite City, Illinois 62040

Application/Permit No.: 95010001
Applicant's Designation:
I.D. No.: 119813AAI
Date Orig. Issued: January 25, 1996
Subject: Production Increase
Date Revision Request: May 30, 2012
Date Revision Issued: December 17, 2012 (See Finding 1(c))
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in the allowable production rate of iron (from 2,372,500 to 3,165,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year) as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

FINDINGS

1a. Various changes have been made to the provisions of this permit for the Basic Oxygen Furnaces (BOF's), at the request of the Permittee, so that the permit will accommodate an emission reduction project that is planned for particulate emissions from the BOFs. In particular, the revised permit does not include requirements for the operation of these BOF's and the existing electrostatic precipitator (ESP) control system that would be inconsistent with the use of a separate control system with a baghouse for secondary emissions of the BOFs, as is now planned (see Construction Permit Application 11050006).

b. Prior to issuance of this revised permit, a draft of the revised permit underwent a public comment period, including a public hearing.

c. This revised permit will become effective 33 days after the date of issuance unless a petition for review is filed, in accordance with 40 CFR Part 124, with the USEPA's Environmental Appeals Board (Board), in which case, this revised permit will only take effect when and if the Board declines the petition for review or the Board issues a decision on the merits of the appeal that does not include a remand of the proceeding.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOF's) shall not exceed 11,000 net tons per day, averaged over any calendar month; and

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hour and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(23).

8. Opacity of emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis, pursuant to 35 IAC 212.446(c).

9. The Permittee shall operate and maintain the BOF's and associated capture and control systems in accordance with applicable requirements of the National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, including requirements for operational monitoring, performance testing for opacity and emissions of particulate matter,* operation of capture and control systems within established limits for operating parameters, implementation of specified operation and maintenance practices, recordkeeping and reporting.

* As related to testing of emissions, if the Permittee is not willing to consider all particulate matter measured by testing to be PM_{10}, as provided for by 35 IAC 212.108(a)(3), performance tests for emissions

of particulate matter shall also include measurements for emissions of PM_{10} in accordance with 35 IAC 212.108(a)(1) or (2).

Note: This condition requires the Permittee to comply with the operating and maintenance requirements of 40 CFR 63 Subpart FFFFF as the means to verify ongoing compliance with the requirements of Conditions 7 and 8 and to address implementation of good air pollution control practice for the BOF's.

(*Former Condition 10 has been removed in this revised permit.*)

11a. Flame suppression shall be used and maintained during the entire tapping process.

b. The above requirement for flame suppression and the various requirements for the BOF's in Condition 12 and 13 shall end after the Permittee begins operation of a capture and control system for secondary emissions from the BOF's that makes these requirements infeasible or unnecessary, as explicitly recognized by Construction Permit 11050006 or other construction permit issued by the Illinois EPA for a capture and control system for secondary emissions.

12a. Except for purposes of emissions testing as related to the set points for the capture system for the BOF's, this capture system shall be operated at the following minimum set points for gas flow rate in the ESP stack until and unless the Illinois EPA approves lower minimum set point(s) based on a demonstration that a better level of particulate matter capture efficiency would now be achieved by the charging hoods and primary hoods.

b. Set points requirements while only a single BOF vessel is in operation:

i. Minimum set point during charging process: 550,000 cfm.

ii. Minimum set point during refining process: 650,000 cfm.

iii. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition).

c. i. During dual operation of BOF vessels (a.k.a., overlapping BOF operation), the minimum set point shall be 700,000 cfm.

ii. In addition, overlapping operation of the BOF vessels is subject to the following requirements. These requirements shall be part of the Standard Operating Procedure for the BOFs.

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. Sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

13a. i. The Permittee shall operate, maintain and calibrate a continuous operational monitor to ESP stack gas flow rate.

ii. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

b. i. The Permittee shall operate and maintain a continuous operational monitor for waste gas suction, i.e., the static pressure in the main downcomer duct of the ESP.

ii. The Permittee shall record the waste gas suction for each process (i.e., for each charge, each refine, each tap) of each steel production cycle.

c. These monitoring systems shall be calibrated on at least a quarterly basis.

d. These monitoring systems shall be operated at all times that a BOF is in operation and shall be used as mechanisms to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts.

(Former Conditions 14 through 17 have been removed in this revised permit.)

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

(The note that previously accompanied Condition 18 has been removed in this revised permit.)

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

    a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year;

    b. Blast Furnace Gas (BFG) usage: 30,800 million ft^3 per month and 185,030 million ft^3 per year;

    c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

    i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

    ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

    iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

    iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

    a. The date (and time for the gate areas) each road or area was treated;

    b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

    c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

    d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

    e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

    f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

    a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

    b. At least weekly, segment of 20th street between Lee and Quincy roads;

    c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM_{10} CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM_{10} contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in conditions 2(b) and 6(b).

C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

(Former Condition 33 has been removed from this revised permit.)

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{mmft}^3 \text{ BFG per month} = \frac{(4.585277 \text{ NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month.} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft^3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source as of January 15, 1996 and supersede such conditions in cases where a conflict exists.

38a. The following tests shall be performed by no later than August 6, 1997 to demonstrate compliance with the conditions of this permit.

i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Agency for review and approval. This plan shall describe the specific procedures for testing, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate
- determined emission factor
- compliance demonstrated - Yes/No
- any other pertinent information

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

(Condition 38 required emission testing following the initial operation of the source with the expansion that has already been conducted by the Permittee. This revised permit does not require that this testing be repeated.)

REPORTING

39. Unless otherwise provided for by the provisions for reporting of deviations in the Clean Air Act Permit Program (CAAPP) permit for the source, if there is a deviation from the requirements of this permit, the Permittee shall submit a report to the Illinois EPA within 30 days after the deviation. The report shall include a description of the deviation, the probable cause of the deviation, the corrective actions that were taken and any preventative measures taken to prevent similar deviations in the future.

40. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

    a. Iron and steel production (tons/month and tons/year, each);

    b. Natural gas and BFG usage ($mmft^3$/month and $mmft^3$/year, each);

    c. Fuel oil usage (thousand gallons/month and thousand gallons/year, for each type of oil).

APPLICABILITY OF MAJOR SOURCE RULES

41a. As a consequence of the above conditions, this permit is issued based upon the following changes in emissions, as further described in Table 6, accompanying increased production as allowed by this permit:

i. The increases in emissions of lead and VOM are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration;

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

- Emission increases which could occur from the project:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
51.6	-52.0	238.8	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Explanatory Note:

PM	=	particulate matter = particulate;
PM_{10}	=	particulate matter less than or equal to 10 micrometers in size;
SO_2	=	sulfur dioxide;
NO_x	=	nitrogen oxides;
VOM	=	volatile organic material;
CO	=	carbon monoxide;
mm	=	million;
gr/dscf	=	grains per dry standard cubic foot;
acfm	=	actual cubic feet per minute;
mmcf	=	million cubic feet;
Mgal	=	thousands of gallons.

If you have any questions on this permit, please call Kevin Smith at 217/782-7048.

Edwin C. Bakowski

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: December 17, 2012

DES:KLS:psj

cc: IEPA, FOS Region 3

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping) - captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.0703	111.19
PM_{10}	0.0703	111.19
SO_2	0.2006	422.00
NO_x	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.031	49.06
PM_{10}	0.0155	24.53
SO_2	0.0104	21.94
NO_x	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.0024	5.17
PM_{10}	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00417	6.60
PM_{10}	0.00417	6.60
SO_2	0.0100	15.83

TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.02548	40.32
PM_{10}	0.02548	40.32
SO_2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00279	6.01
PM_{10}	0.00279	6.01

TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.16	262.80
PM_{10}	0.16	262.80
NO_x	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.01934 lbs/hour	1.26 tons/year

2. BOF Roof Monitor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.0987	176.71
PM_{10}	0.06614	118.40
Lead	0.0129 lbs/hour	0.08 tons/year

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.03721	58.88
PM_{10}	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hour	0.09 tons/year

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00032	0.57
PM_{10}	0.00032	0.57

TABLE 2 (cont.)

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.0016	2.86
PM_{10}	0.0016	2.86

6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.0050	7.94
PM_{10}	0.0050	7.94

TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Throughput = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00715	12.80
PM_{10}	0.00715	12.80

2. Deslagging Station and Material HS.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00355	6.35
PM_{10}	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.006	10.74
PM_{10}	0.006	10.74
NO_x	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00852	15.25
PM_{10}	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.0071	12.71
PM_{10}	0.0071	12.71

TABLE 3 (cont.)

6. Slab Ripping

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	0.00722	12.92
PM_{10}	0.00722	12.92

TABLE 4

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage ($mmft^3$/Year)
Natural Gas (Total)	1,346
BFG	185,030
Fuel Oil	365 thousand gallons/year

1. Natural Gas

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	5.1	3.43
PM_{10}	5.1	3.43
SO_2	0.6	0.40
NO_x	306.0	205.94
VOM	2.8	1.88
CO	40.0	26.92

2. BFG

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	2.9	268.29
PM_{10}	2.9	268.29
SO_2	6.65	615.22
NO_x	5.28	488.48
CO	13.7	1,267.46

TABLE 4 (cont.)

3. Fuel Oil

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Year)
PM	9.72	1.77
PM_{10}	9.72	1.77
SO_2	141.3	25.79
NO_x	55.0	10.04
VOM	0.28	0.05
CO	5.0	0.91
Lead	0.336	0.06 (waste oil)

TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

Units = tons/year

	PM	PM_{10}	SO_2	NO_x	VOM	CO	Lead
Blast Furnace Operations	218	194	474	24	157	---	---
BOF Shop	510	451	---	70	12	16,097	1.43
Continuous Casting Operations	71	71	---	90	---	---	---
Certain Fuel Combustion Units[A]	274	274	641	706	2	1,295	0.06
Roadways	27	27	---	---	---	---	---
Material Handling	2	2	---	---	---	---	---
Total	1,102	1,019	1,115	890	171	17.392	1.49

[A] Blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

- Emission increases which could occur from the project:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
51.6	-52.0	238.8	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

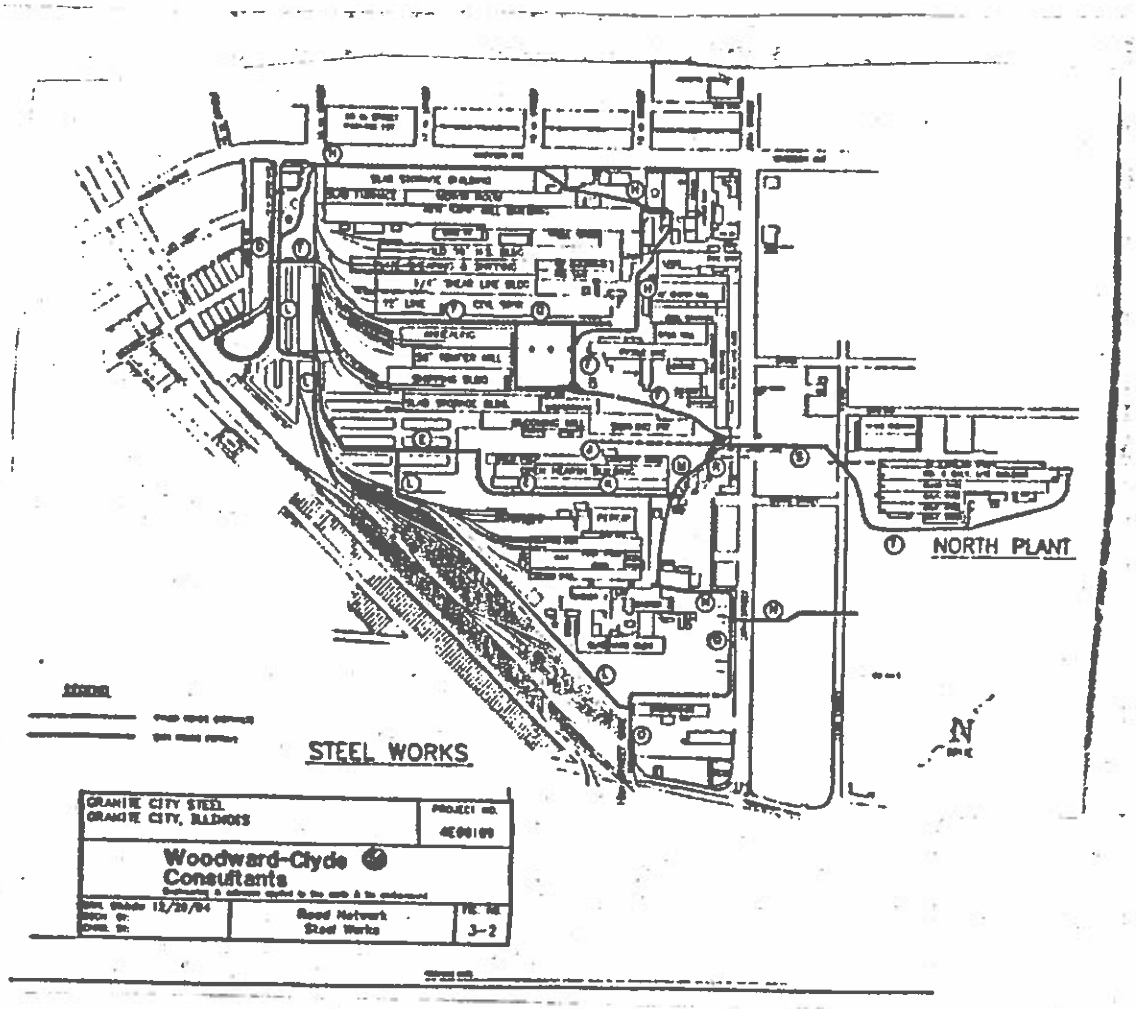
PM_{10}	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

ATTACHMENT A

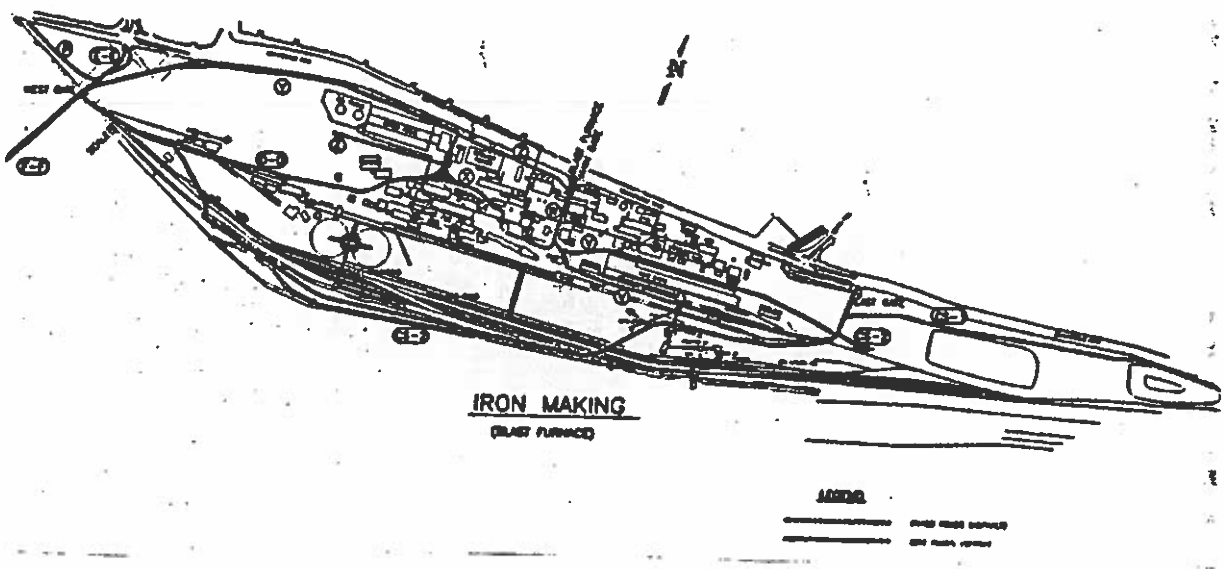
(Former Attachment A has been removed in this revised permit.)

ATTACHMENT B

ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND
MAPS SHOWING THE ROAD SEGMENTS

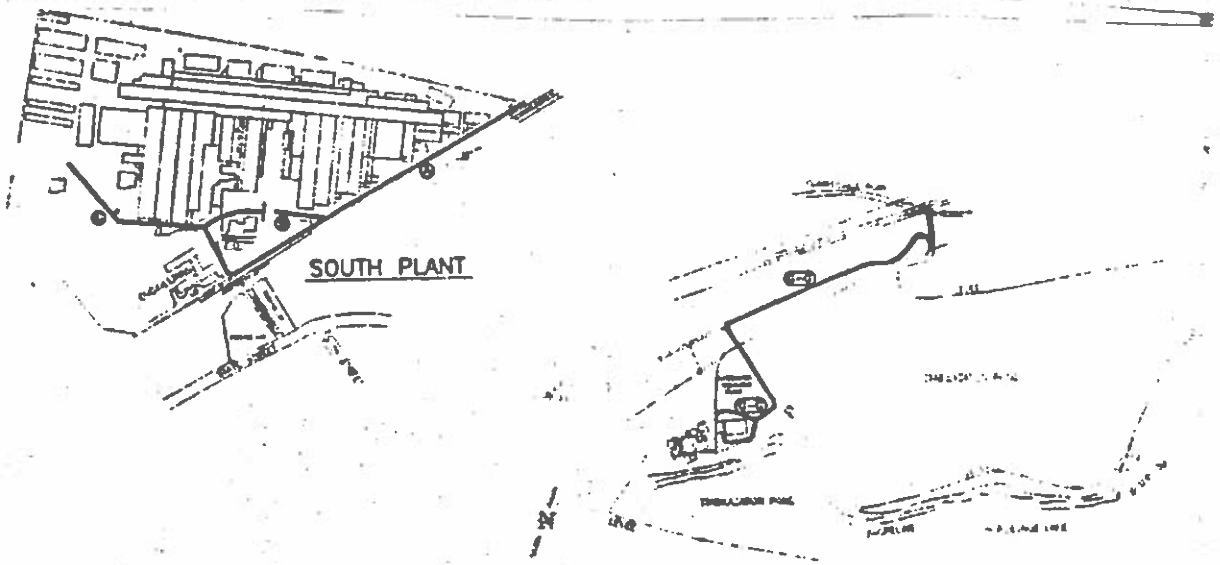


ATTACHMENT B (cont.)



GRANITE CITY STEEL GRANITE CITY, ILLINOIS	PROJECT NO. 4E88109
Woodward-Clyde Consultants	
DRN. BY: bdw 12/29/94 DSGN. BY: CHKD. BY:	Road Network Iron Making Area
	FIG. NO. 3-3

ATTACHMENT B (cont.)



GRANITE CITY STEEL GRANITE CITY, ILLINOIS	PROJECT NO. 4E66199
Woodward-Clyde Consultants	
Date: 12/29/94 DRAWN BY: CHKD BY:	Road Network South Plant & WWTP
	FIG. NO. 3-4

ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE EMISSIONS OF PM_{10}

- Historic roadway emissions of 428 tons/year, minus future potential roadway emissions of 27 tons/year, equals a resulting reduction in roadway emissions of 401 tons/year

- Historic material handling emissions of 17 tons/year minus future potential material handling emissions of 2 tons/year, equals a resulting reduction in material handling emissions of 15 tons/year.

- Emission reductions resulting from the sweeping of city streets = 52 tons/year*

- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/year*

Total reductions in the emissions of PM_{10} as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 480 tons/year

* These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

KLS:psj

R009200

CALCULATION SHEET

Facility US Steel - Granite City	I.D. 119213AAI
Anal. Eng. cn Date 12 17 12	PN 95010001
Rev. Eng. _____ Date 5 30 12	Date Rec. ___ ___ ___

REVISION OF CONSTRUCTION PERMIT / PSD APPROVAL

Permit was originally issued in 1996 for an expansion of the iron and steel production capacity of the Granite City Works. Permit was issued to Granite City Steel, former owner of this steel mill. The expansion project was subject to PSD for emissions of SO_2 and CO. The emissions of other pollutants were not subject to PSD.

The revision to the permit would make changes to operational requirements for the Basic Oxygen Furnaces (BOFs) to accommodate installation of a separate control system for secondary emissions of particulate matter from the BOFs. These emissions are currently controlled with some hooding for charging and the overhang of the furnace roof for tapping, with emissions from tapping abated using flame suppression. Operational limits for the control system flow rate are set for this configuration of the control system based on stack gas flow rates of the ESP.

These requirements would no longer be appropriate or feasible with the new control system. Reduced loadings to the ESP will be appropriate as secondary emissions will be controlled by the new baghouse control system. In addition, reduced air flow through the ESP will improve its efficiency, both directly and as there will be less variability in temperature of flow. Also, use of flame suppression is incompatible with control by a baghouse, both as poses operational risk and increases the volume of gas. In addition, new baghouse system will have capacity to accommodate simultaneous charging of one furnace and tapping of the other.

No changes to regulatory requirements - Compliance will be enhanced.

New control system is required by an Agreement between IEPA & US Steel. Addressed by sup. C. Permit 11050006, yet to be issued - project / revisions are conceptually ok cn 12/17/12

CALCULATION SHEET

Facility _____	I.D. ___ ___ ___ ___
Anal. Eng. _____ Date ___ ___ ___	PN ___ ___ ___ ___ ___
Rev. Eng. _____ Date ___ ___ ___	Date Rec. ___ ___ ___

Issue for the revised permit is appropriately "juggling" or coordinating various requirements among the construction Permit for the new control system (C. Permit 11 05 0006), this historic permit 9501 0001, and the CAAPP permit for the source (CAAPP 96030056). This is discussed at length in the two Project Summaries that were prepared for the public comment period (one for the revision of this permit, and one for the proposed issuance of the C. Permit for the new control system.) In addition, various changes have been made in the revised PSD permit, as would now be issued, to respond to comments from USPA, as are discussed in the accompanying Responsiveness Summary. Other aspects of coordination related to the C. Permit for the new control system and the CAAPP will be resolved before that permit is acted upon.

Ok can grant.

The Responsiveness Summary that has been prepared also addresses other comments that were received during the public comment period except for comments from US Steel that were narrowly focused on the condition of the draft C. Permit for new baghouse control system. (These comments will be dealt with when final action is taken on that action. This will not occur until USEPA has an opportunity to review the changes that this permit would authorize to be made by administrative amendment to accomodate the new baghouse control system.

Ok can

Facility _____	I.D. ___ ___ ___
Anal. Eng. _____ Date ___ ___ ___	PN ___ ___ ___ ___
Rev. Eng. _____ Date ___ ___ ___	Date Rec. ___ ___ ___

Review of Condition of Revised Permit

Condition 9

Most significant change is that condition requires US Steel to implement the compliance procedures of the Iron & Steel NESHAP as the means to provide independent / direct enforceability of the provisions of the PSD permit that would not longer apply after a dedicated system for control of secondary emissions is installed, as now planned.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
P. O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

July 1, 1985

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless susperseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.

2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any duly authorized agent of the Agency upon the presentation of credentials, at reasonable times:

   a. to enter the permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,

   b. to have access to and to copy any records required to be kept under the terms and conditions of this permit,

   c. to inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,

   d. to obtain and remove samples of any discharge or emissions of pollutants, and

   e. to enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities,

   c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations,

   d. does not take into consideration or attest to the structural stability of any units or parts of the project, and

e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Agency before the equipment covered by this permit is placed into operation.

b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.

7. The Agency may file a complaint with the Board for modification, suspension or revocation of a permit:

a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed, or

b. upon finding that any standard or special conditions have been violated, or

c. upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

R009205

PERMIT REVIEW TRAVELER SHEET

I.D. #	119813AAI	Source Name	US Steel Granite City	Date Received	5-30-2012
Application #	95010001	Location	Granite City	Date Opened	5-30-2012

Program: TITLE V Type: CONSTRUCTION Title V Type:

Flag	Date	Section	Contact	Expiration Date
	11-3-2010	CASM	JONES, ERIC	11-3-2013

Emissions(Tons/Year)	CO	NOX	PM	SO2	VOM	Total HAP	Highest Single HAP
Current Allowable Rates	17,819.32	3,918.51	2,928.36	18,130.52	470.07	118.654732	114.77 - BENZENE
Project/Total Increase							

Initial Completeness	Analyst	Unit Manager	Date of Determination	Application Complete?	
CAAPP Completeness	N/A			Yes	No
Fee Completeness	N/A			Yes	No
Technical Completeness				Yes	No

Welcome Phone Call to Permit Applicant

Date	Contact Name	Telephone#	Was Additional Information Requested?

For Incomplete Applications Type of Letter Sent	Analyst	Unit Manager	Date Issued	Number of Items Requested (or Amount of Fee Requested)
Notice of Additional Fees:				$
Notice of Incompleteness(NOI)				
Request for Addditional Information(RAI)				
All Required Information Received?	Yes	No	Date Received	
Notice of Intent to Deny CAAPP				

Permit Processing	Analyst	Date	Unit Manager	Date
Draft Prepared for Unit Manager Review & Comments Returned to Analyst				
Final Draft Sent to Applicant for Comments				
Submitted to Word Processing				
Draft Permit to Community Relations	N/A			
Public Comment Period Initiated				
Public Hearing Date	N/A			
Public Comment Period Completed	N/A			
45 Day USEPA Comment Period	N/A			
USEPA Comments Received	Yes No			
Responsiveness Summary Completed	N/A			
Public Participation Completed				

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Final Action (Fill in One)	Analyst	Date	Unit Manager	Date
Permit Not Required				
X Grant	12/17/12			12/17/12
Deny				

Mail-Out: X District Office; Enforcement; Public Participation List; Other; Cook County Init BD; Health Dept Date 12-17-12

Permit Electronically Sent to	Applicant	CES	DLC	Community Relations	USEPA	AQPS	FOS
Person Sending (Initials)							

R009206

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name NATIONAL STEEL CORP.— GRANITE CITY DIV. Date Rec'd 4-29-02

Appl.# 95010001 Location GRANITE CITY Analyst _____

CASM: EREWELE, EXP. 9-26-02 & 7-26-02

LEGAL _____ FOS FLAG _____ CROPA NSP/SHAP M&M _____ TOXICS

☐ CAAPP ☐ FESOP ☑ R OPERATING PERMIT APP. ☐ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP

5-1-02 BgD
I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

	SO2	NOx	TSP	VOM	CO	OTHER
POT						
ACT	No change					

Is Project Subject to NSPS/NESHAP: ☐ Yes ☐ No

Is Project a Major Source or Major Modification: ☐ Yes ☐ No
- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☐ No
- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop: ☐ Yes ☐ No
- If Yes, Complete CROPA Section

☐ Project Emissions Recorded Date _____ Init. _____ ☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP Notif. Proj. Summary To/From: BOL_____ PWS_____ WPC _____ DLC _____ USEPA _____
CAAPP Tracking

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project
CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group		Comment Period Completed	
Comment Period Initiated		Comments/Hearing Records Reviewed	
Public Hearing Req./Not Req. If Req. Public Hearing Date		Public Participation Completed	

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☑ Grant	KH	6/25/02	[illegible]	[illegible]	RPS	6/26/02

Forms:

Mail-Out ☑ District ☐ USEPA ☐ Health Depart _____ ☐ Enf ☐ Public Participation List
☐ Cook County ☐ Other Compliance
Date: 6/27/2002 Init. BC Date: _____ Init. _____

BgD

IL 532 2274

R009207

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name National Steel Corp. Date Rec'd 12-22-98

Appl.# 95010001 Location Granite City Analyst _____

CaSM - 9-2-98 PMT - 12-31-99 AAM - 7-23-97 CaSM-6-2

LEGAL _____ FOS FLAG _____ CROPA NSP/SHAP M&M _____ TOXICS

☐ CAAPP ☐ FESOP ☒ OPERATING PERMIT APP. ☐ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP

R

12-23-98 Fem
I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

S02 NOx TSP VOM CO OTHER

POT Coded in Construction permit

ACT _____

Is Project Subject to NSPS/NESHAP: ☐ Yes ☒ No

Is Project a Major Source or Major Modification: ☐ Yes ☒ No

- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☐ No

- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop:

- If Yes, Complete CROPA Section ☐ Yes ☐ No

☐ Project Emissions Recorded Date _____ Init. _____ ☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP CAAPP Tracking Notif. Proj. Summary To/From: BOL _____ PWS _____ WPC _____ DLC _____ USEPA _____

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project

CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group	_____	Comment Period Completed	_____
Comment Period Initiated	_____	Comments/Hearing Records Reviewed	_____
Public Hearing Req./Not Req. If Req. Public Hearing Date	_____	Public Participation Completed	_____

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☒ Grant	ak	1/5/99	JM	1/6/99	[illegible]	1/5/99

Forms:

Mail-Out ☒ District ☐ USEPA ☐ Health Depart _____ ☐ Enf ☐ Public Participation List

☐ Cook County ☒ Other Gary Beckstead Compliance

Date: 1-6-99 Init. B.C. Date: _____ Init. _____

IL 532 2274
APC 539 Feb-96

R009208

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name National Steel Corp Date Rec'd 2/18/97

Appl.# 95010001 Location Granite City Analyst _____

LEGAL _____ FOS FLAG 7/3/97 CROPA NSP/SHAP M&M _____ TOXICS

☐ CAAPP ☐ FESOP ☒ OPERATING PERMIT APP. ☐ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP.

R

4/3/97 I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

	SO2	NOx	TSP	VOM	CO	OTHER
POT	NO INCREASE					
ACT						

☐ Project Emissions Recorded 6/6/97 Init.

Is Project Subject to NSPS/NESHAP: ☐ Yes ☒ No

Is Project a Major Source or Major Modification: ☐ Yes ☒ No

- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☒ No

- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop: ☐ Yes ☒ No

- If Yes, Complete CROPA Section

☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP CAAPP Tracking Notif. Proj. Summary To/From: BOL_____ PWS_____ WPC _____ DLC _____ USEPA _____

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project

CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group	_____	Comment Period Completed	_____
Comment Period Initiated	_____	Comments/Hearing Records Reviewed	_____
Public Hearing Req./Not Req. If Req. Public Hearing Date	_____	Public Participation Completed	_____

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☒ Grant	LLK	6-6-97	DAS	6/6/97	[illegible]	6/5/97

Forms:

Mail-Out ☒ District ☐ USEPA ☒ Health Depart _____ ☐ Enf ☐ Public Participation List

☐ Cook County ☒ Other Compliance

Date: 6-6-97 Init. B.E. Date: _____ Init. _____

IL 532 2274

R009209

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name National Steel Corp Date Rec'd 12/20/96

Appl.# 95010001 Location Granite City Analyst _____

LEGAL _____ FOS FLAG 7/3/97 CROPA NSP/SHAP M&M _____ TOXICS NOT

☐ CAAPP ☐ FESOP ☐ OPERATING PERMIT APP. ☑ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP

1/17/97 I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

	SO2	NOx	TSP	VOM	CO	OTHER
POT		no incr.				
ACT						

Is Project Subject to NSPS/NESHAP: ☐ Yes ☑ No

Is Project a Major Source or Major Modification: ☐ Yes ☑ No
- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☑ No
- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop: ☐ Yes ☑ No
- If Yes, Complete CROPA Section

☐ Project Emissions Recorded Date _____ Init. _____ ☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP CAAPP Tracking Notif. Proj. Summary To/From: BOL_____ PWS_____ WPC _____ DLC _____ USEPA _____

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project

CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group		Comment Period Completed	
Comment Period Initiated		Comments/Hearing Records Reviewed	
Public Hearing Req./Not Req. If Req. Public Hearing Date		Public Participation Completed	

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☑ Grant	gen	3/26/97	HH	3/31/97		

Forms:

Mail-Out ☑ District ☑ USEPA ☐ Health Depart _____ ☐ Enf ☐ Public Participation List ☐ Cook County ☐ Other CAS

Date: 4/2/97 Init. JMV Date: _____ Init. _____

FOS Flag - contacted Jeff Benbenek

IL 532 2274

R009210

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name National Steel Corp Date Rec'd 10/3/96

Appl.# 95010001 Location Granite City Analyst _____

LEGAL _____ FOS FLAG 7/8/96 CROPA NSP/SHAP M&M _____ TOXICS

☐ CAAPP ☐ FESOP ☐ OPERATING PERMIT APP. ☒ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP

R

10/9/96 KAD
I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

	SO2	NOx	TSP	VOM	CO	OTHER
POT		110	INCREASE			
ACT						

Is Project Subject to NSPS/NESHAP: ☐ Yes ☐ No

Is Project a Major Source or Major Modification: ☐ Yes ☐ No
- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☐ No
- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop: ☐ Yes ☐ No
- If Yes, Complete CROPA Section

☐ Project Emissions Recorded Date 10/9/96 Init. _____ ☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP CAAPP Tracking Notif. Proj. Summary To/From: BOL _____ PWS _____ WPC _____ DLC _____ USEPA _____

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project

CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group	_____	Comment Period Completed	_____
Comment Period Initiated	_____	Comments/Hearing Records Reviewed	_____
Public Hearing Req./Not Req. If Req. Public Hearing Date	_____	Public Participation Completed	_____

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☒ Grant	BKR	10/10/96	MBA	10/15/96		

Forms:

Mail-Out ☒ District ☐ USEPA ☐ Health Depart _____ ☐ Enf ☐ Public Participation List

☐ Cook County ☐ Other _____

Date: 10-15-96 Init. _____ Date: _____ Init. _____

Flag - contacted Jeff Benbenek

IL 532 2274
APC 539 Rev-96

R009211

AGENCY CONFIDENTIAL

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name Granite City Steel Co. Date Rec'd 3/5/96

Appl.# 95010001 Location Granite City Analyst _____

LEGAL _____ FOS FLAG 2/1/96 CROPA NSP/SHAP M&M _____ No TOXICS

☐ CAAPP ☐ FESOP ☐ OPERATING PERMIT APP. ☒ CONSTRUCTION PERMIT APP. ☐ JOINT CONSTRUCTION/OPERATION APP

R

3/19/96 I/O Date/Initial

☐ Project Emissions Data (Tons/Year)

SO2	NOx	TSP	VOM	CO	OTHER
POT	No increase				
ACT					

Is Project Subject to NSPS/NESHAP: ☐ Yes ☐ No

Is Project a Major Source or Major Modification: ☐ Yes ☐ No

- If Yes, Complete Major Source Traveler Sheet

Is A public Comment Period Required: ☐ Yes ☐ No

- If Yes, Complete Public Participation Section

Could Project Be Significant Under Crop: ☐ Yes ☐ No

- If Yes, Complete CROPA Section

☐ Project Emissions Recorded Date _____ Init. _____ ☐ Emission Credits Recorded Date _____ Init. _____

CROPA/FESOP CAAPP Tracking Notif. Proj. Summary To/From: BOL _____ PWS _____ WPC _____ DLC _____ USEPA _____

Reply From: BOL _____ ☐ Significant ☐ Not Sign. PWS _____ ☐ Significant ☐ Not Sign. BOW _____ ☐ Significant ☐ Not Sign.

DLC _____ ☐ Significant ☐ Not Sign. USEPA _____ ☐ Significant ☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project

CPR Project Coordinator: _____ Division: _____

Public Participation	DATE		DATE
Memo to Community Relations Group		Comment Period Completed	
Comment Period Initiated		Comments/Hearing Records Reviewed	
Public Hearing Req./Not Req. If Req. Public Hearing Date		Public Participation Completed	

Review Action ☐ Applicability Determ. Form Completed

☐ Special Reviews Requested of: _____

	Analyst		Unit Mgr.		Special Rev.	
☐ Completeness/ Incompleteness						
☐ Confidential Review						
☐ Request Add'l Info.						
☐ Permit Not Required						
☐ Reject						
☐ Deny						
☑ Grant	6/11/96	GRR	HB 7/23/96			

Forms:

Mail-Out ☐ District ☐ USEPA ☐ Health Depart _____ ☐ Enf ☐ Public Participation List

☐ Cook County ☐ Other _____

Date: 7-23-96 Init. B.S Date: _____ Init. _____

FOS Flag- contacted Jeff Benbenek

IL 532 2274

APC 530 Rev 96

R009212

PERMIT REVIEW TRAVELER SHEET

I.D. # 119813AAI Company Name Granite City Steel Co. Date Rec'd 1/3/95

Appl. # 9501000 1 Location Granite City Analyst JRR

QRPT Legal Flag 12/3/94 EAP Apprvd/Not Req 9/14/87 CROPA NSP/SHAP M&M 480-12/29/88FUG2-1/31/94 Toxics

- ☐ Operating Permit Application
- ☒ Construction Permit Application
- ☐ Joint Construction/Operation Application
- ☐ Other

Accumulated Emissions Register	
Previous Const. Permits Issued to Facilty	☐ Yes ☐ No

I/O Date/Initial 1/4/95 amw

☐ Project Emissions Data (Tons/Year) PM-10 = 114.3 lead

	SO_2	NO_x	TSP	HC	CO	OTHER
Pot.	476	35.3	.84	25	5,673	0.54
Act.		Forms		0	Uforms	

☐ Accumulation of Emissions Applies
☐ RFP Applies

☐ Total Accumulated Facility Emissions (Tons/Year)

	SO_2	NO_x	TSP	HC	CO	OTHER
Pot.						
Act.						

Is Project Subject to NSPS/NESHAP : ☐ Yes ☒ No
Is Project a Major Source or Major Modification : ☒ Yes ☐ No — If Yes, Complete Major Source Traveler Sheet
Is Project Controversial : ☒ Yes ☐ No — If Yes, Complete Public Participation Section
Could Project Be Significant Under CROPA : ☐ Yes ☒ No — If Yes, Complete CROPA Section

CROPA

Notification/Project Summary To/From: LPC _____ PWS _____ WPC _____

Reply From:					
LPC _____	☐ Significant	PWS _____	☐ Significant	WPC _____	☐ Significant
	☐ Not Sign.		☐ Not Sign.		☐ Not Sign.

CROPA is Not Applicable/Applicable to this Project CPR Project Coordinator: _____ Division: _____

Public Participation

	Date		Date
Memo to Public Participation Coordinator (P.P.C.)	10/20/95	Public Hearing Req./Not Req. If Req: Public Hearing Date	12/20/95
Public Notice to P.P.C.		Comments/Hearing Records Reviewed	
Notice Published	11/5/95	Public Participation Completed	1/14/96
Notice Period Completed	1/14/96		

Review Action

☐ Applicability Determ. Form Completed

	Analyst		Unit Mgr.		Special Review		Banked Emissions Date	Init.
☐ Special Reviews Requested of:							Emiss. Credits Apply (Analyst)	
☐ Request Add'l Info.							Emiss. Credits Apprvd. (Unit Mgr.)	
☐ Permit Not Required							Emiss. Credits Apprvd. (Support Mgr.)	
☐ Reject							Forms	
☐ Deny								
☒ Grant	1/25/96	JKR	never	1/25/96				

	Date	Initial				
☐ Project Emissions Recorded	1/26/96	LH	☐ District	☒ USEPA	☐ Health Dept.	
☐ Emission Credits Recorded			☐ Other		Date 1/29/96	Init. B.E.

Special Notes

Flag - ok - v/ Jeff Benfenati

Printed on Recycled Paper

R009213

CALCULATION SHEET

Facility	US Steel - Granite City	I.D.	119213AAT
Anal. Eng.	[illegible] Date 12 17 12	PN	95 01 0001
Rev. Eng.	Date 5 30 12	Date Rec.	

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG ~~32~~ 23 2013
REVIEWER JRM

REVISION OF CONSTRUCTION PERMIT / PSD APPROVAL

Permit was originally issued in 1996 for an expansion of the iron and steel production capacity of the Granite City Works. Permit was issued to Granite City Steel, former owner of this steel mill. The [illegible] PSD [illegible] PSD [illegible] PSD.

The revision of the permit would make changes to operations [illegible] to the Basic Oxygen Furnace (BOF's) to accommodate installation of a separate control system for secondary emissions of particulate matter from the BOF's. These emissions are currently [illegible] with some loading to charging and the [illegible] of the furnace [illegible] tapping [illegible] from tapping [illegible] Operational limits for the control system [illegible] are set to the configuration of the control system based on [illegible] of the PSD.

These [illegible] Reduced loading to the PSD [illegible] secondary emissions [illegible] control system [illegible] PSD [illegible] both directly and [illegible] Also, use of [illegible] both [illegible] both [illegible] operational [illegible] with [illegible] capacity to accommodate [illegible] charging of one furnace and tapping of the other.

No changes to [illegible] will be enhanced.

New control system is required to be [illegible] between IEPA & US Steel [illegible] project [illegible]

R009214

CALCULATION SHEET

Facility _____	I.D. _ _ _ _ _ _ _ _ _ _
Anal. Eng. _____ Date _ _ _ _ _ _	PN _ _ _ _ _ _ _ _ _
Rev. Eng. _____ Date _ _ _ _ _ _	Date Rec. _ _ _ _ _ _

Facility _____	I.D. _ _ _ _ _ _ _ _ _ _
Anal. Eng. _____ Date _ _ _ _ _ _	PN _ _ _ _ _ _ _ _ _
Rev. Eng. _____ Date _ _ _ _ _ _	Date Rec. _ _ _ _ _ _

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

R009216

IL 532 0357
EPA - DIVISION OF RECORDS MANAGEMENT
054-002
RELEASABLE
AUG ~~32~~ 23 2013
REVIEWER JRM

Subject Quantification of Reduction in PM Emissions

Data

Reviewed by [signature] Date

Notwithstanding the fact that this project is an emission reduction, i.e., a beneficial project, interest has been expressed both directly in quantifying the reduction in emissions of particulate that will occur. While this interest is reasonable, it is not something that needs to be resolved to issue the permit. As discussed below, a qualitative analysis readily demonstrates that the project will act to reduce particulate emissions. Moreover, the level of reduction that the project must achieve has been agreed to by the Illinois EPA and U Steel, as reflected in the Agreement. Moreover, a "precise" determination of the reduction in particulate emissions is problematic as the focus of the analysis is uncaptured emissions. Inherently the analysis must address the emissions that are not being captured, the magnitude of which must be estimated using experience and technical judgment. Thus, as originally stated, the key question for the permitting of this project is whether it will act to significantly increase particulate emissions. This is not believed to be possible, as discussed below. In addition, no comments have been received that suggest that this project will act to increase emissions.

Qualitative Analysis/Discussion

1. The baghouse system acts to control secondary emissions of particulate. The project does not involve change to the BOFs themselves that would be necessary to increase production and emissions. The project also does not involve changes to other operations at the mill, such as the blast furnaces, iron processing or casters, that would be needed to physically increase capacity.

2. The effect of the project will be to capture more secondary particulate. This is an essential aspect of the project as the project involves better hooding on charging and installation of local hooding on tapping. These measures will not act to increase the generation of secondary emissions. They will merely act to improve the capture of emissions. In this regard, only minor credit should be given for abatement of particulate by flame suppression as it is being applied to the process of tapping, wherein a

Subject _____

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3. Expressed algebraically, secondary emissions currently consist of

$$A + B[1 - C]$$ where A = uncaptured
B = captured
C = control fraction

Future emissions consist of

$$A - D + [B + D][1 - C]$$ where D = additional captured emissions "transferred" to the control device

Comparing current and future emissions, expanding above terms algebraically

Current: $A + B - BC$

Future: $A - D + B(1 - C) + D(1 - C)$

$A - D + B - BC + D - DC$

Subtracting Terms

$$\begin{array}{r} A + B - BC \\ A + B - BC \\ \hline 0 \quad 0 \quad 0 \end{array} \quad - \underbrace{D + D}_{0} - DC$$

↳ negative, a decrease

In other words, as long as more emissions are captured and then controlled, there will be a reduction in secondary emissions

4. For the ESP, reduced air flow results in lower emissions

$$\text{ESP efficiency} = 1 - e^{-\left(\frac{A}{Q}\right)W}$$ where A = area
W = migration velocity
Q = flow

setting A & W constant

$$\text{efficiency} = 1 - e^{-\frac{C}{Q}}$$ where C = constant for A×W

Current configuration: $\eta = 1 - e^{-\frac{C}{Q}}$

Future configuration: $\eta = 1 - e^{-\frac{C}{.9Q}}$

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The smaller the exponent, the greater the control efficiency

For example, taking a fixed C based on a nominal 99% percent control efficiency and 800,000 acfm or 13,333 acfs

$$0.99 = 1 - e^{-\frac{C}{Q}}$$

$$-0.01 = -e^{-\frac{C}{Q}}$$

$$0.01 = e^{-\frac{C}{13,333}}$$

$$\ln 0.01 = -\frac{C}{13,333}$$

$$-4.605 = -\frac{C}{13,333}$$

$$C = 4.605 \times 13,333$$

$$C = 61,400$$

Then, evaluating to determine the effect of a 10 percent reduction in air flow:

$$\mu = 1 - e^{-\frac{61,400}{0.9 \times 13,333}}$$

$$\mu = 1 - e^{-\frac{61,400}{12,000}}$$

$$\mu = 1 - e^{-5.117}$$

$$\mu = 1 - 0.006$$

$\mu = .994$ or 99.4%, or 40 percent less emissions passing through the ESP to the atmosphere

Accordingly, the reduction in air flow that is facilitated by the new baghouse system will have a notable benefit for the performance of the ESP.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

R009219

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Quantitative Analysis

A request has also been made to a quantitative analysis of the change in emissions. US Steel has provided a worst case analysis of the decrease in emissions, which shows a nominal decrease in emissions, i.e., a decrease of 34.11 t/yr, comparing "past emissions" of 439.5 t/yr and "future emissions" of 405 t/yr. However, the evaluation is based on the design capacity of the BOF Shop. It does not reflect actual operating levels, providing only a crude evaluation of the decrease in emissions from this project.

A better analysis is possible starting from actual emission data, as officially reported by US Steel in its Annual Emission Reports. In the last ten years, production has ranged from a low of 929,601 tons in 2001, when the mill was idle for a time, to 2,698,1[illegible] tons in 2002. The two years period with the highest production were 2004-2005, in which emissions were 314 tons/year.

	tonnage	factors ESP	factors Monitor	emissions, ton/yr FSP	emissions, ton/yr Monitor
2004	2,559,903	0.1468	0.0987	187.7	126.2
2005	2,556,865				
ave.	2,558,384	total 0.2455		313.9 ≅ 314.0	

Note: $\frac{2,558,384}{3,580,000 \text{ capacity}} = 0.715$ 71.5%

The future emissions must address three component, adding the baghouse stack.

For the roof monitor, US steel uses a new factor of 0.01675 lb/ton, based on achievement of 99.1% overall capture for charging, considering capture & enclosure, 99.97% overall capture for refining, considering c & e, and 99.61% overall capture for tapping.

Assume future production at 90% of design

Roof Monitor = 0.90 × 3,580,000 tons × 0.01675 lb/ton ÷ 2000 lb/t

= 26.98 tons/yr $\frac{26.98}{}$ ≈ 0.154, "85% improvement"

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-082

R009220

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For the ESP, future emissions can be calculated from the new emission limit for the ESP, recognizing that the ESP may routinely operate below the applicable limit. For an ESP, it is reasonable to presume that the actual emission rate would typically be 80% of the applicable limit.

Base Hourly Rate = 667,200 dscfm × 60 m × 0.01 gr/dscf ÷ 7000 = 53.77 lb/hr

Adj. Hourly Rate = 53.77 × 0.8 = 43.0 lb/hour

Annual Rate = 43.0 × 0.9 × 8760 ÷ 2000 = 169.5 ton/yr

Similarly for the baghouse it is reasonable to presume that the baghouse typically operates with a better margin than the ESP, e.g., 60% of the applicable limit.

Base Hourly Rate = 745,200 dscfm × 60 m × 0.005 gr/dscf ÷ 7000 = 31.9 lb/hr

Adj. Hourly Rate = 31.9 × 0.6 = 19.14 lb/hour

Annual Rate = 19.14 × 0.9 × 8760 ÷ 2000 = 75.4 ton/yr

Combining the three components of the emissions, monitor, ESP & baghouse

26.98 + 169.5 + 75.4 = 217.9 ton/yr, ≅ 220 ton/yr

Emission reduction is the difference,

314 - 270 = Δ - 44 tons/yr, while accomodating a 27 percent higher level of production than achieved in the baseline time period.

Note: Per 35 IAC 212.458(b), the combined PM-10 emissions of the baghouse and ESP must be less than

COMPLETENESS REVIEW WORKSHEET
FOR CONSTRUCTION PERMIT FEES

R009221

FACILITY: US Steel
ID NO.: 119 813 AAI
APPLICATION NO.: 95 01 0001
DATE RECD: 05/30/12 ANALYST: KEVIN S.

IDENTIFICATION OF REVIEW
NUMBER (CIRCLE): (1) 2 3 4 5 6 7 8
☒ INITIAL COMPLETENESS REVIEW
☐ SUPPLEMENTAL SUBMITTAL (DATE): ___/___/___
☐ OTHER TRIGGER (DESCRIBE): _____

TYPE OF SOURCE

☐ MAJOR	☐ SYNTHETIC MINOR HAVE FESOP? ☐ YES ☐ NO	☐ NON-MAJOR

COMPLETENESS REVIEW FOR TECHNICAL INFORMATION

☐ INCOMPLETE (DESCRIBE): _____

ACTION TO BE TAKEN

☐ CALL ☐ REQUEST ADDITIONAL INFORMATION ☐ REJECT ☐ DENY

ACTION COMPLETED: ___/___/___ "DAY": _____

☐ APPLICATION COMPLETE

COMPLETENESS REVIEW FOR FEES

☐ INADEQUATE
☐ UNCERTAIN

☐ CORRECT
☐ OVERPAID (DESCRIBE): _____

ACTION TO BE TAKEN

☐ CONTINUE WITH TECHNICAL REVIEW
☐ REQUEST TECHNICAL INFO (SEE ABOVE)
☐ REQUEST TECHNICAL INFO & UPDATED FEE INFO (SEE ABOVE)
☐ BILL & CONTINUE WITH TECHNICAL REVIEW
☐ BILL & NO TECHNICAL REVIEW (EXPLAIN): _____

BILL AMOUNT

RECEIVED DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013

	AMOUNT
1.	
2.	
3.	$
TOTAL:	$

REVIEWER JRM

BILL DATE: ___/___/___ "DAY": _____

INITIALS

ANALYST: _____ DATE: ___/___/___ COMMENTS: _____

REVIEW: _____ DATE: ___/___/___ COMMENTS: _____

NOTES: _____

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

December 2012

Responsiveness Summary For Public Questions and Comments on the Revision to Construction Permit/PSD Approval 95010001 To Accommodate an Emission Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Source Identification No.: 119813AAI
Permit No.: 95010001

DECISION

On December 17, 2012, the Illinois Environmental Protection Agency (Illinois EPA) revised Permit 95010001, for United States Steel Corporation, Granite City Works (US Steel), to accommodate a planned emission reduction project for the two basic oxygen furnaces (BOFs) at this steel mill. In response to comments, the revised permit that has been issued, as compared to the draft of a revised permit prepared by the Illinois EPA, clarifies current compliance procedures for the BOFs, which will continue to apply while the new control system for the BOFs is being constructed. The issued permit also clarifies the compliance procedures that will apply after the new control system begins operation.

BACKGROUND

US Steel requested revisions to Construction Permit/PSD Approval 95010001, originally issued in 1996, to accommodate an emission reduction project for the two basic oxygen furnaces (BOFs). This project will involve the installation of a new control system with a filter or "baghouse" for secondary particulate emissions from the BOFs, i.e., the particulate emissions from charging and tapping of the BOFs. This new control system is the subject of an Agreement between US Steel and the Illinois EPA. The actual construction of this system is the subject of a separate application for a construction permit, Application 11050006, which is still pending with the Illinois EPA, Bureau of Air.[1]

Revisions to Permit 95010001 have been made to address certain operational requirements in this permit for the BOFs that will no longer be appropriate or possible when the new control system begins operation. The revisions to Permit 95010001 will also remove operational requirements for the BOFs that are now considered obsolete or outdated given new requirements that apply to the BOFs, notably new emission standards and associated operating requirements for BOFs adopted by USEPA. However, the revisions do not involve the emission limits for the BOFs that were originally set by Permit 95010001.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. Applications for air pollution control permits must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial review of US Steel's application for revisions to Permit 95010001, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a revised permit and prepared a draft of a revised version of Permit 95010001 for public review and comment. The comment period for the revised permit was combined with the comment period for a draft of a construction permit for the new baghouse control system, Application 11050006.

The public comment period began with the publication of a notice in the Granite City Press Record on May 30, 2012. The notice ran again in the Granite City Press Record on June 6th and 13th, 2012. A public hearing was held on July 18, 2012 at the Granite City Township office to receive oral comments and answer

[1] The construction permit application for the baghouse control system, Application 11050006, is being processed using "Integrated Processing." Accordingly, the construction permit for this system, if issued, would also authorize related changes to be made by administrative amendment to the Clean Air Act Permit Program (CAAPP) permit for the Granite City Works. (The Clean Air Act Permit Program (CAAPP) is Illinois' operating permit program pursuant to Title V of the federal Clean Air Act for major source of emissions and certain other sources of emissions.) In the draft of the construction permit for the baghouse control system that the Illinois EPA has prepared, the specific changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate this system would be identified in Part 2 of the that construction permit.

questions regarding the two applications and the two draft permits (the drafts of revised Permit 95010001 and new Construction Permit 11050006[2]). The comment period closed on August 17, 2012.

Following the close of the comment period, the Illinois EPA reviewed the oral comments that were made at the public hearing and the written comments that were submitted. This document was prepared to document this review of comments by the Illinois EPA to accompany the issuance of revised Permit 95010001. As related to US Steel's application for a construction permit for the new baghouse control system, which is still pending, when the Illinois EPA takes final action on that application, the Illinois EPA will prepare a separate responsiveness summary to accompany that action.[3]

AVAILABILITY OF DOCUMENTS

The revision of Permit 95010001 issued by the Illinois EPA and this responsiveness summary are available by internet, http://www.epa.state.il.us/public-notices/.[4] Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The Illinois EPA administers the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, for sources in Illinois pursuant to a delegation agreement with USEPA. When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's Procedures for Decision Making, 40 CFR Part 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the USEPA to review the issued PSD permit. In addition, any person who failed to file comments or failed to participate in the public comment period on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision. If comments were submitted on the draft PSD permit that requested changes in the permit, the PSD permit will not become effective until after the period for filing an appeal has passed. The federal procedures governing appeals of PSD permit are contained in the Code of Federal Regulations, "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19.

To accommodate an appeal of revised Permit 95010001 to USEPA, the revised permit does not immediately take effect upon issuance. The effectiveness of the permit is delayed to provide time for appeal of the permit to USEPA and, if such an appeal is filed, for the appropriate resolution of the appeal.

If an appeal will be submitted to USEPA for the revised permit by regular mail, it should be sent on a timely basis to the following address. If an appeal will be sent by a means other than regular mail, refer to the website of the USEPA's Environmental Appeals Board for instructions http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf).

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

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[2]The draft construction permit also identifies the related changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate the new baghouse control system.

[3]This responsiveness summary also addresses certain comments related to the draft construction permit that were made by the public at the public hearing. This has been done to respond to all comments from the public in this document.

[4]This information may also be available on the internet database that USEPA Region 5 maintains for certain air pollution control permits issued in Illinois, Illinois Permit Database, available at http://www.epa.gov/reg5oair/permits/ilonline.html.

Telephone: 202/233-0122

QUESTIONS AND COMMENTS WITH RESPONSES BY THE AGENCY

1. The new baghouse would control emissions from tapping and charging of the BOFs, but emissions from refining would continue to be controlled by the existing ESP. Is there a reason that the baghouse could not also control refining?

   The new baghouse system is not designed to control the refining or "primary emissions" of the BOFs because that is not the main target of the Agreement. The bulk of the improvement in control of particulate emissions that is sought is for the secondary emissions of the BOFs, i.e., emissions from charging and tapping of the BOFs. This is where the current control system on the BOFs may be greatly improved to obtain significant benefits for ambient air quality.

   Moreover, baghouses commonly are not considered suitable for control of the primary emissions of a BOF. If one attempted to use a baghouse to control these emissions, the high moisture level in the flue gas entering the baghouse would quickly blind the filter material, interfering with proper operation of the baghouse. The high moisture level is a consequence of the water sprays that are used to cool the flue gas before it enters the baghouse or other control device. This cooling is needed to both protect the control device from damage and, as the volume of flue gas is reduced by cooling, to facilitate effective control of emissions. Accordingly, the primary emissions of BOFs are controlled with ESPs or scrubbers.[5] In this case, primary emissions would continue to be controlled by the existing ESP. The performance of the existing ESP should be expected to improve significantly when it is no longer being relied upon for control of secondary emissions and can be operated for control of only primary emissions.[6]

2. While I am grateful that a baghouse system will be installed on the BOFs, could the system be better? It has taken many years to get to this point. As long as US Steel is installing a baghouse system for the BOFs, why not install the most protective one available, with the greatest emission reduction that can be made. It will be better for public health and perhaps the area can truly meet the National Ambient Air Quality Standards (NAAQS) for particulate matter.

   The Illinois EPA appreciates this sentiment. However, the planned project for the BOFs is appropriate. Secondary emissions from the BOFs will be controlled by a baghouse control system that is specifically designed for effective capture and control of secondary emissions, with greater capacity that the current hooding. This system will be connected to a large baghouse designed for control of secondary emissions, rather than being served by an ESP that must also control the primary emissions of the BOFs.

3. The baghouse at Gateway Energy, the new coke plant in Granite City, is required to remove 99.99 percent of the $PM_{2.5}$ emission. The baghouse proposed to be used for the BOP furnaces would only have 97 percent removal. Why won't the new baghouse for the BOFs be as good as the baghouse at Gateway Energy?

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[5]For example, the particulate emissions of the other BOFs in Illinois, at Mittal Steel, in Riverdale, in the Chicago area, is controlled by the combination of an ESP system for primary emissions and a baghouse system for secondary emissions.

[6]Accordingly, the Agreement appropriately provided for a new baghouse system for control of emissions from charging and tapping. The Agreement also sets a more stringent limit for the ESP, 0.01 gr/scf , compared to 0.02 gr/scf, However, it did not provide for a new control system be installed for refining emissions of the BOFs, replacing the existing ESP.

The main baghouse at Gateway Energy and the new baghouse planned for the BOFs at the Granite City Works should not be directly compared in the way that they have been in this comment. In fact, the proposed baghouse at US Steel would be subject to the same performance requirement for as the main baghouse at the existing Gateway Energy plant, i.e., a limit of 0.005 gr/scf for filterable particulate matter in the exhaust from the baghouse.[7]

The cited efficiency values for these baghouses actually address different aspects of the performance of these two control systems. As such, they do not provide a direct comparison of the two baghouses and do not indicate that the new baghouse for the BOFs would not be as "good" as the baghouse at Gateway Energy. For the Gateway baghouse, the efficiency value is actually a specification for the removal capability of the filter fabric, not the overall control efficiency of the baghouse. In contrast, the cited efficiency value for the new control system for the BOFs actually addresses the design control efficiency of the new baghouse for secondary emissions from the existing BOFs at the Granite City Works. As such, it considers the actual nature and loading of particulate matter in the stream that would be entering the baghouse. For baghouses, these are critical factors for the numerical value of control efficiency that is achieved by a baghouse when it is used in a particular application. Accordingly, the performance of filter-type control devices is more appropriately addressed, from a technical perspective, in terms of the outlet dust loading that is achievable or required. On this basis, the requirements for these two baghouses are identical.

4. USEPA has certified numerous filters for 99.99 percent removal efficiency for $PM_{2.5}$. According to the construction permit application, the proposed baghouse for the BOFs will have 97 percent removal efficiency for PM.

The Illinois EPA is not aware of any "filters," i.e., baghouses, that USEPA has certified for their removal efficiency. USEPA has certified various filtration materials for achievement of 99.99 percent removal for $PM_{2.5}$. These certifications are based on evaluations of samples of those materials made in a laboratory using a standardized analytical methodology. This methodology involves introducing a stream of particulate matter of uniform size at a constant rate to the sample of filter material that is being tested. As such, USEPA's certifications for filtration materials do not reflect the performance of the filtration fabrics in actual applications, much less the performance of entire baghouse systems. Accordingly, this comment does not provide meaningful data against which to compare the new baghouse control system for the BOFs.

Incidentally, it is expected that, in practice, the overall performance of the new baghouse will be better than 97 percent, which is a design specification for this device that was provided in the application.

5. Is this the best baghouse and filter available? Comparing the proposed baghouse to other baghouse units, will this be the best baghouse available? Are the full capabilities of the baghouse going to be used? Could the baghouse achieve a higher efficiency?

Since the new control system is an emission reduction project, a case-by-case review of the performance or the efficiency of the baghouse is not required by applicable rules. However, as reflected in the construction permit, the new baghouse control system must meet emission limits for particulate matter established by USEPA as Maximum Achievable Control

[7] Refer to Condition 4.1.5(a) of Construction Permit/PSD Approval 06070020.

Technology, under the Iron and Steel NESHAP, 40 CFR 63 Subpart FFFFF. As such, a modern baghouse is required.

6. If there is a baghouse control system or filter that would be more protective, that is what I want. I am thrilled about this project but I think of its cost. USEPA is going to set revised NAAQS for $PM_{2.5}$ and ambient air quality in Granite City is not going to meet them. It seems like this is the appropriate time to just get it done. Otherwise, it might not happen for a long time.

The Illinois EPA appreciates the desire to have the most efficient and protective baghouse control system for the BOFs. However, the planned project for the BOFs is a reasonable project that US Steel has committed to implement for control of secondary emissions. A modern capture system connected to a large baghouse will be installed, taking the place of the existing ESP for control of secondary emissions.[8]

7. The draft construction permit for the new baghouse control system would limit its emissions of particulate as particulate matter (PM) but not as PM_{10} or $PM_{2.5}$. For PM_{10} and $PM_{2.5}$, the permit would only require emissions testing followed by submission of a onetime report evaluating PM_{10} and $PM_{2.5}$ emissions with the new control system, presumably for purposes related to the state implementation plan. Why is there no ongoing accountability for PM_{10} and $PM_{2.5}$ emissions?

The permit addresses the particulate emissions of the BOFs in terms of PM because this currently is the most effective and practical way to address these emissions. This is also reason why the Agreement between US Steel and the Illinois EPA addressed the particulate emissions of the BOFs in terms of PM. This is possible because PM, PM_{10} and $PM_{2.5}$ are all different approaches to the measurement and quantification of particulate.[9] As a consequence, limits on the particulate emissions of an emission unit in terms of PM also act in practice to generally address and restrict the unit's emissions of PM_{10} and $PM_{2.5}$. In the simplest terms, a lower limit for particulate emissions in terms of PM, also results in lower emissions of particulate as PM_{10} and $PM_{2.5}$.

Currently, the most effective way to address control of particulate emissions from BOFs is as PM because this is how the particulate emissions of BOFs and their control systems have historically been addressed. There is a body of emission testing upon which to rely when making projections for the PM emission rates that are or will be achievable from BOFs with the use of certain control technology. A similar body of data does not exist for the control of emissions in terms of PM_{10} or $PM_{2.5}$. As a consequence, emission limits expressed in terms of PM can effectively be more stringent than limits expressed in terms of PM_{10} or $PM_{2.5}$. Since they have a better basis, they do not need to account for the high level of uncertainty that would need to be considered if limits were set in terms of PM_{10} or $PM_{2.5}$.[10] Emission limits in

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[8] There also have been significant improvements in ambient air quality in the Granite City area, with monitoring in recent years showing attainment of the present federal National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$.

[9] USEPA categorizes particulate as supercoarse, coarse, fine and ultra fine. Supercoarse particulate has an aerodynamic diameter of greater than 10 microns, coarse particulate has an aerodynamic diameter between 2.5 and 10 microns, fine particulate has an aerodynamic diameter between 2.5 and 0.1 microns, and ultrafine particulate has an aerodynamic diameter of 0.1 microns or less. PM_{10} is composed of coarse, fine, and ultrafine particulate. $PM_{2.5}$ is composed of fine and ultrafine particulate. As such, $PM_{2.5}$ is a subset or component of PM_{10}.

[10] For example, if $PM_{2.5}$ makes up approximately 20 percent of the particulate emissions of an emission unit after control, a limit of 0.005 gr/scf for PM is generally equivalent to a limit of 0.001 gr/scf for $PM_{2.5}$. (0.005 gr/scf x 0.20 = 0.001 gr/scf). In actual practice, when relying upon the relationship between different forms for particulate, one should consider the accuracy and reliability of the available data for particle size distribution (i.e., the percentage of the PM emissions that are of different sizes). The better the data for particle size distribution and the lower the variability in this data, the simpler and more consistent the relationship. For example, if the available data is only sufficient to indicate that between 10 and 30

terms of PM are also expected to be more effective because procedures for testing PM emissions have been used for decades and the conditions needed for accurate measurements are well understood. This is not the case for PM_{10} or $PM_{2.5}$.[11] This means that another source of uncertainty that would be present for limits in terms of PM_{10} or $PM_{2.5}$ is avoided when limits are set for PM.

In this case, limits in terms of PM are also more practical because the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, addresses particulate emissions from BOFs in terms of PM. Accordingly, the performance testing that is required pursuant to this NESHAP will also serve to address compliance with the permit limits for particulate. As such, compliance with particulate limits in terms of PM will be easier to implement.

Moreover, it should be apparent that the Agreement between US Steel and the Illinois EPA was made possible because it addresses particulate emissions in terms of PM, rather than $PM_{2.5}$. This enabled US Steel to make commitments for the emissions of the new baghouse control system that US Steel was confident could be met. It also minimized US Steel's burden for additional emissions testing that would not be required by the NESHAP. At the same time, limits for the new control system could still be set in the Agreement that should significantly reduce the secondary emissions of the BOFs, including emissions as $PM_{2.5}$.

8. Since there is a difference between $PM_{2.5}$ and PM_{10}, why would the draft construction permit for the new baghouse control system not set limits for $PM_{2.5}$.

As discussed, in this case, the difference between PM and $PM_{2.5}$ is not sufficient to support setting an emission limit in this construction permit in terms of $PM_{2.5}$. Reductions in the particulate emissions of the BOFs can be achieved with an emissions limit for the baghouse system that is in terms of PM.

9. How significant is it that the Agreement between US Steel and the Illinois EPA sets emission limits for particulate in terms of PM? Does this act to preclude the establishment of emissions limits in terms of $PM_{2.5}$ in the construction permit?

The Agreement does not directly preclude the establishment of limits for $PM_{2.5}$ in the construction permit for this emission reduction project. However, the approach taken to particulate emissions in the Agreement is significant as it is a reflection of the various considerations that culminated with an Agreement that addresses particulate emissions with limits that were expressed in terms of PM.

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percent of the PM emissions are $PM_{2.5}$ (i.e., 20 ± 10 percent), a limit for $PM_{2.5}$ based on a PM emission rate of 0.005 gr/scf would reasonably be set at 0.0015 gr/scf. To provide the necessary assurance that the limit can be complied with and is "achievable," the limit must be based on the upper bound for the fraction of PM that may be $PM_{2.5}$. In this example, this results in a $PM_{2.5}$ limit of 0.0015 gr/scf. (0.005 gr/scf x 0.30 = 0.0015 gr/scf).

Incidentally, if condensable particulate is present, another consideration for this relationship is the data that is available for emissions of condensable particulate. The relationship between emissions of PM, PM_{10} and $PM_{2.5}$ is most direct when condensable particulate is not a significant fraction of the particulate emissions, as is the case for the emissions of BOFs. The need for any of these considerations is avoided if limits for particulate can simply be set in terms of PM.

[11] For example, USEPA has not yet developed a reference method for testing emissions of filterable PM_{10} or $PM_{2.5}$ from "wet stacks." In a wet stack, moisture in the flue gas may lead to agglomeration of individual particles as they pass through the test apparatus. This prevents reliable and accurate measurements of PM_{10} or $PM_{2.5}$ emissions. The current test methods for filterable PM_{10} and/or $PM_{2.5}$ were developed for "dry stacks," where agglomeration is not a factor, and accordingly are only appropriate for testing of dry stacks.

10. Given that the purpose of the new baghouse control system is to reduce the $PM_{2.5}$ emissions of the BOFs, that the Granite City area is designated nonattainment for $PM_{2.5}$ and could well be nonattainment under revisions to the $PM_{2.5}$ NAAQS that USEPA has proposed, is there anything that prevents Illinois EPA from putting a $PM_{2.5}$ limit in the construction permit?

As discussed, a variety of considerations lead to a construction permit that addresses control of particulate emissions from the BOFs in terms of PM. Most significantly, a limit that addresses the particulate emissions of the BOFs in terms of PM also addresses emissions of $PM_{2.5}$, likely more effectively than if a limit were to be established in terms of $PM_{2.5}$. Accordingly, factors cited by this comment do not provide an adequate basis to set limits in terms of $PM_{2.5}$ in the construction permit for the new baghouse control system.

11. It seems that the draft construction permit for the baghouse control system has many provisions that are not in the Agreement. This suggests to me that the Illinois EPA chose not to put a $PM_{2.5}$ limit in that permit.

The draft construction permit would not set any emission limits that are not established by the Agreement or by applicable emission standards. The "other" provisions in this draft permit, which are broadly referred to by this comment, would deal with testing, operational monitoring, recordkeeping and reporting. These provisions would serve to verify ongoing compliance with the applicable emission limits. These provisions would also be needed to address the transition from the current requirements for testing, operational monitoring, recordkeeping and reporting to the new requirements that will apply with the baghouse control system. Finally, the permit would rely upon the general authority of the Illinois EPA to reasonably require sources to gather emission and emission related data. These provisions in the draft construction permit would be reasonable and appropriate, addressing aspects and implications of this emission reduction project that were not explicitly addressed in the Agreement. The presence of these provisions in the draft construction permit does not show that it would be appropriate for the construction permit for the baghouse system to set limits for $PM_{2.5}$ emissions.

12. Under what circumstances would the Illinois EPA set a $PM_{2.5}$ limit in a construction permit?

Construction permits issued by the Illinois EPA currently include limits for $PM_{2.5}$ emissions when federal or state "New Source Review" (NSR) rules necessitate such limits because of the nature and circumstances of the projects that are the subjects of the permits. The NSR rules do not provide a basis to set limits for emissions of $PM_{2.5}$ in the construction for the new baghouse control system for the BOFs. This is because this project will reduce the emissions of $PM_{2.5}$ from the BOFs.[12]

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[12] In general, construction permits currently set emission limits in terms of $PM_{2.5}$ for two types of projects relative to emissions of $PM_{2.5}$, "minor projects" and "major projects." For minor projects, which are far more common, construction permits set limits for $PM_{2.5}$ emissions as needed to address applicability of NSR. The limits for $PM_{2.5}$ emissions in these permits restrict emissions or the increases in emissions of $PM_{2.5}$ from a source or project to less than the emission thresholds at which the project would be considered major under the applicable NSR rules for its $PM_{2.5}$ emissions. However, since limits for PM emissions also serve to restrict emissions of $PM_{2.5}$, limits in terms of $PM_{2.5}$ are only set when limits in terms of PM or, in some cases, PM_{10} will also not be sufficient to address applicability of NSR rules to a project for $PM_{2.5}$ emissions.

For major projects for emissions of $PM_{2.5}$, which are far less common, NSR rules now generally require that the construction permits for such projects explicitly address $PM_{2.5}$ emissions, with limits that represent Best Available Control Technology or the Lowest Achievable Emission Rate that are in terms of $PM_{2.5}$ emissions.

The relevant emissions thresholds under the NSR rules that distinguish minor projects from major projects, i.e., major new sources and major modifications, are as follows:

13. Do any BOF shops at steel mills in the United States have limits for $PM_{2.5}$ emissions?

Given the current circumstances for control and regulation of $PM_{2.5}$ emissions, the Illinois EPA does not believe that any existing BOF shops in the United States, similar to this BOF shop, are subject to limits expressed in terms of $PM_{2.5}$ emissions.[13] In any case, it would not be an appropriate use of Illinois EPA resources to conduct a survey to definitively answer this question. This is because even if another existing BOF shop in the country is subject to limits for $PM_{2.5}$ emissions, it would not show that it is appropriate to include such limits in this construction permit. As already discussed, emissions of $PM_{2.5}$ can be addressed and restricted by limits for emissions of PM. This is because $PM_{2.5}$ is a component of PM so limits for PM emissions act in practice to also constrain $PM_{2.5}$ emissions.

14. There are gaps in the description of the new baghouse in the application for the new baghouse control system that make it difficult to evaluate the draft construction permit. On the general data and information form for the baghouse, the manufacturer and model number of the baghouse are shown as "to be determined." On the form for filter control equipment, the filter material is described simply as "polyester." The filtering area is also "to be determined." Inlet emission stream parameters, including mean particle diameter are unknown. Are there reasons why these details are not provided or were marked the way they were? Has Illinois EPA obtained any more information for the baghouse, such as the supplier, model number, or filter area or details concerning the operation of the baghouse?

The application contains the information that is currently available for the new control system. US Steel has not yet entered into a contract for this project and the new baghouse has not yet been designed.[14] The application is based on a preliminary or conceptual design that US Steel had prepared for the project, including the performance specifications that are to be met by the baghouse, i.e., a PM emission rate of no more than 0.005 grains/dry standard cubic foot. Given the cost of this project, US Steel will not enter into a contract for the baghouse until after this project is fully permitted. Only then will a firm be selected to provide the baghouse and the engineering design of this device be started.

15. Even though the draft construction permit would not set limits for emission of $PM_{2.5}$, it would require testing for emissions for $PM_{2.5}$, which I am not questioning. What use does the Illinois EPA plan to make of the results from this testing?

This testing would identify the specific relationship between the emissions of PM, PM_{10} and $PM_{2.5}$ from the BOFs. As such, $PM_{2.5}$ emission data gathered by this testing would improve the data used in future air quality modeling that is conducted for the Granite City area or the St. Louis region for $PM_{2.5}$ air quality. If found to be necessary for the attainment of the NAAQS for $PM_{2.5}$, including attainment of the anticipated future revisions to the $PM_{2.5}$

Thresholds for a major source:
Federal PSD rules, 40 CFR 52.21 - Either 100 or 250 tons/year, depending on the category of source
State nonattainment NSR rules, 35 IAC Part 203 – 100 tons/year
Threshold for a major modification for emissions of $PM_{2.5}$ - 10 tons/year

[13] It is expected that only BOFs that recently underwent permitting for proposed modifications, if any, will be subject to limits that address emissions of $PM_{2.5}$. Such limits would be a consequence of the New Source Review rules that apply to modifications and, even if technically sound, would not provide any insight as to an appropriate limit for these BOFs as they are not being modified.

[14] Due its size and other project-specific considerations, the baghouse for this project will be designed by the selected manufacturer specifically for the project. The baghouse will not be a stock model of baghouse.

NAAQS by USEPA, the data gathered by this testing could assist in development of new standards for the BOFs, either in terms of PM, PM_{10} or $PM_{2.5}$ emissions, as appropriate.[15] Finally, the data gathered by these tests would support future permitting in Illinois and in other states in circumstances in which NSR rules do require that limits be set for particulate emissions as $PM_{2.5}$.[16]

16. Condition 3-1(b)(ii) of the draft construction permit, as it addresses the required testing for emissions of filterable PM_{10} and $PM_{2.5}$, should not specify that this testing must be conducted with USEPA Method 201 or 201A. Rather, use of only Method 201A should be specified. This is because Method 201 only measures PM_{10} emissions, whereas Method 201 can be used for measurements of both PM_{10} and $PM_{2.5}$.

The error in the draft permit identified by this comment will be corrected in any construction permit that is issued. That is, the measurements of PM_{10} and $PM_{2.5}$ emissions that are required must be made using USEPA Method 201A.

17. Condition 3-1 (e)(iii) of the Draft Construction Permit would require the final report for emission testing that is submited to the Illinois EPA to contain the operating parameter limits for the new baghouse control system that are proposed by US Steel based on such testing. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what are the procedure and the timeframe in which Illinois EPA reviews and establishes them?

The provisions of the Iron and Steel NESHAP, including 40 CFR 63.9(h)(2)(ii), 63.7790(b)(1), 63.7800(b)(3) and 63.7824(a) and (c), govern the operating parameters limits for the BOFs with baghouse control system, which are addressed by this comment. This NESHAP does not provide for approval of a source's proposed operating parameters limits by a permitting authority. Rather the limits that are established for operating parameters under this NESHAP are the levels of operating parameters during performance testing. These levels are contained or documented in the current Operating and Maintenance Plan for a subject facility which the source must maintain pursuant to this NESHAP, which plan specifies how the subject facility must be operated.[17]

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[15] It should not be expected that this testing would ever be used to demonstrate compliance with standards or limits for $PM_{2.5}$ emissions, as there would not be any limits in terms of $PM_{2.5}$ emissions when this testing is conducted.

[16] US Steel would also use the results of this testing in preparing the "performance report" required for this project by Condition 6(d) of the construction permit. In this report, US Steel must evaluate the reduction in emissions that is achieved by this project for emissions of particulate as $PM_{2.5}$.

[17] In this case, to revise or set new operating parameter limits for the capture system on the BOFs under the Iron and Steel NESHAP, US Steel must first submit a written notification or request to the Illinois EPA to conduct performance tests that would be the basis of the new operating parameters limits. In this case, this notification would address the "initial performance test" conducted for the BOFs with the new baghouse control system. It is expected that this notification would also address the initial operation of the BOFs with the baghouse system, until the performance tests are conducted. During this period, the current limits for operating parameters of the capture system, with control of secondary emissions with the existing ESP, would no longer be applicable but testing will not yet have been conducted to demonstrate the adequacy of the new limits for operating parameters with the baghouse system. In conjunction with US Steel's written notification for planned testing, subject to any directives from the Illinois EPA in response to this notification, US Steel must also revise its operation and maintenance plan under the NESHAP. This revision would need to address the levels of operating parameters during the initial operation of the BOFs with the baghouse, consistent with US Steel's description of operation during this period as provided in the written notification for testing.

The next step in setting new operating parameter limits is for performance tests to be conducted for the BOFs to demonstrate the adequacy of the new limits. These performance tests would be conducted with the new baghouse control system operating at the levels of operating parameters that US Steel seeks to establish as the new limits. Following the date

18. Condition 3-2(a) of the draft construction permit would require US Steel to make measurements in order to determine the PM efficiency of the new baghouse. The condition would allow for these measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

These measurements, which would relate to the efficiency of the new baghouse control system,[18] are being required to obtain information on the amount of PM collected by this system. This information is of interest to the Illinois EPA as related to the overall reduction in particulate emissions of the BOFs that is achieved in actual practice by this new system.[19] The required measurements are not needed to confirm compliance with an applicable limit or control requirement. As such, it is reasonable and appropriate for the construction permit to provide flexibility in the approach that US Steel uses for these measurements. At this time, this is especially true, as neither approach to measurements is preferred. Direct measurements of the PM loading into the baghouse would be expected to be more precise and correlate directly with measurements of emissions. However, these measurements would be taken over a relatively short period of time so would not necessarily be more accurate than indirect measurements, based on the amount of particulate collected by this system over a week or month. Indirect measurements would likely be more accurate as they address a longer period of operation of the BOFs. However, they would be less precise, as much larger amounts of material would be involved. As such, there is not a clear preference for the approach that should be taken to the measurements.

19. Currently with the ESP, the PM emissions of the BOP furnaces are reported to be 439.5 tons/year. With the new baghouse system, they would be 405.4, which boggles my mind.

The emission data cited by this comment, which was provided by US Steel for the application for a construction permit, is a very conservative evaluation of the change in emissions that would accompany this project. It reflects maximum operation of the BOFs, at their annual capacity, and a minimum level of improvement in control of emissions by the new baghouse system. Accordingly, this data overstates both current emissions and future emissions. A better assessment for the change in emissions is provided later, in response to another comment.

20. For certain conditions that are rendered "unnecessary" only after the new baghouse control system becomes operational,[20] revised Permit 95010001 should specify that the current conditions remain

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of testing, US Steel would be expected to continue to operate at or above the levels of parameters present during testing if testing demonstrated compliance while operating at those levels.

The final step in the process of setting new operating parameter limits is US Steel's submittal to the Illinois EPA of the report for this testing, with the new values for these limits. With this report, US Steel must also certify that the BOFs operated at these values of operating parameters during testing and that the testing was properly conducted for the purpose of setting new limits for operating parameters. As part of this step, US Steel must also revise its operating and maintenance plan to reflect that these new limits for operating parameters are applicable on a continuing basis.

[18]The efficiency of a baghouse, in percent, is calculated as follows:

100 x |1 – (Inlet Mass – Outlet Mass)/Outlet Mass| = Percent Control Efficiency

[19]Based on public comments, this information is also of concern to the public as it would support comparison between the new baghouse control system and baghouse systems at other sources.

[20]The Project Summary indicates that the following conditions that are proposed for deletion would be rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e)

in effect until the new baghouse becomes operational. This would ensure that the source continues to demonstrate compliance with permit limits in the manner currently provided while the baghouse is being constructed, until the time that the new baghouse becomes operational.

Revised Permit 95010001, as issued by the Illinois EPA, includes the provision suggested by this comment (new Condition 11(b)). This condition explicitly requires that the source continue to comply with certain conditions or requirements of the previous permit during the period until the new baghouse control system becomes operational.[21] The draft of the revised permit would have relied on the fact that these requirements, which will continue in effect until the new control system begins operation, are also contained in the Clean Air Act Permit Program (CAAPP) permit for the source.[22] However, the continued applicability of these requirements until the new system begins operation can also be explicitly provided for in the revised permit.

The approach that is now being taken in revised permit has added further complexity to the permit. Since the revised permit now provides for compliance with existing requirements while the baghouse control system is being constructed, the various conditions that contain these requirements must be appropriately carried over in the revised permit. In particular, minor technical corrections and updates must also be made to the requirements for continuous operational monitoring for stack gas flow rate and waste gas suction (former Conditions 12 and 13, revised Condition 12), which would not have been needed if these requirements had not been carried over in the revised permit. In particular, in the revised permit, these requirements must reflect developments in permit requirements for monitoring systems, with similar requirements set for both systems and provision for use of computerized systems for recording of data.[23]

21. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: Conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP)),[24] and Condition 10 and Attachment A (procedures to ensure proper operation of the ESP for the BOFs). The Illinois EPA states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and the federal National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, pages 1 - 3. The key element of this rationale is that

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(recordkeeping for ESP flow rates for charging and tapping), 13(a), (c) and (d) (monitoring for waste gas suction, measured as static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, pages 3 - 6.

[21]**New Condition 11(b) also addresses the possibility that the baghouse control system that is now planned does not go forward but another emission reduction project with a control system for secondary emissions from the BOF would occur in the future. This condition generally provides that the subject requirements in the original permit remain in effect until either the new baghouse control system that is now planned begins operation or another control system for secondary emissions begins operation. This is because any other new control system for secondary emissions would present similar issues as the planned baghouse system, making the subject requirements that were originally established in 1995 in Permit 95010001 unnecessary.**

[22]**The changes to the CAAPP permit for the source that are planned to address the new baghouse control system would maintain the effectiveness of the subject conditions until this new control system becomes operational.**

[23]**In addition, former Condition 12(c) improperly suggested that emissions testing to evaluate alternative set points for the capture system would have to be conducted at the established set points. This would paradoxically mean that testing to evaluate alternative set points would not actually be possible, since such testing would have to conducted at the established set points.**

[24]Condition 9(a) of the current permit requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using USEPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

the monitoring provisions of the Iron and Steel NESHAP are sufficient to assure compliance with the relevant permit limits as originally established. Accordingly, the permit should clearly establish a connection between the permit and the Iron and Steel NESHAP. Such a connection could be made by including conditions in the permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant permit limits. (This information would then be appropriately re-iterated in the CAAPP permit.) This is of concern because the CAAPP permit should not be used to supersede, replace, or otherwise eliminate the independent enforceability of the terms and conditions in the PSD permit.[25]

In place of the current compliance provisions in Permit 95010001 that would be rendered inappropriate or unnecessary with the new baghouse control system,[26] the revised permit that has been issued includes a condition, as requested by this comment, requiring that the source comply with all applicable compliance requirements of the Iron and Steel NESHAP for the BOFs, including operation, maintenance, testing, monitoring and recordkeeping requirements. (See Condition 9 in the revised permit.[27]) When the new baghouse control system begins operation and starts to control particulate emissions from charging and tapping of the BOFs, the requirements of the Iron and Steel NESHAP will take the place of the compliance provisions in Condition 9 of the former permit, which will no longer apply. The requirement of the Iron and Steel NESHAP, 40 CFR 63.7800(b), related to an operations and maintenance plan, will immediately take the place of the requirements in former Condition 10 of the former permit.[28] As a consequence, the revisions that have been made to Permit 95010001 would maintain the "independent enforceability" of this permit.[29]

22. The revised PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the permit rather than to the related conditions of the CAAPP permit that address the provisions of the NESHAP. As a construction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

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[25] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO. May 20, 1999. Available at http://www.epa.gov/ttn/caaa/t5/memoranda/hodan7.pdf.

[26] **As already been discussed, operational and monitoring requirements that will be rendered inappropriate with the new control system have not necessarily been physically removed from revised Permit 95010001. Rather, to maintain continuity of requirements in the revised permit itself, the subject requirements are physically present in the revised permit but will cease to be effective when the new baghouse control system begins operation.**

[27] **New Condition 9 in Permit 95010001 broadly requires that the source comply with applicable requirements of the Iron and Steel NESHAP for BOFs, without specifying the particular requirements that are applicable. This is sufficient as the Iron and Steel NESHAP is a federal regulation, codified in the Code of Federal Regulations, and is directly enforceable. In addition, relevant requirements of this regulation as applicable to the source are recapitulated in the CAAPP permit for the source. This also avoids the need for future revisions to Permit 95010001 as might be needed if the Iron and Steel NESHAP is revised in the future by USEPA. (Based on the Information Collection Requests made by USEPA in 2011 for the steel industry, it is anticipated that USEPA will be making revisions to this NESHAP.)**

[28] **As explained in the Project Summary, the specific requirements for operation of the control system for the BOFs in Attachment A are already outdated and obsolete. The Iron and Steel NESHAP generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e)(1)(i) and 63.7800(a).) The Iron and Steel NESHAP, 40 CFR 63.7800(b), now further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, the requirements for proper operation of the BOFs and ESP system should not be set in the level of detail specified by Attachment A in the former permit.**

[29] **It is noteworthy that the guidance from USEPA cited by this comment does not directly apply to the current action. The cited guidance addressed actions that may be taken in a Title V permit. In the present action, the Illinois EPA has issued a revised construction permit, taking a permitting action under Title I of the Clean Air Act, not an action under Title V of the Clean Air Act.**

The revised permit, as issued, would maintain the independent enforceability of the PSD permit. As discussed above, when the new baghouse control system begins operation, the relevant provisions of the NESHAP would serve in place of the compliance procedures of the current PSD permit that address control of particulate, with procedures that are equal to or better than that provided by the original PSD permit. For example, monitoring of gas flow rates in the duct work would serve in place of operational monitoring of stack flow rate. Operational practices that would be documented in an operation and maintenance plan, which would evolve in response to improvements and other changes in those practices, would serve in place of the operational practices for the ESP that are specifically identifies in the original PSD permit, many of which are already outdated.[30]

23. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 CFR 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at page 8. Clarification is needed to ascertain the actual amount of the projected overall emissions reduction due to the project.

The Illinois EPA does not believe that the information requested by this comment, which relates to the planned issuance of a construction permit for the new baghouse control system, is needed to support that proposed action. This is because an essential element of a modification under New Source Review is that a proposed project would act to increase emissions of one or more pollutants that are regulated under New Source Review. As discussed, the proposed baghouse system would be an emission reduction project for particulate emissions of the BOFs and would be carried out to meet provisions of the Agreement. The new baghouse system would not increase the capacity or efficiency of the BOFs. There also would not be any collateral increases in emissions of other, non-target pollutants from the operation of the system. As such, the new baghouse system should not be considered a modification for purposes of New Source Review.[31]

Even though the reduction in particulate emissions need not be quantified in response to this comment, the Illinois EPA has further examined the amount of the emissions reduction that may be assumed for this project. This evaluation has been conducted in terms of emissions of PM_{10} because underlying emission data is more reliable for PM_{10} than for $PM_{2.5}$. For purposes of PSD, 40 CFR 52.21, the historic actual emissions of the BOFs are appropriately assumed to be on the order of 314 tons of PM_{10} per year.[32] The future emissions of projected future actual emissions should be expected to be at most about 260 tons of PM_{10} per year.[33] This yields a reduction of approximately 54 tons of PM_{10} per year.

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[30]The revised PSD permit would not attempt to make other enhancements to the PSD permit, as might be needed to address deficiencies in the compliance procedures in the original PSD permit. As confirmed by the guidance from USEPA cited by this commenter, those enhancements are appropriately made in the CAAPP permit for the source as part of the process of establishing appropriate periodic monitoring for the source.

[31]For example, refer to correspondence from USEPA concerning a proposed improvement of particulate matter control at Lehigh Portland Cement in Mitchell, Indiana (Letter, February 12, 2001, Pamela Blakley, USEPA Region 5, Air Programs Branch, to Paul Dubenetzky, Office of Air Management, Indiana Department of Environmental Management.)

[32]The average of the PM_{10} emissions reported by US Steel in its Annual Emission Reports for the peak years of production during the last ten years, 2004 and 2005, is 313.90 tons per year. In each of these years, the BOFs operated at about 72 percent of their permitted annual rate.

[33]The future emissions were conservatively calculated assuming that the BOFs would actually operate near their permitted annual rate compared to the maximum rate that US Steel has achieved in practice, i.e., 90 percent compared to 75 percent. To account for the normal operation of control devices, the baghouse and ESP were also conservatively assumed to comply with applicable emission standards under the new control configuration by 40 and 20 percent respectively. For example,

24. Condition 8 of Permit 95010001, which limits the opacity of emissions from the BOF shop to 20 percent, would be revised to require compliance with this limit using the procedures in 35 IAC 212.446(c) instead of the procedures prescribed by previous Conditions 9(a) and (b). The permit record does not indicate that Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). Condition 8 in the current permit appears to be more stringent than in the draft of the revised permit since Conditions 9(a) and 9(b) of the current permit requires opacity observations to be conducted on at least a weekly basis. Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

The changes to the permit addressed by this comment do not act to relax the stringency of the opacity standard for the BOF shop, as suggested by this comment. Rather these changes involve either changes to the compliance procedures that accompany this standard that are appropriate to address the installation of the new baghouse control system[34] or are straightforward clarifications or corrections to technical elements of those compliance procedures.

Former Condition 9(a) dealt with opacity observations that the source was required to conduct for the BOF shop to verify compliance with the established opacity standard for the BOF shop, 20 percent. The source was required to conduct these observations at least weekly. The source of emissions (opacity) from the BOF shop is secondary emissions from the BOFs that are not captured. Former Condition 9(a) set a frequency for these opacity observations by the source for a BOF shop in which the BOFs did not have a separate control system for their secondary emissions. However, when secondary emissions of the BOFs are controlled with the new baghouse control system, weekly observations of opacity from the BOF shop by the source should not be needed. The new baghouse control system, with its improved capture hooding and baghouse, will control secondary emissions more effectively than the current control system, which uses one ESP for control of both primary and secondary emissions. In this regard, the Iron and Steel NESHAP does not require any observations for the opacity of emissions from a BOF shop by a source other than observations made in conjunction with periodic testing of stack emissions of particulate matter. Rather, this NESHAP appropriately relies on continuous operational monitoring for the capture system for secondary emissions from BOFs to address continuous compliance with an opacity standard of 20 percent, 3-minute average. This NESHAP provides appropriate base compliance procedures for this permit recognizing that the control measures used on the BOFs may improve over time, as will be addressed in future construction permits and in the CAAPP/Title V operating permits for the source.[35]

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rather than having emissions of 31.9 pounds per hour (745,200 scfm/min x 60 min/hr ÷ 7,000), on annual basis, actual PM_{10} emissions would be 19.2 pounds/hr (31.9 x {1.0 - 0.4} = 19.14 pounds/hour).

[34]The stringency of this opacity limit is unaffected by the revision of the permit. The limit continues to apply at all times. The source is not excused from an obligation to conduct opacity observations as needed in practice to confirm compliance with this limit. Compliance can also be independently determined by observations by members of the Illinois EPA staff that are certified opacity observers.

[35]Under the CAAPP program, the compliance procedures that are appropriate for the current configuration of emission units and control(s) at a source must be addressed each time that the CAAPP permit for the source is renewed. This is because CAAPP permits must provide for Periodic Monitoring.

The procedures by which opacity observations are to be made for the BOF shop was addressed by former Condition 9(c), not former Condition 9(b).[36] The removal of former Condition 9(c) from the permit does not affect the stringency of the opacity limit. This is because Condition 8 now cites 35 IAC 201.446(c), the state standard that limits opacity from the BOF shop to 20 percent. Like former Condition 9(c), 35 IAC 212.446(c) provides that compliance with the 20 percent opacity limit is to be determined using USEPA Method 9. Unlike former Condition 9(c), 35 IAC 212.446(c) also further provides that "compliance shall be determined by averaging any 12 consecutive observations taken at 15 second intervals." This is a necessary clarification as Method 9 would otherwise provide that compliance with the opacity limit is to be determined as a 6 minute average, based on 24 individual observations.[37]

25. In a separate permit application, US Steel has applied for a construction permit for an emissions reduction project that involves a new baghouse control system for secondary emissions of the BOFs. Because operation of this new control system will render certain requirement of existing Permit 95010001 obsolete, US Steel requested that this permit be revised to remove those obsolete conditions and the Illinois EPA has granted this request. In order to denote where conditions have been removed, the draft of revised Permit 95010001 would have included explanatory notes identifying where conditions had been removed. For consistency, a note should also be included after Condition 18 in the revised permit stating that the "note" that previously accompanied this condition has been removed from the permit.

Revised Permit 95010001 includes the explanatory note requested by this comment. The purpose of the various explanatory notes that have been included in the revised permit is generally to avoid possible future confusion. Most importantly, they enable a person who is referring to the revised permit to understand why the conditions in the permit are not numbered consecutively and there are gaps in the numbering.[38] The change requested by this comment could also serve to avoid possible future confusion. It would make clear that

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[36] Former Condition 9(b) dealt with actions to be taken in the event of an outage of the continuous opacity monitoring system on the ESP. At this time, that condition is considered obsolete as it "contemplated" and directly provided for an interruption in the operation of the continuous opacity monitoring system on the ESP. Given the reliability of opacity monitors, it is not reasonable to expect such outages to now be a normal occurrence. Accordingly, any outages of the opacity monitoring system that would occur should be addressed in the context of potential enforcement. It should not be "condoned" as such outages have been contemplated and addressed by a condition in a permit that specifies the consequences that accompany any such outage. This is particularly true now that this opacity monitoring system for the ESP is required by the Iron and Steel NESHAP, as well as being implicitly required by this permit.
Moreover, former Condition 9(b) was also flawed as it indicated that in the event of monitor outage, human observations of opacity from the ESP stack were to be conducted during "any normal work day (i.e., Monday through Friday)." In the event of such outages, the timing of such observations should be a matter that is determined on an event-specific basis. For example, if an upset of the ESP occurred during an outage of the opacity monitor, it could well be appropriate for the source to immediately arrange for opacity observations to be made even if the event occurred on a Saturday or Sunday.

[37] Incidentally, the 20 percent opacity limit for the BOF shop in 35 IAC 212.446(c) should "be expected" to be identical to the 20 percent opacity limit in Condition 8, as set in Permit 95010001 in 1995. This is because 35 IAC 212.446(c) was subsequently adopted to codify the 20 percent opacity limit for the BOF shop set by the permit as part of Illinois' State Implementation Plan (SIP). The 20 percent opacity for the BOF shop is more stringent than the 30 percent opacity limit that would otherwise apply pursuant to 35 IAC 212.123.

[38] The preferred practice of the Illinois EPA when issuing revised construction permits is to retain the numbering of conditions from the previous permit as this can be practically and reasonably accomplished. This maintains continuity in the numbering of conditions between the old and new versions of a permit. It minimizes possible confusion that might occur if the conditions in a permit were simply renumbered when a revision adds or removes conditions from the permit.
In the absence of the explanatory notes that have been included in the revised permit, someone who was referring to the revised permit would be uncertain whether they were reviewing a complete copy of the permit or whether certain conditions had been in some way omitted from the particular copy of the permit.

the previous note, which provided a definition of a "BOF cycle," was intentionally removed in the revised permit.[39] Accordingly, the change requested by this commenter was made.

26. I appreciate the potential air quality benefits of this project and the work that US Steel and the Illinois EPA and have done for this project.

This comment, which does not request any changes to the draft permits, is acknowledged.

27. In the Project Summary for the revisions to Permit 95010001, the procedures that are being used to process this application are addressed in Footnote 13, which provides in relevant part:

> This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable.

In an effort to avoid any further delay in the issuance of a construction permit for the baghouse control system (Permit 11050006), US Steel agreed to a public comment period for the revisions to Permit 95010001. However, this should not be viewed as precedent for processing these type of administrative changes to a PSD permit, where the changes result in no increase in emissions and have no adverse impact on air quality.

The Illinois EPA agrees with the general observation made by this comment. The approach taken by the Illinois EPA in the processing of the revisions to Permit 95010001 should not be taken as a general precedent precluding the processing of revisions to PSD permits by administrative amendment, whereby certain revisions to PSD permits may be directly made by the permitting authority without a public comment period. Rather, the procedural approach that was taken for the revisions to Permit 95010001 reflects a narrow finding by the Illinois EPA for the appropriate procedures for this permitting action, considering the entirety of the circumstances for this action.[40]

28. The proposed revisions to Permit 95010001 are administrative in nature and are not required to be subject to a public comment period. Illinois EPA, on its own, could have administratively amended Permit 95010001 without a public comment period.

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[39] The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle n the permit. It is inconsistent with the related definition for steel production cycle that USEPA adopted in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

[40] Moreover, as the changes to Permit 95010001 involve emissions of particulate, it is debatable whether changes have even been made to a "PSD permit." The changes do not involve "PSD review requirements," e.g., Best Available Control Technology (BACT), because the project addressed by this permit was not a major modification for emissions of particulate. However, the Illinois EPA chose to proceed as if the entirety of Permit 95010001 is a PSD permit. As discussed, this should preclude any future question whether the procedures used for this revision of Permit 95010001 were adequate and sufficient, thereby assuring that the revised permit is legally authorized and the outdated provisions of the previous version of this permit are no longer applicable.

As observed by this comment, the Illinois EPA could arguably have elected to revise Permit 95010001 by administrative amendment. However, this was not the approach that the Illinois EPA elected to take. Based on the nature of the requested revisions and the various surrounding circumstances, the Illinois EPA found that a public comment period was warranted before the permit was revised. Accordingly, the Illinois EPA prepared a draft of the revised permit. In response to the comments that were received on the draft permit, the revised permit that has now been issued differs from the draft permit in a number of respects, as has already been discussed.

29. USEPA developed a draft of guidance addressing the procedures for processing modifications of PSD permits, Revised Draft Policy on Permit Modifications and Extensions, USEPA, July 5, 1985 (Draft Guidance). Although this guidance was never finalized, it still provides direction on the appropriate procedures to be used for different categories of modifications to PSD permits. In this guidance, USEPA categorized proposed changes to PSD permits as administrative, minor, significant, or fundamental, based on the significance of the proposed changes and the extent of review that the permitting authority must conduct.[41] Of particular relevance for this action, is the guidance that is provided for proposed modifications to PSD permits that are categorized as administrative changes.[42, 43] In this regard, this guidance provided:

> Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emission or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decision originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or trading, must be carefully documented) and minor work clarifications. ...
>
> The lack of emissions and impact increases for amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to PSD permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in

[41]The categorization of proposed changes also considers whether the source or project is operating. USEPA explained that the guidance typically imposes a less rigorous process for changes at operating units because, among other factors, "a project in its earlier phases is much more flexible than one already operating."

[42]In the Draft Guidance, USEPA characterizes minor changes as entailing changes to applications or issued permits and a certain amount of additional review by the permitting authority, but not constituting either a fundamental or significant change. Emissions or impacts increase as a result of minor changes but not above the significance level.

Significant and fundamental changes were characterized as increasing emissions above significance levels and/or changing the basic nature of an emissions source.

Minor, significant, and fundamental changes to PSD permits are collectively described as revisions of PSD permits, as distinguished administrative amendments of PSD permits. For revisions of permits, unlike administrative amendments, the Draft Guidance would require public participation prior to issuance of any revised permit. Draft Guidance, page 15.

[43]In this case, these changes to Permit 95010001 would not constitute "revisions," as these changes do not address changes in the method of operation or result in a net significant emissions increase. Because the changes would not constitute revisions, a public comment period was not needed for these proposed changes to Permit 95010001.

> highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company are operated. See Draft Guidance, page 11.

Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The changes will not increase emissions and do not involve any fundamental changes at the source. Very little review and no reanalysis of the original PSD permit application was needed. The changes also would not adversely impact air quality or change regulatory requirements.

Based on the Draft Guidance, it was clearly reasonable and appropriate for the Illinois EPA to have provided for public participation on the proposed changes to Permit 95010001. This is because, as stated in the passage from the Draft Guidance cited by this comment, this guidance directs permitting authorities to provide for public participation on administrative amendments to PSD permits in instances where the proposed changes are sufficiently important to necessitate public participation.[44] Given both the nature of the proposed changes and the public interest in this source, the Illinois EPA reasonably found that this was the case.

The project is "important" as it relates to a significant improvement in control of particulate emissions in an area that is designated nonattainment for $PM_{2.5}$. This improvement will be the result of the Agreement between the Illinois EPA and US Steel While the overall objective in revising Permit 95010001 is simple, to accommodate this improvement, implementation has required consideration of a variety of changes to a number of conditions in the previous permit. The actual nature and reason for the various changes to affected conditions was not necessarily readily apparent or obvious.[45] This permitting action must also appropriately consider and be coordinated with the processing of the construction permit for the new baghouse control system and the CAAPP permit that has been issued for the Granite City Works. Because of this complexity, it was reasonable to provide a public comment period on this proposed action.

It is also unquestioned that the Granite City Works has historically been of interest to the public, as demonstrated by the interest in other recent permitting actions for this source.[46] This further supports the decision of the Illinois EPA to provide a public comment period on a draft of the planned revisions to Permit 95010001. Moreover, a public comment period is mandatory for the application for construction permit for the new baghouse control system,

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[44] As noted by this comment, the Draft Guidance provides that there may be instances "where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary." The example given for a case where public participation may be justified for an administrative amendment is a change in ownership of a "proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company were operated." Draft Guidance, page 11.

[45] The current changes to Permit 95010001 required the Illinois EPA to again, consider the requirements that were applicable to the BOFs in light of both the existing ESP and the new baghouse. In particular, the Illinois EPA had to evaluate the removal of operational requirements that had become outdated or would become infeasible with the new baghouse control system. The Illinois EPA's review also considered the removal of operational requirements for the BOFs that had been made obsolete by new regulatory requirements that now apply.

[46] Indeed, USEPA recently acted on a petition from the American Bottom Conservancy for USEPA review of the CAAPP permit for this source issued by the Illinois EPA. In its decision, *Order Granting in Part and Denying in Part Petition for Objection to Permit*, December 3, 2012, USEPA granted the petition in part and the Illinois EPA will in the future be appropriately responding to USEPA's Order.

Application 11050006.[47] Because the public comment period for processing the revision to Permit 95010001 was combined with the public comment period for Application 11050006, it should not significantly affect the overall timing for permitting of the new baghouse control system.

30. USEPA has issued administrative amendments to PSD permits without providing for public participation.[48]

The fact USEPA has made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the specific circumstances of this action. As already explained, the Illinois EPA's decision to hold a public comment period considered the entirety of circumstances for this requested permit revision.[49]

31. State and local permitting authorities have also approved administrative amendments to PSD permits.[50, 51]

The fact that state and local permitting authorities may have made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the particular circumstances in this case.[52]

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[47] **A public comment period is mandatory on the application for the construction permit for the new baghouse control system as part of the Integrated Processing of that application, whereby the construction permit that is issued would authorize certain changes to the CAAPP permit for the Granite City Works by administrative amendment.**

[48] For example, in 2008, Hovensa requested the removal of provisions for rolling averages from the CO emission limits for certain emission units in its PSD permit, since continuous emissions monitoring was not required, making rolling averages impractical. USEPA agreed with Hovensa, concluding that "there is no benefit in requiring compliance based on rolling averages." USEPA revised the PSD permit accordingly, further explaining "...these requested changes will not result in any increase in emissions or cause any adverse air quality impacts. Therefore, EPA is approving these revisions administratively." (Letter to K. Antoine, Environmental Director, Hovensa, LLC, from B. Finazzo, Director, Division of Environmental Planning and Protection, USEPA, Region II, October 13, 2008.)

[49] **Incidentally, the changes to the PSD permit for the Hovensa facility, which was cited in this comment, merely entailed the removal of provisions for 365-day rolling averaging from the CO limits for certain units at this facility. As such, the nature and effect of these changes is readily apparent. Without annual averaging, the stringency of the CO limits was, in fact, increased, with compliance with limits now required on a short-term basis, rather than on a long-term basis.**

[50] For example, a Nebraska facility obtained an administrative amendment to its PSD permit to extend compliance dates for new control equipment. In issuing this administrative amendment, the Nebraska Department of Environmental Quality (NDEQ) stated, "[t]he emissions and regulatory requirements for this facility will not change due to this modification." (Administrative Amendment to Prevention of Significant Deterioration Construction Permit for Abengoa Bioenergy Corporation, Nebraska Department of Environmental Quality, January 21, 2004.)

[51] In March 2012, in its Permit Evaluation and Statement of Basis for Minor Revision to the Major Facility Review Permit for Los Medanos Energy Center, LLC, Facility No. B1866, the Bay Area Air Quality Management District (BAAQMD) referenced USEPA's Draft Guidance, explaining that the change to the PSD permit for the Medanos Energy Center was considered administrative. In particular, on page 6 and 7 of this document, the BAAQMD stated, "The facility received an Authority to Construct and a PSD permit on 9/10/99. ... The changes to the changes in clearances in the compressor section, installation of the dry Low NOx combustors, and change out of the exhaust gas path components are considered an administrative change under the 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The scope of these changes will not increase permitted emissions of any PSD pollutants (e.g. NO_x, CO, PM_{10}, $PM_{2.5}$, VOC, Lead, Fluorides, Sulfuric Acid Mist, Hydrogen Sulfide, Total Reduced Sulfur) and will not require any changes to permit conditions established during the original PSD permitting action. PSD does not apply to this permitting action."

[52] **Incidentally, with respect to the permitting action by the NDEQ cited by this comment, the Illinois EPA could not find an "administrative amendment" issued to Abengoa Bioenergy on January 21, 2004 that extended certain compliance dates in**

32. In the Project Summary, Footnote 13, the Illinois EPA stated that the changes to Permit 95010001 are being processing separately from the processing of the baghouse construction permit in order to subject the changes to Permit 95010001 "to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124. . . ." Although 40 CFR 124.1 indicates that Part 124 contains USEPA's "procedures for issuing, modifying, revoking and reissuing, or terminating all . . . PSD . . . 'permits' . . . ," Part 124 does not actually include procedures for revising PSD permits. In fact, 40 CFR 124.5(g)(1) is "Reserved for PSD Modification Provisions." Thus, Part 124 arguably does not apply to processing changes to PSD permits.

The observation made in this comment provides legal support for the administrative judgment that permitting authorities currently exercise in practice with respect to procedures that are used for processing revisions to PSD permits, including their reliance on USEPA's Draft Guidance. As USEPA has not codified the appropriate procedures for processing various types or classes of revisions to PSD permits, permitting authorities must exercise administrative judgment when selecting the appropriate procedure to use when processing a particular application for revisions to a PSD permit.

33. Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The requested changes result in no emissions increase at the source and no fundamental changes at the source. Very little review, if any, and no reanalysis of the original application, was necessary. The proposed changes in this case also would not increase emissions, adversely impact air quality or change any emissions or regulatory requirements. Accordingly, the proposed changes should have been made by administrative amendment.

As already discussed, the Illinois EPA does not disagree with the classification of the changes to Permit 95010001 as "administrative amendments" under the Draft Guidance. However, this guidance still directs permitting authorities to exercise discretion to provide for public participation for administrative amendments to PSD permits in instances where it may be warranted. More generally, irrespective of the Draft Guidance, the Illinois EPA had the authority and duty to appropriately consider whether public participation should be provided for the proposed changes to Permit 95010001. Given the circumstances of the proposed changes to this permit, including the nature of the changes and the public's previous interest in this source, the Illinois EPA reasonably elected to provide for public participation on a draft of the revised permit.

FOR ADDITIONAL INFORMATION

Questions about the permit decision should be directed to:

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1021 North Grand Avenue, East
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an issued PSD permit. Rather, the Illinois EPA found a permit issued on this date to Abengoa Bioenergy for modifications to this source, for which the draft permit had been subject to public participation. (Prevention of Significant Deterioration (PSD) Construction Permit for Abengoa Bioenergy Corporation, NDEQ, January 21, 2004.)

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ATTACHMENT 1:

LISTING OF SIGNIFICANT CHANGES BETWEEN THE DRAFT PERMIT AND THE ISSUED PERMIT

Findings

Finding 1(a)*(revised)*: The scope of this finding, which generally describes the nature of revisions that have been made in the revised permit, has been reduced. In the issued permit, like the draft permit, this finding explains that the permit has been revised to remove requirements that would be inconsistent with the use of a separate control system for secondary emissions of the BOFs, as is planned. In the issued permit, this finding no longer mentions revision because of inconsistency with requirements of the Iron and Steel NESHAP. It also does not mention inconsistency with requirements in the Clean Air Act Permit Program (CAAPP) permit for the source. This change responds to a comment that the Illinois EPA, in the Project Summary, improperly indicated that certain operational and monitoring requirements need not be included in the revised PSD permit because of requirements that now exist in the Iron and Steel NESHAP and in the CAAPP permit for the source. As observed by this comment, the relationship between the revised permit, the Iron and Steel NESHAP, and the CAAPP permit is not as simple as would have been indicated by this finding in the draft permit. In particular, as the revised permit would rely on provisions of the Iron and Steel NESHAP, this should be and is now explicitly provided for by the revised permit. Accordingly, in the issued permit, this finding only generally explains that revisions have been made in the revised permit to address the new control system planned for the BOFs.

Finding 3(c)*(new)*[53]: This new finding provides that the revised permit will not become effective when it is issued. Rather, the effectiveness of the revised permit will be appropriately delayed to address the possibility that a petition for review of this permit is submitted to the USEPA's Environmental Appeals Board (Board), appealing the revised permit. In addition, if the revised permit is appealed, the revised permit would not become effective until either the Board declines the petition for review or it makes a decision on the merits that does not remand the permit back to the Illinois EPA. These provisions are consistent with the relevant provisions of 40 CFR Part 124 that deal with issuance of PSD permits.[54] This change to the permit resulted from further evaluation in response to comments concerning the administrative process being used for the revision of this permit. These comments, which are addressed in the body of this Responsiveness Summary, argued that the Illinois EPA could have issued this revised permit without holding a public comment period. While considering those comments, the Illinois EPA realized that the draft of the revised permit would not include provisions to accommodate an appeal of the issued permit in accordance with 40 CFR Part 124. The revised permit should accommodate such an appeal because the Illinois EPA has processed the revision of this permit as a revision to a PSD permit. Accordingly, new Finding 3(c) has been included in the revised permit to enable an appeal of the permit in a manner that is consistent with the provisions of 40 CFR Part 124.[55]

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[53]In the issued permit, a cross-reference to this new finding is now provided after the "Date Revision Issued" in the information block at the top of the permit.

[54]The USEPA's Environmental Appeals Board hears appeals of PSD permit actions taken by USEPA and by other delegated permitting authorities. The USEPA's administrative rules for these appeal proceedings are found in 40 CFR Part 124, Procedures for Decisionmaking.

[55]It should be noted that new Finding 1(c) does not indicate that the Illinois EPA has determined that the issuance of this revised permit is a PSD permit action. Rather, it reflects a belief that it is appropriate to proceed as if the changes that have been made to this permit entail issuance of a revised PSD permit. Among other things, this is because of the form of the original permit, the extent of the changes that have been made to the permit, and US Steel's expressed desire for certainty in the authoritativeness of the revised permit. However, this does not mean that the Board, in response to a petition for review of the revised permit, could not conclude that the issuance of this revised permit was

Conditions

Condition 8*(revised)*: Wording in this condition, which restates the applicable state standard for opacity of emissions from the roof monitor of a BOF shop, 35 IAC 212.446(c), has been corrected. In the issued permit, this condition addresses a standard that applies to the "opacity of emissions" rather than to "visible emissions." It is evident that this condition addresses opacity as the limit is expressed as a percentage.[56] The change is a result of a comment, which is addressed in the body of this Responsiveness Summary, that expressed concern about the addition of a regulatory citation to this condition. As part of the further consideration that occurred, it was decided that this simple correction should be made to the wording of Condition 8.[57]

Condition 9/ Former Conditions 9 and 10 *(revised)*[58]: Condition 9 now requires US Steel to operate and maintain the BOFs and associated capture and control systems in accordance with applicable requirements of the Iron and Steel NESHAP. This change was made in response to a comment that the removal of previous Conditions 9 and 10, as proposed in the draft of the revised permit would act to eliminate independent enforceability of the permit. To maintain such enforceability, this comment further suggested that, as the revised permit would rely on provisions of the Iron and Steel NESHAP in place of the provisions that would be removed, the revised permit should require compliance with applicable provisions of this NESHAP. This would make the requirements of the Iron and Steel NESHAP that would now take the place of Conditions 9 and 10 actually enforceable under the permit. As the change suggested by this comment would merely memorialize the basis for removal of former Conditions 9 and 10 from the permit and enhance the practical enforceability of the substantive requirements in the permit, the Illinois EPA has proceeded as requested by this comment.

In the issued permit, Condition 9 clarifies the relationship between the revised permit and the Iron and Steel NESHAP. Since provisions of this NESHAP will serve in place of the compliance procedures in former Conditions 9 and 10 of the permit, Condition 9 in the issued permit addresses operational and maintenance requirements for the BOFs and associated capture and control systems. It specifically requires US Steel to comply with applicable provisions of this NESHAP for operational monitoring, performance testing, operating parameter limits, and operation and maintenance of equipment. With regard to performance testing, Condition 9 also further provides that unless US Steel is willing to consider all particulate measured by NESHAP testing to be PM-10, tests must also be conducted for emissions of PM-10. This additional requirement was needed because this NESHAP does not require performance testing for PM-10 emissions, since it sets particulate limits in term of PM. This further provision will require testing to also be conducted for PM-10 emissions if US Steel elects to consider the distinction between PM and PM-10 when determining compliance with Condition 8 (35 IAC 212.458(b)(23)), which sets limits for particulate emissions in terms of filterable PM-10.

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not a PSD permit action. Notably, emissions of particulate, which are addressed through the provisions of the permit that have been revised, were not originally subject to PSD review.

[56]Standards for visible emissions do not set limits for the percentage of visible emissions. Such standards may simply prohibit such emissions. They may also restrict the amount of time during which such emissions occur. For example, visible emissions from flares are commonly restricted to a total of 5 minutes in any two-hour period.

[57]In addition, other changes have been made between the draft and issued revised permit that involve conditions that the draft permit would not have retained. As these other conditions will now be "temporarily" retained in the permit until the new control system starts operation, as will be discussed later, it was necessary to make corrections to the wording and structure of those conditions. As these changes have now been made to those other conditions, it was also appropriate that Condition 8 be changed so that it now refers to opacity of emissions.

[58]The parenthetical notes in the issued permit, which identify provisions of the previous permit that are not in the revised permit, have also been appropriately adjusted to address this change. In the revised permit, these notes no longer indicate that Condition 9, Conditions 11, 12 and 13 and Condition 39 have been removed from the permit.

In the issued permit, Condition 9 is also accompanied by a note that explains that compliance with the operational and maintenance requirements of the Iron and Steel NESHAP has been required as the means to verify ongoing compliance with the requirements of Conditions 7 and 8 of the permit and to address implementation of good air pollution control practice for the BOFs. This note is appropriate to clearly document the role of Condition 9 in the revised permit. In the absence of this explanation, one might improperly assume that the purpose of Condition 9 in the revised permit is merely to facilitate ongoing compliance with the Iron and Steel NESHAP.

Condition 11 *(revised)*: In the issued permit, this condition, which deals with use of flame suppression to minimize emissions from tapping of the BOFs, has been revised rather than being removed, as was proposed. Condition 11 in the issued permit now requires that flame suppression be used until the new baghouse control system begins operation. The original Condition 11, which requires use of flame suppression, has been retained as Condition 11(a). New Condition 11(b) now provides that this requirement for flame suppression will terminate when US Steel begins operation of a capture and control system for secondary emissions from the BOFs, as now planned, which makes flame suppression infeasible or unnecessary. This change was made in response to a comment suggesting that the revised permit should retain requirements that would be applicable until the new baghouse control system begins operation, rather than simply relying on the presence of these requirements in the CAAPP permit for the source to maintain their continued effectiveness until they actually cease to apply. As the approach suggested by this comment would maintain the enforceability of the subject requirements under the PSD permit, where they originated, the Illinois EPA has proceeded as requested by this comment.

Because this comment also addressed other requirements that would only continue in effect until the new baghouse control system begins operation, new Condition 11(b) also addresses the effectiveness of those other requirements. In particular, Condition 11(b) also provides that the operational requirements and associated monitoring requirements that have now been retained in the permit as Conditions 12 and 13 would also terminate upon startup of a new control system for secondary emissions.

Conditions 12 and 13 *(revised)*: In the issued permit, these conditions, which deal with operational requirements for BOFs and associated monitoring requirements, have been revised rather than being removed, as was proposed. This change was also made in response to the comment that suggested that the revised permit should retain requirements that would be applicable until the new control system begins operation, rather than relying on the source's CAAPP permit to maintain the effectiveness of requirements until such time. As the suggested approach would maintain the enforceability of the subject requirements under the PSD permit, the Illinois EPA has proceeded as requested by this comment.

Since the revised permit now explicitly requires compliance with existing operational and monitoring requirements until the new baghouse control system begins operation, these requirements had to be appropriately carried over in the revised permit with editorial and technical corrections and updates to these requirements. First, the organization and order of requirements in the issued permit have been revised for clarity. The operational requirements have been kept in Condition 12.[59] All monitoring requirements are now in Condition 13.[60] Second, the wording of both Conditions 12 and 13 has been simplified to improve

[59] In Condition 12 in the revised permit, the first requirement (Condition 12(a)), is now the general requirement to operate the BOFs with the stack gas flow rate of the ESP at certain minimum levels. Condition 12(b) now addresses the values of minimum set points while only a single furnace is in operation. Condition 12(c) now addresses the operational requirements when both BOFs are operating.

[60] In Condition 13, the first requirement (Condition 13(a)), is that US Steel operate and maintain a continuous operational monitoring system for the gas flow rate in the stack for the ESP, with recordkeeping for the monitored flow rates for each steel production cycle for the different phases of BOF operation (former Conditions 12(c) and 12(e)). Condition 13(b) now addresses operational monitoring for waste gas suction in the main downcomer duct of

clarity and facilitate practical enforceability.[61, 62] Lastly, the contents of Condition 13 have been revised to reflect developments in permit requirements for operational monitoring systems, with similar requirements now set for both systems.[63] These revisions were needed because requirements for these monitoring systems have now been included in the revised permit and the permit should now reflect current practice in permitting for establishing requirements for operational monitoring systems, with similar requirements for both systems.

Explanatory note following Condition 18 *(new)*: This new note explains that the previous note that followed Condition 18 has not been included in the revised permit. This change was made in response to a comment requesting this change. The parenthetical explanatory notes in the revised permit generally explain where conditions have been removed as part of the revision of the permit to avoid possible future confusion. They enable someone who is referring to the revised permit to understand that the gaps in the numbering of conditions in the permit is intentional. The change requested by this comment could also serve to avoid possible future confusion. It would make clear that the previous note, which provided a definition of a "BOF cycle," was also intentionally removed in the revised permit.[64] Accordingly, the change requested by this comment was made.

Condition 39 *(revised)*: In the issued permit, this condition, which deals with reporting of deviations, has been revised rather than being removed, as was proposed. This change was made in response to a comment

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the ESP, again requiring recordkeeping for each production cycle for the different phases of operation (former Conditions 13(a) and 13(d)). Condition 13(c) now provides for quarterly calibration of both the monitoring system for waste gas suction, as well as the monitoring system for stack gas flow rate (former Condition 13(f)). Condition 13(d) now contains the general obligations for these monitoring systems, addressing both the monitoring system for stack gas flow rate, as well as the system for waste gas suction (former Condition 13(b)).

[61]For example, in revised Condition 12, the wording of Condition 12(a) (former Condition 12(c)), now clearly provides that the ESP does not need to be operated at the established set points for purposes of emissions testing. While allowing for alternative set points to be approved, the wording of the former condition improperly suggested that testing to evaluate alternative set points would have to be conducted while operating at the established set points. If applied literally, this would have meant that testing to evaluate alternative set points could not actually be conducted, since the ESP would have to be operated at the established set points during such testing.

Condition 12(c) (former Condition 12(b)) also imposes requirements related to overlapping of charging and tapping when both BOFs are in use. The revised condition now provides that all four of these requirements must be part of US Steel's Operating Procedures for the BOFs. As there are four distinct requirements, the Operating Procedures for the BOFs must include them all, rather than only two of them, as was formerly specified.

[62]In Condition 13 of the revised permit, various flaws in the wording of the requirements for monitoring in the former permit have been eliminated. For example, the basic provision for monitoring of ESP stack gas flow rate in the revised permit, Condition 13(a), now explicitly requires US Steel to conduct continuous operational monitoring for this parameter. The previous condition (former Condition 12(d)), did not directly require such monitoring. Instead, it required US Steel to calibrate, operate and maintain a continuous strip chart recorder for this parameter "as measured by the stack gas flow meter during ESP use." As such, the former condition permit did not directly address operation of a continuous monitoring system for ESP stack gas flow rate. In addition, this condition did not actually require "monitoring" whenever the BOFs were being operated, only when the ESP was being operated.

[63]In the issued permit, identical requirements are set for both the continuous monitoring system for stack flow rate and the continuous monitoring system for waste gas suction. Both systems must be operated, maintained and calibrated by US Steel. The data that is recorded for both systems must include data for each steel production cycle for each phase of operation (charging, refining and tapping). Both systems must be calibrated on at least a quarterly basis. Finally, both systems must be operated at all times that a BOF is in operation and shall be used as mechanisms to ensure that adequate draft is maintained.

[64]The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle in the permit since it is inconsistent with the related definition for steel production cycle adopted by USEPA in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production cycle as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

that the removal of Conditions 9 and 10, as was proposed in the draft of the revised permit, would act to eliminate independent enforceability of the permit. Changes were made in the revised permit to directly respond to this comment, as have been discussed. Changes with respect to Condition 39 were also appropriate in responsed to this comment. In particular, Condition 39 is now retained so that the revised permit independently addresses reporting of deviations from permit requirements and does not rely solely on the parallel provisions of the CAAPP permit for reporting of any deviations from the requirements of the permit. As Condition 39 is now retained in the revised permit, necessary technical and editorial corrections have been to this condition.[65]

[65] In the revised permit, Condition 39 requires reporting of "deviations" rather than "exceedances," with such reporting required even if the deviations have been determined or identified by US Steel by a means other than the records required by the permit. As deviations are now addressed, which may include matters other than emissions exceedances, information is not required for the amount of emissions released. If a deviation involves excess emissions, information on the amount or nature of excess emissions would typically be included as part of the required description of the deviations. Finally, as reporting of deviations is also now addressed in the CAAPP permit for the source, the condition recognizes that the CAAPP permit may specify other requirements for reporting of deviations.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009250

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217/782-7027
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December 17, 2012

EPA - DIVISION OF REGULATORY ... ENT

AUG 23 2013

REVIEWER JRM

unsigned copies

Amy Funk
University of Illinois
1 Regency Plaza
Collinsville, IL 62234

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Funk:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

The Illinois EPA has prepared a Responsiveness Summary addressing comments and questions raised during the public comment period. Copies of the final permit decision and Responsiveness Summary for revisions to Permit 95010001can be obtained by the following means:

1. From the Illinois EPA's website:

   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
217/524-5023 – Facsimile
brad.frost@illinois.gov

To obtain a printed copy of the documents free of charge, please contact the Illinois EPA through the contact information listed in #3 above.

When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's procedures for Decision Making, 40 CFR 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the US Environmental Protection Agency (USEPA) to review the issued permit. In addition, any person who failed to file comments or failed to participate in the public hearing on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision.

As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009252

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
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217/782-7027
217/782-9143 TDD

December 17, 2012

Mark Feldworth
1810 August, Apt. 2
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Feldworth:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

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As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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217/782-9143 TDD

December 17, 2012

Erika Belmont
One Brookings Drive
St. Louis, MO 63130

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Belmont:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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brad.frost@illinois.gov

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009256

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217/782-7027
217/782-9143 TDD

December 17, 2012

Robert Bewkes
One Brookings Drive
St. Louis, MO 63130

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Bewkes:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009258

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217/782-7027
217/782-9143 TDD

December 17, 2012

Kathy Andria
P.O. Box 4242
Fairview Hts., IL 62208

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Andria:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009260

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Art Chimes
4430 Arco Ave.
St. Louis, MO 63110

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Chimes:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009262

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Bryan Kresak
US Steel
1951 State Street
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Kresak:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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brad.frost@illinois.gov

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As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009264

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

David Hacker
U.S. Steel
600 Grant St.
Pittsburgh, PA 15219

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Hacker:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

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   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

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Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
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brad.frost@illinois.gov

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009266

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217)782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Mike Dzurinko
US Steel
1350 Penn Ave.
Pittsburgh, PA 15222

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Dzurinko:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

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Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009268

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

John Mountain
Dynamic Bulk Systems
1111-B Horan Drive
Fenton, MO 63026

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Mountain:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Matt Story
US Steel
1951 State Street
Granite City, IL 62034

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Story:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009272

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Jason Braxton
US Steel
1330 Penn Liberty Plaza
Pittsburgh, PA 15222

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Braxton:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

217/782-7027
217/782-9143 TDD

December 17, 2012

Richard Wiese
US Steel
1951 State Street
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Wiese:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009276

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Ken Aud
United Congregations of Metro-East
3305 Village Lane
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Aud:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Mail Code 1103M
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If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

217/782-7027
217/782-9143 TDD

December 17, 2012

Dan Watson
2583 Waterman
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Watson:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
217/524-5023 – Facsimile
brad.frost@illinois.gov

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As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009280

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Linda Aud
United Congregations of Metro-East
3305 Village Lane
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Aud:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009282

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Larry DiCicco
Murphy Co.
1233 N. Price Road
St. Louis, MO 63132

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. DiCicco:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009284

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Jessica Wernli
United Congregations of Metro-East
3222 D Bell Avenue
St. Louis, MO 63106

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Wernli:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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brad.frost@illinois.gov

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009286

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Oliver Rains, Jr.
SOAR
2402 IL Avenue
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Rains:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009288
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Veronique LaCapra
St. Louis Public Radio

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear :

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009290

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Maxine Lipeles
Washington University
One Brookings Dr.
St. Louis, MO 63130-4899

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Lipeles:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009292

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Genevieve Damico
USEPA
77 West Jackson Blvd.
Chicago, IL 60604-3590

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Damico:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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To obtain a printed copy of the documents free of charge, please contact the Illinois EPA through the contact information listed in #3 above.

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As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009294

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Monica Rios
Hodge Dwyer & Driver
3150 Roland Ave.
Springfield, IL 62705-5776

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Rios:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

The Illinois EPA has prepared a Responsiveness Summary addressing comments and questions raised during the public comment period. Copies of the final permit decision and Responsiveness Summary for revisions to Permit 95010001can be obtained by the following means:

1. From the Illinois EPA's website:

   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
217/524-5023 – Facsimile
brad.frost@illinois.gov

To obtain a printed copy of the documents free of charge, please contact the Illinois EPA through the contact information listed in #3 above.

When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's procedures for Decision Making, 40 CFR 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the US Environmental Protection Agency (USEPA) to review the issued permit. In addition, any person who failed to file comments or failed to participate in the public hearing on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision.

As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

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Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

December 2012

Responsiveness Summary For Public Questions and Comments on the Revision to Construction Permit/PSD Approval 95010001 To Accommodate an Emission Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Source Identification No.: 119813AAI
Permit No.: 95010001

DECISION

On December 17, 2012, the Illinois Environmental Protection Agency (Illinois EPA) revised Permit 95010001, for United States Steel Corporation, Granite City Works (US Steel), to accommodate a planned emission reduction project for the two basic oxygen furnaces (BOFs) at this steel mill. In response to comments, the revised permit that has been issued, as compared to the draft of a revised permit prepared by the Illinois EPA, clarifies current compliance procedures for the BOFs, which will continue to apply while the new control system for the BOFs is being constructed. The issued permit also clarifies the compliance procedures that will apply after the new control system begins operation.

BACKGROUND

US Steel requested revisions to Construction Permit/PSD Approval 95010001, originally issued in 1996, to accommodate an emission reduction project for the two basic oxygen furnaces (BOFs). This project will involve the installation of a new control system with a filter or "baghouse" for secondary particulate emissions from the BOFs, i.e., the particulate emissions from charging and tapping of the BOFs. This new control system is the subject of an Agreement between US Steel and the Illinois EPA. The actual construction of this system is the subject of a separate application for a construction permit, Application 11050006, which is still pending with the Illinois EPA, Bureau of Air.[1]

Revisions to Permit 95010001 have been made to address certain operational requirements in this permit for the BOFs that will no longer be appropriate or possible when the new control system begins operation. The revisions to Permit 95010001 will also remove operational requirements for the BOFs that are now considered obsolete or outdated given new requirements that apply to the BOFs, notably new emission standards and associated operating requirements for BOFs adopted by USEPA. However, the revisions do not involve the emission limits for the BOFs that were originally set by Permit 95010001.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. Applications for air pollution control permits must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial review of US Steel's application for revisions to Permit 95010001, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a revised permit and prepared a draft of a revised version of Permit 95010001 for public review and comment. The comment period for the revised permit was combined with the comment period for a draft of a construction permit for the new baghouse control system, Application 11050006.

The public comment period began with the publication of a notice in the Granite City Press Record on May 30, 2012. The notice ran again in the Granite City Press Record on June 6th and 13th, 2012. A public hearing was held on July 18, 2012 at the Granite City Township office to receive oral comments and answer

[1] The construction permit application for the baghouse control system, Application 11050006, is being processed using "Integrated Processing." Accordingly, the construction permit for this system, if issued, would also authorize related changes to be made by administrative amendment to the Clean Air Act Permit Program (CAAPP) permit for the Granite City Works. (The Clean Air Act Permit Program (CAAPP) is Illinois' operating permit program pursuant to Title V of the federal Clean Air Act for major source of emissions and certain other sources of emissions.) In the draft of the construction permit for the baghouse control system that the Illinois EPA has prepared, the specific changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate this system would be identified in Part 2 of the that construction permit.

questions regarding the two applications and the two draft permits (the drafts of revised Permit 95010001 and new Construction Permit 11050006[2]). The comment period closed on August 17, 2012.

Following the close of the comment period, the Illinois EPA reviewed the oral comments that were made at the public hearing and the written comments that were submitted. This document was prepared to document this review of comments by the Illinois EPA to accompany the issuance of revised Permit 95010001. As related to US Steel's application for a construction permit for the new baghouse control system, which is still pending, when the Illinois EPA takes final action on that application, the Illinois EPA will prepare a separate responsiveness summary to accompany that action.[3]

AVAILABILITY OF DOCUMENTS

The revision of Permit 95010001 issued by the Illinois EPA and this responsiveness summary are available by internet, http://www.epa.state.il.us/public-notices/.[4] Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The Illinois EPA administers the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, for sources in Illinois pursuant to a delegation agreement with USEPA. When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's Procedures for Decision Making, 40 CFR Part 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the USEPA to review the issued PSD permit. In addition, any person who failed to file comments or failed to participate in the public comment period on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision. If comments were submitted on the draft PSD permit that requested changes in the permit, the PSD permit will not become effective until after the period for filing an appeal has passed. The federal procedures governing appeals of PSD permit are contained in the Code of Federal Regulations, "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19.

To accommodate an appeal of revised Permit 95010001 to USEPA, the revised permit does not immediately take effect upon issuance. The effectiveness of the permit is delayed to provide time for appeal of the permit to USEPA and, if such an appeal is filed, for the appropriate resolution of the appeal.

If an appeal will be submitted to USEPA for the revised permit by regular mail, it should be sent on a timely basis to the following address. If an appeal will be sent by a means other than regular mail, refer to the website of the USEPA's Environmental Appeals Board for instructions http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf).

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

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[2]The draft construction permit also identifies the related changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate the new baghouse control system.

[3]This responsiveness summary also addresses certain comments related to the draft construction permit that were made by the public at the public hearing. This has been done to respond to all comments from the public in this document.

[4]This information may also be available on the internet database that USEPA Region 5 maintains for certain air pollution control permits issued in Illinois, Illinois Permit Database, available at http://www.epa.gov/reg5oair/permits/ilonline.html.

Telephone: 202/233-0122

QUESTIONS AND COMMENTS WITH RESPONSES BY THE AGENCY

1. The new baghouse would control emissions from tapping and charging of the BOFs, but emissions from refining would continue to be controlled by the existing ESP. Is there a reason that the baghouse could not also control refining?

   The new baghouse system is not designed to control the refining or "primary emissions" of the BOFs because that is not the main target of the Agreement. The bulk of the improvement in control of particulate emissions that is sought is for the secondary emissions of the BOFs, i.e., emissions from charging and tapping of the BOFs. This is where the current control system on the BOFs may be greatly improved to obtain significant benefits for ambient air quality.

   Moreover, baghouses commonly are not considered suitable for control of the primary emissions of a BOF. If one attempted to use a baghouse to control these emissions, the high moisture level in the flue gas entering the baghouse would quickly blind the filter material, interfering with proper operation of the baghouse. The high moisture level is a consequence of the water sprays that are used to cool the flue gas before it enters the baghouse or other control device. This cooling is needed to both protect the control device from damage and, as the volume of flue gas is reduced by cooling, to facilitate effective control of emissions. Accordingly, the primary emissions of BOFs are controlled with ESPs or scrubbers.[5] In this case, primary emissions would continue to be controlled by the existing ESP. The performance of the existing ESP should be expected to improve significantly when it is no longer being relied upon for control of secondary emissions and can be operated for control of only primary emissions.[6]

2. While I am grateful that a baghouse system will be installed on the BOFs, could the system be better? It has taken many years to get to this point. As long as US Steel is installing a baghouse system for the BOFs, why not install the most protective one available, with the greatest emission reduction that can be made. It will be better for public health and perhaps the area can truly meet the National Ambient Air Quality Standards (NAAQS) for particulate matter.

   The Illinois EPA appreciates this sentiment. However, the planned project for the BOFs is appropriate. Secondary emissions from the BOFs will be controlled by a baghouse control system that is specifically designed for effective capture and control of secondary emissions, with greater capacity that the current hooding. This system will be connected to a large baghouse designed for control of secondary emissions, rather than being served by an ESP that must also control the primary emissions of the BOFs.

3. The baghouse at Gateway Energy, the new coke plant in Granite City, is required to remove 99.99 percent of the $PM_{2.5}$ emission. The baghouse proposed to be used for the BOP furnaces would only have 97 percent removal. Why won't the new baghouse for the BOFs be as good as the baghouse at Gateway Energy?

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[5]For example, the particulate emissions of the other BOFs in Illinois, at Mittal Steel, in Riverdale, in the Chicago area, is controlled by the combination of an ESP system for primary emissions and a baghouse system for secondary emissions.

[6]Accordingly, the Agreement appropriately provided for a new baghouse system for control of emissions from charging and tapping. The Agreement also sets a more stringent limit for the ESP, 0.01 gr/scf , compared to 0.02 gr/scf, However, it did not provide for a new control system be installed for refining emissions of the BOFs, replacing the existing ESP.

The main baghouse at Gateway Energy and the new baghouse planned for the BOFs at the Granite City Works should not be directly compared in the way that they have been in this comment. In fact, the proposed baghouse at US Steel would be subject to the same performance requirement for as the main baghouse at the existing Gateway Energy plant, i.e., a limit of 0.005 gr/scf for filterable particulate matter in the exhaust from the baghouse.[7]

The cited efficiency values for these baghouses actually address different aspects of the performance of these two control systems. As such, they do not provide a direct comparison of the two baghouses and do not indicate that the new baghouse for the BOFs would not be as "good" as the baghouse at Gateway Energy. For the Gateway baghouse, the efficiency value is actually a specification for the removal capability of the filter fabric, not the overall control efficiency of the baghouse. In contrast, the cited efficiency value for the new control system for the BOFs actually addresses the design control efficiency of the new baghouse for secondary emissions from the existing BOFs at the Granite City Works. As such, it considers the actual nature and loading of particulate matter in the stream that would be entering the baghouse. For baghouses, these are critical factors for the numerical value of control efficiency that is achieved by a baghouse when it is used in a particular application. Accordingly, the performance of filter-type control devices is more appropriately addressed, from a technical perspective, in terms of the outlet dust loading that is achievable or required. On this basis, the requirements for these two baghouses are identical.

4. USEPA has certified numerous filters for 99.99 percent removal efficiency for $PM_{2.5}$. According to the construction permit application, the proposed baghouse for the BOFs will have 97 percent removal efficiency for PM.

The Illinois EPA is not aware of any "filters," i.e., baghouses, that USEPA has certified for their removal efficiency. USEPA has certified various <u>filtration materials</u> for achievement of 99.99 percent removal for $PM_{2.5}$. These certifications are based on evaluations of samples of those materials made in a laboratory using a standardized analytical methodology. This methodology involves introducing a stream of particulate matter of uniform size at a constant rate to the sample of filter material that is being tested. As such, USEPA's certifications for filtration materials do not reflect the performance of the filtration fabrics in actual applications, much less the performance of entire baghouse systems. Accordingly, this comment does not provide meaningful data against which to compare the new baghouse control system for the BOFs.

Incidentally, it is expected that, in practice, the overall performance of the new baghouse will be better than 97 percent, which is a design specification for this device that was provided in the application.

5. Is this the best baghouse and filter available? Comparing the proposed baghouse to other baghouse units, will this be the best baghouse available? Are the full capabilities of the baghouse going to be used? Could the baghouse achieve a higher efficiency?

Since the new control system is an emission reduction project, a case-by-case review of the performance or the efficiency of the baghouse is not required by applicable rules. However, as reflected in the construction permit, the new baghouse control system must meet emission limits for particulate matter established by USEPA as Maximum Achievable Control

[7] Refer to Condition 4.1.5(a) of Construction Permit/PSD Approval 06070020.

Technology, under the Iron and Steel NESHAP, 40 CFR 63 Subpart FFFFF. As such, a modern baghouse is required.

6. If there is a baghouse control system or filter that would be more protective, that is what I want. I am thrilled about this project but I think of its cost. USEPA is going to set revised NAAQS for $PM_{2.5}$ and ambient air quality in Granite City is not going to meet them. It seems like this is the appropriate time to just get it done. Otherwise, it might not happen for a long time.

The Illinois EPA appreciates the desire to have the most efficient and protective baghouse control system for the BOFs. However, the planned project for the BOFs is a reasonable project that US Steel has committed to implement for control of secondary emissions. A modern capture system connected to a large baghouse will be installed, taking the place of the existing ESP for control of secondary emissions.[8]

7. The draft construction permit for the new baghouse control system would limit its emissions of particulate as particulate matter (PM) but not as PM_{10} or $PM_{2.5}$. For PM_{10} and $PM_{2.5}$, the permit would only require emissions testing followed by submission of a onetime report evaluating PM_{10} and $PM_{2.5}$ emissions with the new control system, presumably for purposes related to the state implementation plan. Why is there no ongoing accountability for PM_{10} and $PM_{2.5}$ emissions?

The permit addresses the particulate emissions of the BOFs in terms of PM because this currently is the most effective and practical way to address these emissions. This is also reason why the Agreement between US Steel and the Illinois EPA addressed the particulate emissions of the BOFs in terms of PM. This is possible because PM, PM_{10} and $PM_{2.5}$ are all different approaches to the measurement and quantification of particulate.[9] As a consequence, limits on the particulate emissions of an emission unit in terms of PM also act in practice to generally address and restrict the unit's emissions of PM_{10} and $PM_{2.5}$. In the simplest terms, a lower limit for particulate emissions in terms of PM, also results in lower emissions of particulate as PM_{10} and $PM_{2.5}$.

Currently, the most effective way to address control of particulate emissions from BOFs is as PM because this is how the particulate emissions of BOFs and their control systems have historically been addressed. There is a body of emission testing upon which to rely when making projections for the PM emission rates that are or will be achievable from BOFs with the use of certain control technology. A similar body of data does not exist for the control of emissions in terms of PM_{10} or $PM_{2.5}$. As a consequence, emission limits expressed in terms of PM can effectively be more stringent than limits expressed in terms of PM_{10} or $PM_{2.5}$. Since they have a better basis, they do not need to account for the high level of uncertainty that would need to be considered if limits were set in terms of PM_{10} or $PM_{2.5}$.[10] Emission limits in

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[8] There also have been significant improvements in ambient air quality in the Granite City area, with monitoring in recent years showing attainment of the present federal National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$.

[9] USEPA categorizes particulate as supercoarse, coarse, fine and ultra fine. Supercoarse particulate has an aerodynamic diameter of greater than 10 microns, coarse particulate has an aerodynamic diameter between 2.5 and 10 microns, fine particulate has an aerodynamic diameter between 2.5 and 0.1 microns, and ultrafine particulate has an aerodynamic diameter of 0.1 microns or less. PM_{10} is composed of coarse, fine, and ultrafine particulate. $PM_{2.5}$ is composed of fine and ultrafine particulate. As such, $PM_{2.5}$ is a subset or component of PM_{10}.

[10] For example, if $PM_{2.5}$ makes up approximately 20 percent of the particulate emissions of an emission unit after control, a limit of 0.005 gr/scf for PM is generally equivalent to a limit of 0.001 gr/scf for $PM_{2.5}$. (0.005 gr/scf x 0.20 = 0.001 gr/scf). In actual practice, when relying upon the relationship between different forms for particulate, one should consider the accuracy and reliability of the available data for particle size distribution (i.e., the percentage of the PM emissions that are of different sizes). The better the data for particle size distribution and the lower the variability in this data, the simpler and more consistent the relationship. For example, if the available data is only sufficient to indicate that between 10 and 30

terms of PM are also expected to be more effective because procedures for testing PM emissions have been used for decades and the conditions needed for accurate measurements are well understood. This is not the case for PM_{10} or $PM_{2.5}$.[11] This means that another source of uncertainty that would be present for limits in terms of PM_{10} or $PM_{2.5}$ is avoided when limits are set for PM.

In this case, limits in terms of PM are also more practical because the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, addresses particulate emissions from BOFs in terms of PM. Accordingly, the performance testing that is required pursuant to this NESHAP will also serve to address compliance with the permit limits for particulate. As such, compliance with particulate limits in terms of PM will be easier to implement.

Moreover, it should be apparent that the Agreement between US Steel and the Illinois EPA was made possible because it addresses particulate emissions in terms of PM, rather than $PM_{2.5}$. This enabled US Steel to make commitments for the emissions of the new baghouse control system that US Steel was confident could be met. It also minimized US Steel's burden for additional emissions testing that would not be required by the NESHAP. At the same time, limits for the new control system could still be set in the Agreement that should significantly reduce the secondary emissions of the BOFs, including emissions as $PM_{2.5}$.

8. Since there is a difference between $PM_{2.5}$ and PM_{10}, why would the draft construction permit for the new baghouse control system not set limits for $PM_{2.5}$.

As discussed, in this case, the difference between PM and $PM_{2.5}$ is not sufficient to support setting an emission limit in this construction permit in terms of $PM_{2.5}$. Reductions in the particulate emissions of the BOFs can be achieved with an emissions limit for the baghouse system that is in terms of PM.

9. How significant is it that the Agreement between US Steel and the Illinois EPA sets emission limits for particulate in terms of PM? Does this act to preclude the establishment of emissions limits in terms of $PM_{2.5}$ in the construction permit?

The Agreement does not directly preclude the establishment of limits for $PM_{2.5}$ in the construction permit for this emission reduction project. However, the approach taken to particulate emissions in the Agreement is significant as it is a reflection of the various considerations that culminated with an Agreement that addresses particulate emissions with limits that were expressed in terms of PM.

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percent of the PM emissions are $PM_{2.5}$ (i.e., 20 ± 10 percent), a limit for $PM_{2.5}$ based on a PM emission rate of 0.005 gr/scf would reasonably be set at 0.0015 gr/scf. To provide the necessary assurance that the limit can be complied with and is "achievable," the limit must be based on the upper bound for the fraction of PM that may be $PM_{2.5}$. In this example, this results in a $PM_{2.5}$ limit of 0.0015 gr/scf. (0.005 gr/scf x 0.30 = 0.0015 gr/scf).

Incidentally, if condensable particulate is present, another consideration for this relationship is the data that is available for emissions of condensable particulate. The relationship between emissions of PM, PM_{10} and $PM_{2.5}$ is most direct when condensable particulate is not a significant fraction of the particulate emissions, as is the case for the emissions of BOFs.

The need for any of these considerations is avoided if limits for particulate can simply be set in terms of PM.

[11] For example, USEPA has not yet developed a reference method for testing emissions of filterable PM_{10} or $PM_{2.5}$ from "wet stacks." In a wet stack, moisture in the flue gas may lead to agglomeration of individual particles as they pass through the test apparatus. This prevents reliable and accurate measurements of PM_{10} or $PM_{2.5}$ emissions. The current test methods for filterable PM_{10} and/or $PM_{2.5}$ were developed for "dry stacks," where agglomeration is not a factor, and accordingly are only appropriate for testing of dry stacks.

10. Given that the purpose of the new baghouse control system is to reduce the $PM_{2.5}$ emissions of the BOFs, that the Granite City area is designated nonattainment for $PM_{2.5}$ and could well be nonattainment under revisions to the $PM_{2.5}$ NAAQS that USEPA has proposed, is there anything that prevents Illinois EPA from putting a $PM_{2.5}$ limit in the construction permit?

As discussed, a variety of considerations lead to a construction permit that addresses control of particulate emissions from the BOFs in terms of PM. Most significantly, a limit that addresses the particulate emissions of the BOFs in terms of PM also addresses emissions of $PM_{2.5}$, likely more effectively than if a limit were to be established in terms of $PM_{2.5}$. Accordingly, factors cited by this comment do not provide an adequate basis to set limits in terms of $PM_{2.5}$ in the construction permit for the new baghouse control system.

11. It seems that the draft construction permit for the baghouse control system has many provisions that are not in the Agreement. This suggests to me that the Illinois EPA chose not to put a $PM_{2.5}$ limit in that permit.

The draft construction permit would not set any emission limits that are not established by the Agreement or by applicable emission standards. The "other" provisions in this draft permit, which are broadly referred to by this comment, would deal with testing, operational monitoring, recordkeeping and reporting. These provisions would serve to verify ongoing compliance with the applicable emission limits. These provisions would also be needed to address the transition from the current requirements for testing, operational monitoring, recordkeeping and reporting to the new requirements that will apply with the baghouse control system. Finally, the permit would rely upon the general authority of the Illinois EPA to reasonably require sources to gather emission and emission related data. These provisions in the draft construction permit would be reasonable and appropriate, addressing aspects and implications of this emission reduction project that were not explicitly addressed in the Agreement. The presence of these provisions in the draft construction permit does not show that it would be appropriate for the construction permit for the baghouse system to set limits for $PM_{2.5}$ emissions.

12. Under what circumstances would the Illinois EPA set a $PM_{2.5}$ limit in a construction permit?

Construction permits issued by the Illinois EPA currently include limits for $PM_{2.5}$ emissions when federal or state "New Source Review" (NSR) rules necessitate such limits because of the nature and circumstances of the projects that are the subjects of the permits. The NSR rules do not provide a basis to set limits for emissions of $PM_{2.5}$ in the construction for the new baghouse control system for the BOFs. This is because this project will reduce the emissions of $PM_{2.5}$ from the BOFs.[12]

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[12] **In general, construction permits currently set emission limits in terms of $PM_{2.5}$ for two types of projects relative to emissions of $PM_{2.5}$, "minor projects" and "major projects." For minor projects, which are far more common, construction permits set limits for $PM_{2.5}$ emissions as needed to address applicability of NSR. The limits for $PM_{2.5}$ emissions in these permits restrict emissions or the increases in emissions of $PM_{2.5}$ from a source or project to less than the emission thresholds at which the project would be considered major under the applicable NSR rules for its $PM_{2.5}$ emissions. However, since limits for PM emissions also serve to restrict emissions of $PM_{2.5}$, limits in terms of $PM_{2.5}$ are only set when limits in terms of PM or, in some cases, PM_{10} will also not be sufficient to address applicability of NSR rules to a project for $PM_{2.5}$ emissions.**

For major projects for emissions of $PM_{2.5}$, which are far less common, NSR rules now generally require that the construction permits for such projects explicitly address $PM_{2.5}$ emissions, with limits that represent Best Available Control Technology or the Lowest Achievable Emission Rate that are in terms of $PM_{2.5}$ emissions.

The relevant emissions thresholds under the NSR rules that distinguish minor projects from major projects, i.e., major new sources and major modifications, are as follows:

13. Do any BOF shops at steel mills in the United States have limits for $PM_{2.5}$ emissions?

Given the current circumstances for control and regulation of $PM_{2.5}$ emissions, the Illinois EPA does not believe that any existing BOF shops in the United States, similar to this BOF shop, are subject to limits expressed in terms of $PM_{2.5}$ emissions.[13] In any case, it would not be an appropriate use of Illinois EPA resources to conduct a survey to definitively answer this question. This is because even if another existing BOF shop in the country is subject to limits for $PM_{2.5}$ emissions, it would not show that it is appropriate to include such limits in this construction permit. As already discussed, emissions of $PM_{2.5}$ can be addressed and restricted by limits for emissions of PM. This is because $PM_{2.5}$ is a component of PM so limits for PM emissions act in practice to also constrain $PM_{2.5}$ emissions.

14. There are gaps in the description of the new baghouse in the application for the new baghouse control system that make it difficult to evaluate the draft construction permit. On the general data and information form for the baghouse, the manufacturer and model number of the baghouse are shown as "to be determined." On the form for filter control equipment, the filter material is described simply as "polyester." The filtering area is also "to be determined." Inlet emission stream parameters, including mean particle diameter are unknown. Are there reasons why these details are not provided or were marked the way they were? Has Illinois EPA obtained any more information for the baghouse, such as the supplier, model number, or filter area or details concerning the operation of the baghouse?

The application contains the information that is currently available for the new control system. US Steel has not yet entered into a contract for this project and the new baghouse has not yet been designed.[14] The application is based on a preliminary or conceptual design that US Steel had prepared for the project, including the performance specifications that are to be met by the baghouse, i.e., a PM emission rate of no more than 0.005 grains/dry standard cubic foot. Given the cost of this project, US Steel will not enter into a contract for the baghouse until after this project is fully permitted. Only then will a firm be selected to provide the baghouse and the engineering design of this device be started.

15. Even though the draft construction permit would not set limits for emission of $PM_{2.5}$, it would require testing for emissions for $PM_{2.5}$, which I am not questioning. What use does the Illinois EPA plan to make of the results from this testing?

This testing would identify the specific relationship between the emissions of PM, PM_{10} and $PM_{2.5}$ from the BOFs. As such, $PM_{2.5}$ emission data gathered by this testing would improve the data used in future air quality modeling that is conducted for the Granite City area or the St. Louis region for $PM_{2.5}$ air quality. If found to be necessary for the attainment of the NAAQS for $PM_{2.5}$, including attainment of the anticipated future revisions to the $PM_{2.5}$

Thresholds for a major source:
Federal PSD rules, 40 CFR 52.21 - Either 100 or 250 tons/year, depending on the category of source
State nonattainment NSR rules, 35 IAC Part 203 – 100 tons/year
Threshold for a major modification for emissions of $PM_{2.5}$ - 10 tons/year

[13] It is expected that only BOFs that recently underwent permitting for proposed modifications, if any, will be subject to limits that address emissions of $PM_{2.5}$. Such limits would be a consequence of the New Source Review rules that apply to modifications and, even if technically sound, would not provide any insight as to an appropriate limit for these BOFs as they are not being modified.

[14] Due its size and other project-specific considerations, the baghouse for this project will be designed by the selected manufacturer specifically for the project. The baghouse will not be a stock model of baghouse.

NAAQS by USEPA, the data gathered by this testing could assist in development of new standards for the BOFs, either in terms of PM, PM_{10} or $PM_{2.5}$ emissions, as appropriate.[15] Finally, the data gathered by these tests would support future permitting in Illinois and in other states in circumstances in which NSR rules do require that limits be set for particulate emissions as $PM_{2.5}$.[16]

16. Condition 3-1(b)(ii) of the draft construction permit, as it addresses the required testing for emissions of filterable PM_{10} and $PM_{2.5}$, should not specify that this testing must be conducted with USEPA Method 201 or 201A. Rather, use of only Method 201A should be specified. This is because Method 201 only measures PM_{10} emissions, whereas Method 201 can be used for measurements of both PM_{10} and $PM_{2.5}$.

The error in the draft permit identified by this comment will be corrected in any construction permit that is issued. That is, the measurements of PM_{10} and $PM_{2.5}$ emissions that are required must be made using USEPA Method 201A.

17. Condition 3-1 (e)(iii) of the Draft Construction Permit would require the final report for emission testing that is submited to the Illinois EPA to contain the operating parameter limits for the new baghouse control system that are proposed by US Steel based on such testing. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what are the procedure and the timeframe in which Illinois EPA reviews and establishes them?

The provisions of the Iron and Steel NESHAP, including 40 CFR 63.9(h)(2)(ii), 63.7790(b)(1), 63.7800(b)(3) and 63.7824(a) and (c), govern the operating parameters limits for the BOFs with baghouse control system, which are addressed by this comment. This NESHAP does not provide for approval of a source's proposed operating parameters limits by a permitting authority. Rather the limits that are established for operating parameters under this NESHAP are the levels of operating parameters during performance testing. These levels are contained or documented in the current Operating and Maintenance Plan for a subject facility which the source must maintain pursuant to this NESHAP, which plan specifies how the subject facility must be operated.[17]

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[15] It should not be expected that this testing would ever be used to demonstrate compliance with standards or limits for $PM_{2.5}$ emissions, as there would not be any limits in terms of $PM_{2.5}$ emissions when this testing is conducted.

[16] US Steel would also use the results of this testing in preparing the "performance report" required for this project by Condition 6(d) of the construction permit. In this report, US Steel must evaluate the reduction in emissions that is achieved by this project for emissions of particulate as $PM_{2.5}$.

[17] In this case, to revise or set new operating parameter limits for the capture system on the BOFs under the Iron and Steel NESHAP, US Steel must first submit a written notification or request to the Illinois EPA to conduct performance tests that would be the basis of the new operating parameters limits. In this case, this notification would address the "initial performance test" conducted for the BOFs with the new baghouse control system. It is expected that this notification would also address the initial operation of the BOFs with the baghouse system, until the performance tests are conducted. During this period, the current limits for operating parameters of the capture system, with control of secondary emissions with the existing ESP, would no longer be applicable but testing will not yet have been conducted to demonstrate the adequacy of the new limits for operating parameters with the baghouse system. In conjunction with US Steel's written notification for planned testing, subject to any directives from the Illinois EPA in response to this notification, US Steel must also revise its operation and maintenance plan under the NESHAP. This revision would need to address the levels of operating parameters during the initial operation of the BOFs with the baghouse, consistent with US Steel's description of operation during this period as provided in the written notification for testing.

The next step in setting new operating parameter limits is for performance tests to be conducted for the BOFs to demonstrate the adequacy of the new limits. These performance tests would be conducted with the new baghouse control system operating at the levels of operating parameters that US Steel seeks to establish as the new limits. Following the date

18. Condition 3-2(a) of the draft construction permit would require US Steel to make measurements in order to determine the PM efficiency of the new baghouse. The condition would allow for these measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

These measurements, which would relate to the efficiency of the new baghouse control system,[18] are being required to obtain information on the amount of PM collected by this system. This information is of interest to the Illinois EPA as related to the overall reduction in particulate emissions of the BOFs that is achieved in actual practice by this new system.[19] The required measurements are not needed to confirm compliance with an applicable limit or control requirement. As such, it is reasonable and appropriate for the construction permit to provide flexibility in the approach that US Steel uses for these measurements. At this time, this is especially true, as neither approach to measurements is preferred. Direct measurements of the PM loading into the baghouse would be expected to be more precise and correlate directly with measurements of emissions. However, these measurements would be taken over a relatively short period of time so would not necessarily be more accurate than indirect measurements, based on the amount of particulate collected by this system over a week or month. Indirect measurements would likely be more accurate as they address a longer period of operation of the BOFs. However, they would be less precise, as much larger amounts of material would be involved. As such, there is not a clear preference for the approach that should be taken to the measurements.

19. Currently with the ESP, the PM emissions of the BOP furnaces are reported to be 439.5 tons/year. With the new baghouse system, they would be 405.4, which boggles my mind.

The emission data cited by this comment, which was provided by US Steel for the application for a construction permit, is a very conservative evaluation of the change in emissions that would accompany this project. It reflects maximum operation of the BOFs, at their annual capacity, and a minimum level of improvement in control of emissions by the new baghouse system. Accordingly, this data overstates both current emissions and future emissions. A better assessment for the change in emissions is provided later, in response to another comment.

20. For certain conditions that are rendered "unnecessary" only after the new baghouse control system becomes operational,[20] revised Permit 95010001 should specify that the current conditions remain

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of testing, US Steel would be expected to continue to operate at or above the levels of parameters present during testing if testing demonstrated compliance while operating at those levels.

The final step in the process of setting new operating parameter limits is US Steel's submittal to the Illinois EPA of the report for this testing, with the new values for these limits. With this report, US Steel must also certify that the BOFs operated at these values of operating parameters during testing and that the testing was properly conducted for the purpose of setting new limits for operating parameters. As part of this step, US Steel must also revise its operating and maintenance plan to reflect that these new limits for operating parameters are applicable on a continuing basis.

[18] The efficiency of a baghouse, in percent, is calculated as follows:

100 x [1 – (Inlet Mass – Outlet Mass)/Outlet Mass] = Percent Control Efficiency

[19] Based on public comments, this information is also of concern to the public as it would support comparison between the new baghouse control system and baghouse systems at other sources.

[20] The Project Summary indicates that the following conditions that are proposed for deletion would be rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e)

in effect until the new baghouse becomes operational. This would ensure that the source continues to demonstrate compliance with permit limits in the manner currently provided while the baghouse is being constructed, until the time that the new baghouse becomes operational.

Revised Permit 95010001, as issued by the Illinois EPA, includes the provision suggested by this comment (new Condition 11(b)). This condition explicitly requires that the source continue to comply with certain conditions or requirements of the previous permit during the period until the new baghouse control system becomes operational.[21] The draft of the revised permit would have relied on the fact that these requirements, which will continue in effect until the new control system begins operation, are also contained in the Clean Air Act Permit Program (CAAPP) permit for the source.[22] However, the continued applicability of these requirements until the new system begins operation can also be explicitly provided for in the revised permit.

The approach that is now being taken in revised permit has added further complexity to the permit. Since the revised permit now provides for compliance with existing requirements while the baghouse control system is being constructed, the various conditions that contain these requirements must be appropriately carried over in the revised permit. In particular, minor technical corrections and updates must also be made to the requirements for continuous operational monitoring for stack gas flow rate and waste gas suction (former Conditions 12 and 13, revised Condition 12), which would not have been needed if these requirements had not been carried over in the revised permit. In particular, in the revised permit, these requirements must reflect developments in permit requirements for monitoring systems, with similar requirements set for both systems and provision for use of computerized systems for recording of data.[23]

21. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: Conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP)),[24] and Condition 10 and Attachment A (procedures to ensure proper operation of the ESP for the BOFs). The Illinois EPA states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and the federal National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, pages 1 - 3. The key element of this rationale is that

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(recordkeeping for ESP flow rates for charging and tapping), 13(a), (c) and (d) (monitoring for waste gas suction, measured as static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, pages 3 - 6.

[21]**New Condition 11(b) also addresses the possibility that the baghouse control system that is now planned does not go forward but another emission reduction project with a control system for secondary emissions from the BOF would occur in the future. This condition generally provides that the subject requirements in the original permit remain in effect until either the new baghouse control system that is now planned begins operation or another control system for secondary emissions begins operation. This is because any other new control system for secondary emissions would present similar issues as the planned baghouse system, making the subject requirements that were originally established in 1995 in Permit 95010001 unnecessary.**

[22]**The changes to the CAAPP permit for the source that are planned to address the new baghouse control system would maintain the effectiveness of the subject conditions until this new control system becomes operational.**

[23]**In addition, former Condition 12(c) improperly suggested that emissions testing to evaluate alternative set points for the capture system would have to be conducted at the established set points. This would paradoxically mean that testing to evaluate alternative set points would not actually be possible, since such testing would have to conducted at the established set points.**

[24]Condition 9(a) of the current permit requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using USEPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

the monitoring provisions of the Iron and Steel NESHAP are sufficient to assure compliance with the relevant permit limits as originally established. Accordingly, the permit should clearly establish a connection between the permit and the Iron and Steel NESHAP. Such a connection could be made by including conditions in the permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant permit limits. (This information would then be appropriately re-iterated in the CAAPP permit.) This is of concern because the CAAPP permit should not be used to supersede, replace, or otherwise eliminate the independent enforceability of the terms and conditions in the PSD permit.[25]

In place of the current compliance provisions in Permit 95010001 that would be rendered inappropriate or unnecessary with the new baghouse control system,[26] the revised permit that has been issued includes a condition, as requested by this comment, requiring that the source comply with all applicable compliance requirements of the Iron and Steel NESHAP for the BOFs, including operation, maintenance, testing, monitoring and recordkeeping requirements. (See Condition 9 in the revised permit.[27]) When the new baghouse control system begins operation and starts to control particulate emissions from charging and tapping of the BOFs, the requirements of the Iron and Steel NESHAP will take the place of the compliance provisions in Condition 9 of the former permit, which will no longer apply. The requirement of the Iron and Steel NESHAP, 40 CFR 63.7800(b), related to an operations and maintenance plan, will immediately take the place of the requirements in former Condition 10 of the former permit.[28] As a consequence, the revisions that have been made to Permit 95010001 would maintain the "independent enforceability" of this permit.[29]

22. The revised PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the permit rather than to the related conditions of the CAAPP permit that address the provisions of the NESHAP. As a construction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

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[25] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, May 20, 1999. Available at http://www.epa.gov/ttn/caaa/t5/memoranda/hodan7.pdf.

[26] **As already been discussed, operational and monitoring requirements that will be rendered inappropriate with the new control system have not necessarily been physically removed from revised Permit 95010001. Rather, to maintain continuity of requirements in the revised permit itself, the subject requirements are physically present in the revised permit but will cease to be effective when the new baghouse control system begins operation.**

[27] **New Condition 9 in Permit 95010001 broadly requires that the source comply with applicable requirements of the Iron and Steel NESHAP for BOFs, without specifying the particular requirements that are applicable. This is sufficient as the Iron and Steel NESHAP is a federal regulation, codified in the Code of Federal Regulations, and is directly enforceable. In addition, relevant requirements of this regulation as applicable to the source are recapitulated in the CAAPP permit for the source. This also avoids the need for future revisions to Permit 95010001 as might be needed if the Iron and Steel NESHAP is revised in the future by USEPA. (Based on the Information Collection Requests made by USEPA in 2011 for the steel industry, it is anticipated that USEPA will be making revisions to this NESHAP.)**

[28] **As explained in the Project Summary, the specific requirements for operation of the control system for the BOFs in Attachment A are already outdated and obsolete. The Iron and Steel NESHAP generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) The Iron and Steel NESHAP, 40 CFR 63.7800(b), now further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, the requirements for proper operation of the BOFs and ESP system should not be set in the level of detail specified by Attachment A in the former permit.**

[29] **It is noteworthy that the guidance from USEPA cited by this comment does not directly apply to the current action. The cited guidance addressed actions that may be taken in a Title V permit. In the present action, the Illinois EPA has issued a revised construction permit, taking a permitting action under Title I of the Clean Air Act, not an action under Title V of the Clean Air Act.**

The revised permit, as issued, would maintain the independent enforceability of the PSD permit. As discussed above, when the new baghouse control system begins operation, the relevant provisions of the NESHAP would serve in place of the compliance procedures of the current PSD permit that address control of particulate, with procedures that are equal to or better than that provided by the original PSD permit. For example, monitoring of gas flow rates in the duct work would serve in place of operational monitoring of stack flow rate. Operational practices that would be documented in an operation and maintenance plan, which would evolve in response to improvements and other changes in those practices, would serve in place of the operational practices for the ESP that are specifically identifies in the original PSD permit, many of which are already outdated.[30]

23. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 CFR 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at page 8. Clarification is needed to ascertain the actual amount of the projected overall emissions reduction due to the project.

The Illinois EPA does not believe that the information requested by this comment, which relates to the planned issuance of a construction permit for the new baghouse control system, is needed to support that proposed action. This is because an essential element of a modification under New Source Review is that a proposed project would act to increase emissions of one or more pollutants that are regulated under New Source Review. As discussed, the proposed baghouse system would be an emission reduction project for particulate emissions of the BOFs and would be carried out to meet provisions of the Agreement. The new baghouse system would not increase the capacity or efficiency of the BOFs. There also would not be any collateral increases in emissions of other, non-target pollutants from the operation of the system. As such, the new baghouse system should not be considered a modification for purposes of New Source Review.[31]

Even though the reduction in particulate emissions need not be quantified in response to this comment, the Illinois EPA has further examined the amount of the emissions reduction that may be assumed for this project. This evaluation has been conducted in terms of emissions of PM_{10} because underlying emission data is more reliable for PM_{10} than for $PM_{2.5}$. For purposes of PSD, 40 CFR 52.21, the historic actual emissions of the BOFs are appropriately assumed to be on the order of 314 tons of PM_{10} per year.[32] The future emissions of projected future actual emissions should be expected to be at most about 260 tons of PM_{10} per year.[33] This yields a reduction of approximately 54 tons of PM_{10} per year.

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[30]The revised PSD permit would not attempt to make other enhancements to the PSD permit, as might be needed to address deficiencies in the compliance procedures in the original PSD permit. As confirmed by the guidance from USEPA cited by this commenter, those enhancements are appropriately made in the CAAPP permit for the source as part of the process of establishing appropriate periodic monitoring for the source.

[31]For example, refer to correspondence from USEPA concerning a proposed improvement of particulate matter control at Lehigh Portland Cement in Mitchell, Indiana (Letter, February 12, 2001, Pamela Blakley, USEPA Region 5, Air Programs Branch, to Paul Dubenetzky, Office of Air Management, Indiana Department of Environmental Management.)

[32]The average of the PM_{10} emissions reported by US Steel in its Annual Emission Reports for the peak years of production during the last ten years, 2004 and 2005, is 313.90 tons per year. In each of these years, the BOFs operated at about 72 percent of their permitted annual rate.

[33]The future emissions were conservatively calculated assuming that the BOFs would actually operate near their permitted annual rate compared to the maximum rate that US Steel has achieved in practice, i.e., 90 percent compared to 75 percent. To account for the normal operation of control devices, the baghouse and ESP were also conservatively assumed to comply with applicable emission standards under the new control configuration by 40 and 20 percent respectively. For example,

24. Condition 8 of Permit 95010001, which limits the opacity of emissions from the BOF shop to 20 percent, would be revised to require compliance with this limit using the procedures in 35 IAC 212.446(c) instead of the procedures prescribed by previous Conditions 9(a) and (b). The permit record does not indicate that Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). Condition 8 in the current permit appears to be more stringent than in the draft of the revised permit since Conditions 9(a) and 9(b) of the current permit requires opacity observations to be conducted on at least a weekly basis. Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

The changes to the permit addressed by this comment do not act to relax the stringency of the opacity standard for the BOF shop, as suggested by this comment. Rather these changes involve either changes to the compliance procedures that accompany this standard that are appropriate to address the installation of the new baghouse control system[34] or are straightforward clarifications or corrections to technical elements of those compliance procedures.

Former Condition 9(a) dealt with opacity observations that the source was required to conduct for the BOF shop to verify compliance with the established opacity standard for the BOF shop, 20 percent. The source was required to conduct these observations at least weekly. The source of emissions (opacity) from the BOF shop is secondary emissions from the BOFs that are not captured. Former Condition 9(a) set a frequency for these opacity observations by the source for a BOF shop in which the BOFs did not have a separate control system for their secondary emissions. However, when secondary emissions of the BOFs are controlled with the new baghouse control system, weekly observations of opacity from the BOF shop by the source should not be needed. The new baghouse control system, with its improved capture hooding and baghouse, will control secondary emissions more effectively than the current control system, which uses one ESP for control of both primary and secondary emissions. In this regard, the Iron and Steel NESHAP does not require any observations for the opacity of emissions from a BOF shop by a source other than observations made in conjunction with periodic testing of stack emissions of particulate matter. Rather, this NESHAP appropriately relies on continuous operational monitoring for the capture system for secondary emissions from BOFs to address continuous compliance with an opacity standard of 20 percent, 3-minute average. This NESHAP provides appropriate base compliance procedures for this permit recognizing that the control measures used on the BOFs may improve over time, as will be addressed in future construction permits and in the CAAPP/Title V operating permits for the source.[35]

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rather than having emissions of 31.9 pounds per hour (745,200 scfm/min x 60 min/hr ÷ 7,000), on annual basis, actual PM_{10} emissions would be 19.2 pounds/hr (31.9 x {1.0 - 0.4} = 19.14 pounds/hour).

[34]The stringency of this opacity limit is unaffected by the revision of the permit. The limit continues to apply at all times. The source is not excused from an obligation to conduct opacity observations as needed in practice to confirm compliance with this limit. Compliance can also be independently determined by observations by members of the Illinois EPA staff that are certified opacity observers.

[35]Under the CAAPP program, the compliance procedures that are appropriate for the current configuration of emission units and control(s) at a source must be addressed each time that the CAAPP permit for the source is renewed. This is because CAAPP permits must provide for Periodic Monitoring.

The procedures by which opacity observations are to be made for the BOF shop was addressed by former Condition 9(c), not former Condition 9(b).[36] The removal of former Condition 9(c) from the permit does not affect the stringency of the opacity limit. This is because Condition 8 now cites 35 IAC 201.446(c), the state standard that limits opacity from the BOF shop to 20 percent. Like former Condition 9(c), 35 IAC 212.446(c) provides that compliance with the 20 percent opacity limit is to be determined using USEPA Method 9. Unlike former Condition 9(c), 35 IAC 212.446(c) also further provides that "compliance shall be determined by averaging any 12 consecutive observations taken at 15 second intervals." This is a necessary clarification as Method 9 would otherwise provide that compliance with the opacity limit is to be determined as a 6 minute average, based on 24 individual observations.[37]

25. In a separate permit application, US Steel has applied for a construction permit for an emissions reduction project that involves a new baghouse control system for secondary emissions of the BOFs. Because operation of this new control system will render certain requirement of existing Permit 95010001 obsolete, US Steel requested that this permit be revised to remove those obsolete conditions and the Illinois EPA has granted this request. In order to denote where conditions have been removed, the draft of revised Permit 95010001 would have included explanatory notes identifying where conditions had been removed. For consistency, a note should also be included after Condition 18 in the revised permit stating that the "note" that previously accompanied this condition has been removed from the permit.

Revised Permit 95010001 includes the explanatory note requested by this comment. The purpose of the various explanatory notes that have been included in the revised permit is generally to avoid possible future confusion. Most importantly, they enable a person who is referring to the revised permit to understand why the conditions in the permit are not numbered consecutively and there are gaps in the numbering.[38] The change requested by this comment could also serve to avoid possible future confusion. It would make clear that

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[36] Former Condition 9(b) dealt with actions to be taken in the event of an outage of the continuous opacity monitoring system on the ESP. At this time, that condition is considered obsolete as it "contemplated" and directly provided for an interruption in the operation of the continuous opacity monitoring system on the ESP. Given the reliability of opacity monitors, it is not reasonable to expect such outages to now be a normal occurrence. Accordingly, any outages of the opacity monitoring system that would occur should be addressed in the context of potential enforcement. It should not be "condoned" as such outages have been contemplated and addressed by a condition in a permit that specifies the consequences that accompany any such outage. This is particularly true now that this opacity monitoring system for the ESP is required by the Iron and Steel NESHAP, as well as being implicitly required by this permit.
Moreover, former Condition 9(b) was also flawed as it indicated that in the event of monitor outage, human observations of opacity from the ESP stack were to be conducted during "any normal work day (i.e., Monday through Friday)." In the event of such outages, the timing of such observations should be a matter that is determined on an event-specific basis. For example, if an upset of the ESP occurred during an outage of the opacity monitor, it could well be appropriate for the source to immediately arrange for opacity observations to be made even if the event occurred on a Saturday or Sunday.

[37] Incidentally, the 20 percent opacity limit for the BOF shop in 35 IAC 212.446(c) should "be expected" to be identical to the 20 percent opacity limit in Condition 8, as set in Permit 95010001 in 1995. This is because 35 IAC 212.446(c) was subsequently adopted to codify the 20 percent opacity limit for the BOF shop set by the permit as part of Illinois' State Implementation Plan (SIP). The 20 percent opacity for the BOF shop is more stringent than the 30 percent opacity limit that would otherwise apply pursuant to 35 IAC 212.123.

[38] The preferred practice of the Illinois EPA when issuing revised construction permits is to retain the numbering of conditions from the previous permit as this can be practically and reasonably accomplished. This maintains continuity in the numbering of conditions between the old and new versions of a permit. It minimizes possible confusion that might occur if the conditions in a permit were simply renumbered when a revision adds or removes conditions from the permit.
In the absence of the explanatory notes that have been included in the revised permit, someone who was referring to the revised permit would be uncertain whether they were reviewing a complete copy of the permit or whether certain conditions had been in some way omitted from the particular copy of the permit.

the previous note, which provided a definition of a "BOF cycle," was intentionally removed in the revised permit.[39] Accordingly, the change requested by this commenter was made.

26. I appreciate the potential air quality benefits of this project and the work that US Steel and the Illinois EPA and have done for this project.

This comment, which does not request any changes to the draft permits, is acknowledged.

27. In the Project Summary for the revisions to Permit 95010001, the procedures that are being used to process this application are addressed in Footnote 13, which provides in relevant part:

> This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable.

In an effort to avoid any further delay in the issuance of a construction permit for the baghouse control system (Permit 11050006), US Steel agreed to a public comment period for the revisions to Permit 95010001. However, this should not be viewed as precedent for processing these type of administrative changes to a PSD permit, where the changes result in no increase in emissions and have no adverse impact on air quality.

The Illinois EPA agrees with the general observation made by this comment. The approach taken by the Illinois EPA in the processing of the revisions to Permit 95010001 should not be taken as a general precedent precluding the processing of revisions to PSD permits by administrative amendment, whereby certain revisions to PSD permits may be directly made by the permitting authority without a public comment period. Rather, the procedural approach that was taken for the revisions to Permit 95010001 reflects a narrow finding by the Illinois EPA for the appropriate procedures for this permitting action, considering the entirety of the circumstances for this action.[40]

28. The proposed revisions to Permit 95010001 are administrative in nature and are not required to be subject to a public comment period. Illinois EPA, on its own, could have administratively amended Permit 95010001 without a public comment period.

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[39] The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle n the permit. It is inconsistent with the related definition for steel production cycle that USEPA adopted in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

[40] Moreover, as the changes to Permit 95010001 involve emissions of particulate, it is debatable whether changes have even been made to a "PSD permit." The changes do not involve "PSD review requirements," e.g., Best Available Control Technology (BACT), because the project addressed by this permit was not a major modification for emissions of particulate. However, the Illinois EPA chose to proceed as if the entirety of Permit 95010001 is a PSD permit. As discussed, this should preclude any future question whether the procedures used for this revision of Permit 95010001 were adequate and sufficient, thereby assuring that the revised permit is legally authorized and the outdated provisions of the previous version of this permit are no longer applicable.

As observed by this comment, the Illinois EPA could arguably have elected to revise Permit 95010001 by administrative amendment. However, this was not the approach that the Illinois EPA elected to take. Based on the nature of the requested revisions and the various surrounding circumstances, the Illinois EPA found that a public comment period was warranted before the permit was revised. Accordingly, the Illinois EPA prepared a draft of the revised permit. In response to the comments that were received on the draft permit, the revised permit that has now been issued differs from the draft permit in a number of respects, as has already been discussed.

29. USEPA developed a draft of guidance addressing the procedures for processing modifications of PSD permits, Revised Draft Policy on Permit Modifications and Extensions, USEPA, July 5, 1985 (Draft Guidance). Although this guidance was never finalized, it still provides direction on the appropriate procedures to be used for different categories of modifications to PSD permits. In this guidance, USEPA categorized proposed changes to PSD permits as administrative, minor, significant, or fundamental, based on the significance of the proposed changes and the extent of review that the permitting authority must conduct.[41] Of particular relevance for this action, is the guidance that is provided for proposed modifications to PSD permits that are categorized as administrative changes.[42, 43] In this regard, this guidance provided:

> Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emission or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decision originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or trading, must be carefully documented) and minor work clarifications. ...
>
> The lack of emissions and impact increases for amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to PSD permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in

[41] The categorization of proposed changes also considers whether the source or project is operating. USEPA explained that the guidance typically imposes a less rigorous process for changes at operating units because, among other factors, "a project in its earlier phases is much more flexible than one already operating."

[42] In the Draft Guidance, USEPA characterizes minor changes as entailing changes to applications or issued permits and a certain amount of additional review by the permitting authority, but not constituting either a fundamental or significant change. Emissions or impacts increase as a result of minor changes but not above the significance level.

Significant and fundamental changes were characterized as increasing emissions above significance levels and/or changing the basic nature of an emissions source.

Minor, significant, and fundamental changes to PSD permits are collectively described as revisions of PSD permits, as distinguished administrative amendments of PSD permits. For revisions of permits, unlike administrative amendments, the Draft Guidance would require public participation prior to issuance of any revised permit. Draft Guidance, page 15.

[43] In this case, these changes to Permit 95010001 would not constitute "revisions," as these changes do not address changes in the method of operation or result in a net significant emissions increase. Because the changes would not constitute revisions, a public comment period was not needed for these proposed changes to Permit 95010001.

> highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company are operated. See Draft Guidance, page 11.

Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The changes will not increase emissions and do not involve any fundamental changes at the source. Very little review and no reanalysis of the original PSD permit application was needed. The changes also would not adversely impact air quality or change regulatory requirements.

Based on the Draft Guidance, it was clearly reasonable and appropriate for the Illinois EPA to have provided for public participation on the proposed changes to Permit 95010001. This is because, as stated in the passage from the Draft Guidance cited by this comment, this guidance directs permitting authorities to provide for public participation on administrative amendments to PSD permits in instances where the proposed changes are sufficiently important to necessitate public participation.[44] Given both the nature of the proposed changes and the public interest in this source, the Illinois EPA reasonably found that this was the case.

The project is "important" as it relates to a significant improvement in control of particulate emissions in an area that is designated nonattainment for $PM_{2.5}$. This improvement will be the result of the Agreement between the Illinois EPA and US Steel While the overall objective in revising Permit 95010001 is simple, to accommodate this improvement, implementation has required consideration of a variety of changes to a number of conditions in the previous permit. The actual nature and reason for the various changes to affected conditions was not necessarily readily apparent or obvious.[45] This permitting action must also appropriately consider and be coordinated with the processing of the construction permit for the new baghouse control system and the CAAPP permit that has been issued for the Granite City Works. Because of this complexity, it was reasonable to provide a public comment period on this proposed action.

It is also unquestioned that the Granite City Works has historically been of interest to the public, as demonstrated by the interest in other recent permitting actions for this source.[46] This further supports the decision of the Illinois EPA to provide a public comment period on a draft of the planned revisions to Permit 95010001. Moreover, a public comment period is mandatory for the application for construction permit for the new baghouse control system,

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[44] As noted by this comment, the Draft Guidance provides that there may be instances "where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary." The example given for a case where public participation may be justified for an administrative amendment is a change in ownership of a "proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company were operated." Draft Guidance, page 11.

[45] The current changes to Permit 95010001 required the Illinois EPA to again, consider the requirements that were applicable to the BOFs in light of both the existing ESP and the new baghouse. In particular, the Illinois EPA had to evaluate the removal of operational requirements that had become outdated or would become infeasible with the new baghouse control system. The Illinois EPA's review also considered the removal of operational requirements for the BOFs that had been made obsolete by new regulatory requirements that now apply.

[46] Indeed, USEPA recently acted on a petition from the American Bottom Conservancy for USEPA review of the CAAPP permit for this source issued by the Illinois EPA. In its decision, *Order Granting in Part and Denying in Part Petition for Objection to Permit*, December 3, 2012, USEPA granted the petition in part and the Illinois EPA will in the future be appropriately responding to USEPA's Order.

Application 11050006.[47] Because the public comment period for processing the revision to Permit 95010001 was combined with the public comment period for Application 11050006, it should not significantly affect the overall timing for permitting of the new baghouse control system.

30. USEPA has issued administrative amendments to PSD permits without providing for public participation.[48]

The fact USEPA has made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the specific circumstances of this action. As already explained, the Illinois EPA's decision to hold a public comment period considered the entirety of circumstances for this requested permit revision.[49]

31. State and local permitting authorities have also approved administrative amendments to PSD permits.[50, 51]

The fact that state and local permitting authorities may have made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the particular circumstances in this case.[52]

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[47] **A public comment period is mandatory on the application for the construction permit for the new baghouse control system as part of the Integrated Processing of that application, whereby the construction permit that is issued would authorize certain changes to the CAAPP permit for the Granite City Works by administrative amendment.**

[48] For example, in 2008, Hovensa requested the removal of provisions for rolling averages from the CO emission limits for certain emission units in its PSD permit, since continuous emissions monitoring was not required, making rolling averages impractical. USEPA agreed with Hovensa, concluding that "there is no benefit in requiring compliance based on rolling averages." USEPA revised the PSD permit accordingly, further explaining " . . .these requested changes will not result in any increase in emissions or cause any adverse air quality impacts. Therefore, EPA is approving these revisions administratively." (Letter to K. Antoine, Environmental Director, Hovensa, LLC, from B. Finazzo, Director, Division of Environmental Planning and Protection, USEPA, Region II, October 13, 2008.)

[49] **Incidentally, the changes to the PSD permit for the Hovensa facility, which was cited in this comment, merely entailed the removal of provisions for 365-day rolling averaging from the CO limits for certain units at this facility. As such, the nature and effect of these changes is readily apparent. Without annual averaging, the stringency of the CO limits was, in fact, increased, with compliance with limits now required on a short-term basis, rather than on a long-term basis.**

[50] For example, a Nebraska facility obtained an administrative amendment to its PSD permit to extend compliance dates for new control equipment. In issuing this administrative amendment, the Nebraska Department of Environmental Quality (NDEQ) stated, "[t]he emissions and regulatory requirements for this facility will not change due to this modification." (Administrative Amendment to Prevention of Significant Deterioration Construction Permit for Abengoa Bioenergy Corporation, Nebraska Department of Environmental Quality, January 21, 2004.)

[51] In March 2012, in its Permit Evaluation and Statement of Basis for Minor Revision to the Major Facility Review Permit for Los Medanos Energy Center, LLC, Facility No. B1866, the Bay Area Air Quality Management District (BAAQMD) referenced USEPA's Draft Guidance, explaining that the change to the PSD permit for the Medanos Energy Center was considered administrative. In particular, on page 6 and 7 of this document, the BAAQMD stated, "The facility received an Authority to Construct and a PSD permit on 9/10/99. ... The changes to the changes in clearances in the compressor section, installation of the dry Low NOx combustors, and change out of the exhaust gas path components are considered an administrative change under the 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The scope of these changes will not increase permitted emissions of any PSD pollutants (e.g. NO_2, CO, PM_{10}, $PM_{2.5}$, VOC, Lead, Fluorides, Sulfuric Acid Mist, Hydrogen Sulfide, Total Reduced Sulfur) and will not require any changes to permit conditions established during the original PSD permitting action. PSD does not apply to this permitting action."

[52] **Incidentally, with respect to the permitting action by the NDEQ cited by this comment, the Illinois EPA could not find an "administrative amendment" issued to Abengoa Bioenergy on January 21, 2004 that extended certain compliance dates in**

32. In the Project Summary, Footnote 13, the Illinois EPA stated that the changes to Permit 95010001 are being processing separately from the processing of the baghouse construction permit in order to subject the changes to Permit 95010001 "to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124. . . ." Although 40 CFR 124.1 indicates that Part 124 contains USEPA's "procedures for issuing, modifying, revoking and reissuing, or terminating all . . . PSD . . . 'permits' . . . ." Part 124 does not actually include procedures for revising PSD permits. In fact, 40 CFR 124.5(g)(1) is "Reserved for PSD Modification Provisions." Thus, Part 124 arguably does not apply to processing changes to PSD permits.

The observation made in this comment provides legal support for the administrative judgment that permitting authorities currently exercise in practice with respect to procedures that are used for processing revisions to PSD permits, including their reliance on USEPA's Draft Guidance. As USEPA has not codified the appropriate procedures for processing various types or classes of revisions to PSD permits, permitting authorities must exercise administrative judgment when selecting the appropriate procedure to use when processing a particular application for revisions to a PSD permit.

33. Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The requested changes result in no emissions increase at the source and no fundamental changes at the source. Very little review, if any, and no reanalysis of the original application, was necessary. The proposed changes in this case also would not increase emissions, adversely impact air quality or change any emissions or regulatory requirements. Accordingly, the proposed changes should have been made by administrative amendment.

As already discussed, the Illinois EPA does not disagree with the classification of the changes to Permit 95010001 as "administrative amendments" under the Draft Guidance. However, this guidance still directs permitting authorities to exercise discretion to provide for public participation for administrative amendments to PSD permits in instances where it may be warranted. More generally, irrespective of the Draft Guidance, the Illinois EPA had the authority and duty to appropriately consider whether public participation should be provided for the proposed changes to Permit 95010001. Given the circumstances of the proposed changes to this permit, including the nature of the changes and the public's previous interest in this source, the Illinois EPA reasonably elected to provide for public participation on a draft of the revised permit.

FOR ADDITIONAL INFORMATION

Questions about the permit decision should be directed to:

Bradley Frost, Community Relations Coordinator
Illinois Environmental Protection Agency
Office of Community Relations
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an issued PSD permit. Rather, the Illinois EPA found a permit issued on this date to Abengoa Bioenergy for modifications to this source, for which the draft permit had been subject to public participation. (Prevention of Significant Deterioration (PSD) Construction Permit for Abengoa Bioenergy Corporation, NDEQ, January 21, 2004.)

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ATTACHMENT 1:

LISTING OF SIGNIFICANT CHANGES BETWEEN THE DRAFT PERMIT AND THE ISSUED PERMIT

Findings

Finding 1(a)*(revised)*: The scope of this finding, which generally describes the nature of revisions that have been made in the revised permit, has been reduced. In the issued permit, like the draft permit, this finding explains that the permit has been revised to remove requirements that would be inconsistent with the use of a separate control system for secondary emissions of the BOFs, as is planned. In the issued permit, this finding no longer mentions revision because of inconsistency with requirements of the Iron and Steel NESHAP. It also does not mention inconsistency with requirements in the Clean Air Act Permit Program (CAAPP) permit for the source. This change responds to a comment that the Illinois EPA, in the Project Summary, improperly indicated that certain operational and monitoring requirements need not be included in the revised PSD permit because of requirements that now exist in the Iron and Steel NESHAP and in the CAAPP permit for the source. As observed by this comment, the relationship between the revised permit, the Iron and Steel NESHAP, and the CAAPP permit is not as simple as would have been indicated by this finding in the draft permit. In particular, as the revised permit would rely on provisions of the Iron and Steel NESHAP, this should be and is now explicitly provided for by the revised permit. Accordingly, in the issued permit, this finding only generally explains that revisions have been made in the revised permit to address the new control system planned for the BOFs.

Finding 3(c)*(new)*[53]: This new finding provides that the revised permit will not become effective when it is issued. Rather, the effectiveness of the revised permit will be appropriately delayed to address the possibility that a petition for review of this permit is submitted to the USEPA's Environmental Appeals Board (Board), appealing the revised permit. In addition, if the revised permit is appealed, the revised permit would not become effective until either the Board declines the petition for review or it makes a decision on the merits that does not remand the permit back to the Illinois EPA. These provisions are consistent with the relevant provisions of 40 CFR Part 124 that deal with issuance of PSD permits.[54] This change to the permit resulted from further evaluation in response to comments concerning the administrative process being used for the revision of this permit. These comments, which are addressed in the body of this Responsiveness Summary, argued that the Illinois EPA could have issued this revised permit without holding a public comment period. While considering those comments, the Illinois EPA realized that the draft of the revised permit would not include provisions to accommodate an appeal of the issued permit in accordance with 40 CFR Part 124. The revised permit should accommodate such an appeal because the Illinois EPA has processed the revision of this permit as a revision to a PSD permit. Accordingly, new Finding 3(c) has been included in the revised permit to enable an appeal of the permit in a manner that is consistent with the provisions of 40 CFR Part 124.[55]

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[53]In the issued permit, a cross-reference to this new finding is now provided after the "Date Revision Issued" in the information block at the top of the permit.

[54]The USEPA's Environmental Appeals Board hears appeals of PSD permit actions taken by USEPA and by other delegated permitting authorities. The USEPA's administrative rules for these appeal proceedings are found in 40 CFR Part 124, Procedures for Decisionmaking.

[55]It should be noted that new Finding 1(c) does not indicate that the Illinois EPA has determined that the issuance of this revised permit is a PSD permit action. Rather, it reflects a belief that it is appropriate to proceed as if the changes that have been made to this permit entail issuance of a revised PSD permit. Among other things, this is because of the form of the original permit, the extent of the changes that have been made to the permit, and US Steel's expressed desire for certainty in the authoritativeness of the revised permit. However, this does not mean that the Board, in response to a petition for review of the revised permit, could not conclude that the issuance of this revised permit was

Conditions

Condition 8*(revised)*: Wording in this condition, which restates the applicable state standard for opacity of emissions from the roof monitor of a BOF shop, 35 IAC 212.446(c), has been corrected. In the issued permit, this condition addresses a standard that applies to the "opacity of emissions" rather than to "visible emissions." It is evident that this condition addresses opacity as the limit is expressed as a percentage.[56] The change is a result of a comment, which is addressed in the body of this Responsiveness Summary, that expressed concern about the addition of a regulatory citation to this condition. As part of the further consideration that occurred, it was decided that this simple correction should be made to the wording of Condition 8.[57]

Condition 9/ Former Conditions 9 and 10 *(revised)*[58]: Condition 9 now requires US Steel to operate and maintain the BOFs and associated capture and control systems in accordance with applicable requirements of the Iron and Steel NESHAP. This change was made in response to a comment that the removal of previous Conditions 9 and 10, as proposed in the draft of the revised permit would act to eliminate independent enforceability of the permit. To maintain such enforceability, this comment further suggested that, as the revised permit would rely on provisions of the Iron and Steel NESHAP in place of the provisions that would be removed, the revised permit should require compliance with applicable provisions of this NESHAP. This would make the requirements of the Iron and Steel NESHAP that would now take the place of Conditions 9 and 10 actually enforceable under the permit. As the change suggested by this comment would merely memorialize the basis for removal of former Conditions 9 and 10 from the permit and enhance the practical enforceability of the substantive requirements in the permit, the Illinois EPA has proceeded as requested by this comment.

In the issued permit, Condition 9 clarifies the relationship between the revised permit and the Iron and Steel NESHAP. Since provisions of this NESHAP will serve in place of the compliance procedures in former Conditions 9 and 10 of the permit, Condition 9 in the issued permit addresses operational and maintenance requirements for the BOFs and associated capture and control systems. It specifically requires US Steel to comply with applicable provisions of this NESHAP for operational monitoring, performance testing, operating parameter limits, and operation and maintenance of equipment. With regard to performance testing, Condition 9 also further provides that unless US Steel is willing to consider all particulate measured by NESHAP testing to be PM-10, tests must also be conducted for emissions of PM-10. This additional requirement was needed because this NESHAP does not require performance testing for PM-10 emissions, since it sets particulate limits in term of PM. This further provision will require testing to also be conducted for PM-10 emissions if US Steel elects to consider the distinction between PM and PM-10 when determining compliance with Condition 8 (35 IAC 212.458(b)(23)), which sets limits for particulate emissions in terms of filterable PM-10.

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not a PSD permit action. Notably, emissions of particulate, which are addressed through the provisions of the permit that have been revised, were not originally subject to PSD review.

[56]Standards for visible emissions do not set limits for the percentage of visible emissions. Such standards may simply prohibit such emissions. They may also restrict the amount of time during which such emissions occur. For example, visible emissions from flares are commonly restricted to a total of 5 minutes in any two-hour period.

[57]In addition, other changes have been made between the draft and issued revised permit that involve conditions that the draft permit would not have retained. As these other conditions will now be "temporarily" retained in the permit until the new control system starts operation, as will be discussed later, it was necessary to make corrections to the wording and structure of those conditions. As these changes have now been made to those other conditions, it was also appropriate that Condition 8 be changed so that it now refers to opacity of emissions.

[58]The parenthetical notes in the issued permit, which identify provisions of the previous permit that are not in the revised permit, have also been appropriately adjusted to address this change. In the revised permit, these notes no longer indicate that Condition 9, Conditions 11, 12 and 13 and Condition 39 have been removed from the permit.

In the issued permit, Condition 9 is also accompanied by a note that explains that compliance with the operational and maintenance requirements of the Iron and Steel NESHAP has been required as the means to verify ongoing compliance with the requirements of Conditions 7 and 8 of the permit and to address implementation of good air pollution control practice for the BOFs. This note is appropriate to clearly document the role of Condition 9 in the revised permit. In the absence of this explanation, one might improperly assume that the purpose of Condition 9 in the revised permit is merely to facilitate ongoing compliance with the Iron and Steel NESHAP.

Condition 11*(revised)*: In the issued permit, this condition, which deals with use of flame suppression to minimize emissions from tapping of the BOFs, has been revised rather than being removed, as was proposed. Condition 11 in the issued permit now requires that flame suppression be used until the new baghouse control system begins operation. The original Condition 11, which requires use of flame suppression, has been retained as Condition 11(a). New Condition 11(b) now provides that this requirement for flame suppression will terminate when US Steel begins operation of a capture and control system for secondary emissions from the BOFs, as now planned, which makes flame suppression infeasible or unnecessary. This change was made in response to a comment suggesting that the revised permit should retain requirements that would be applicable until the new baghouse control system begins operation, rather than simply relying on the presence of these requirements in the CAAPP permit for the source to maintain their continued effectiveness until they actually cease to apply. As the approach suggested by this comment would maintain the enforceability of the subject requirements under the PSD permit, where they originated, the Illinois EPA has proceeded as requested by this comment.

Because this comment also addressed other requirements that would only continue in effect until the new baghouse control system begins operation, new Condition 11(b) also addresses the effectiveness of those other requirements. In particular, Condition 11(b) also provides that the operational requirements and associated monitoring requirements that have now been retained in the permit as Conditions 12 and 13 would also terminate upon startup of a new control system for secondary emissions.

Conditions 12 and 13 *(revised)*: In the issued permit, these conditions, which deal with operational requirements for BOFs and associated monitoring requirements, have been revised rather than being removed, as was proposed. This change was also made in response to the comment that suggested that the revised permit should retain requirements that would be applicable until the new control system begins operation, rather than relying on the source's CAAPP permit to maintain the effectiveness of requirements until such time. As the suggested approach would maintain the enforceability of the subject requirements under the PSD permit, the Illinois EPA has proceeded as requested by this comment.

Since the revised permit now explicitly requires compliance with existing operational and monitoring requirements until the new baghouse control system begins operation, these requirements had to be appropriately carried over in the revised permit with editorial and technical corrections and updates to these requirements. First, the organization and order of requirements in the issued permit have been revised for clarity. The operational requirements have been kept in Condition 12.[59] All monitoring requirements are now in Condition 13.[60] Second, the wording of both Conditions 12 and 13 has been simplified to improve

[59]In Condition 12 in the revised permit, the first requirement (Condition 12(a)), is now the general requirement to operate the BOFs with the stack gas flow rate of the ESP at certain minimum levels. Condition 12(b) now addresses the values of minimum set points while only a single furnace is in operation. Condition 12(c) now addresses the operational requirements when both BOFs are operating.

[60]In Condition 13, the first requirement (Condition 13(a)), is that US Steel operate and maintain a continuous operational monitoring system for the gas flow rate in the stack for the ESP, with recordkeeping for the monitored flow rates for each steel production cycle for the different phases of BOF operation (former Conditions 12(c) and 12(e)). Condition 13(b) now addresses operational monitoring for waste gas suction in the main downcomer duct of

clarity and facilitate practical enforceability.[61, 62] Lastly, the contents of Condition 13 have been revised to reflect developments in permit requirements for operational monitoring systems, with similar requirements now set for both systems.[63] These revisions were needed because requirements for these monitoring systems have now been included in the revised permit and the permit should now reflect current practice in permitting for establishing requirements for operational monitoring systems, with similar requirements for both systems.

Explanatory note following Condition 18 *(new)*: This new note explains that the previous note that followed Condition 18 has not been included in the revised permit. This change was made in response to a comment requesting this change. The parenthetical explanatory notes in the revised permit generally explain where conditions have been removed as part of the revision of the permit to avoid possible future confusion. They enable someone who is referring to the revised permit to understand that the gaps in the numbering of conditions in the permit is intentional. The change requested by this comment could also serve to avoid possible future confusion. It would make clear that the previous note, which provided a definition of a "BOF cycle," was also intentionally removed in the revised permit.[64] Accordingly, the change requested by this comment was made.

Condition 39 *(revised)*: In the issued permit, this condition, which deals with reporting of deviations, has been revised rather than being removed, as was proposed. This change was made in response to a comment

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the ESP, again requiring recordkeeping for each production cycle for the different phases of operation (former Conditions 13(a) and 13(d)). Condition 13(c) now provides for quarterly calibration of both the monitoring system for waste gas suction, as well as the monitoring system for stack gas flow rate (former Condition 13(f)). Condition 13(d) now contains the general obligations for these monitoring systems, addressing both the monitoring system for stack gas flow rate, as well as the system for waste gas suction (former Condition 13(b)).

[61]For example, in revised Condition 12, the wording of Condition 12(a) (former Condition 12(c)), now clearly provides that the ESP does not need to be operated at the established set points for purposes of emissions testing. While allowing for alternative set points to be approved, the wording of the former condition improperly suggested that testing to evaluate alternative set points would have to be conducted while operating at the established set points. If applied literally, this would have meant that testing to evaluate alternative set points could not actually be conducted, since the ESP would have to be operated at the established set points during such testing.

Condition 12(c) (former Condition 12(b)) also imposes requirements related to overlapping of charging and tapping when both BOFs are in use. The revised condition now provides that all four of these requirements must be part of US Steel's Operating Procedures for the BOFs. As there are four distinct requirements, the Operating Procedures for the BOFs must include them all, rather than only two of them, as was formerly specified.

[62]In Condition 13 of the revised permit, various flaws in the wording of the requirements for monitoring in the former permit have been eliminated. For example, the basic provision for monitoring of ESP stack gas flow rate in the revised permit, Condition 13(a), now explicitly requires US Steel to conduct continuous operational monitoring for this parameter. The previous condition (former Condition 12(d)), did not directly require such monitoring. Instead, it required US Steel to calibrate, operate and maintain a continuous strip chart recorder for this parameter "as measured by the stack gas flow meter during ESP use." As such, the former condition permit did not directly address operation of a continuous monitoring system for ESP stack gas flow rate. In addition, this condition did not actually require "monitoring" whenever the BOFs were being operated, only when the ESP was being operated.

[63]In the issued permit, identical requirements are set for both the continuous monitoring system for stack flow rate and the continuous monitoring system for waste gas suction. Both systems must be operated, maintained and calibrated by US Steel. The data that is recorded for both systems must include data for each steel production cycle for each phase of operation (charging, refining and tapping). Both systems must be calibrated on at least a quarterly basis. Finally, both systems must be operated at all times that a BOF is in operation and shall be used as mechanisms to ensure that adequate draft is maintained.

[64]The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle in the permit since it is inconsistent with the related definition for steel production cycle adopted by USEPA in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production cycle as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

that the removal of Conditions 9 and 10, as was proposed in the draft of the revised permit, would act to eliminate independent enforceability of the permit. Changes were made in the revised permit to directly respond to this comment, as have been discussed. Changes with respect to Condition 39 were also appropriate in responsed to this comment. In particular, Condition 39 is now retained so that the revised permit independently addresses reporting of deviations from permit requirements and does not rely solely on the parallel provisions of the CAAPP permit for reporting of any deviations from the requirements of the permit. As Condition 39 is now retained in the revised permit, necessary technical and editorial corrections have been to this condition.[65]

[65] In the revised permit, Condition 39 requires reporting of "deviations" rather than "exceedances," with such reporting required even if the deviations have been determined or identified by US Steel by a means other than the records required by the permit. As deviations are now addressed, which may include matters other than emissions exceedances, information is not required for the amount of emissions released. If a deviation involves excess emissions, information on the amount or nature of excess emissions would typically be included as part of the required description of the deviations. Finally, as reporting of deviations is also now addressed in the CAAPP permit for the source, the condition recognizes that the CAAPP permit may specify other requirements for reporting of deviations.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009324

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December 17, 2012

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REVIEWER JRM

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Amy Funk
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Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Funk:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

The Illinois EPA has prepared a Responsiveness Summary addressing comments and questions raised during the public comment period. Copies of the final permit decision and Responsiveness Summary for revisions to Permit 95010001can be obtained by the following means:

1. From the Illinois EPA's website:

   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
217/524-5023 – Facsimile
brad.frost@illinois.gov

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As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009326

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Mark Feldworth
1810 August, Apt. 2
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Feldworth:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

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   http://www.epa.state.il.us/public-notices/general-notices.html

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009328

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Erika Belmont
One Brookings Drive
St. Louis, MO 63130

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Belmont:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009330

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Robert Bewkes
One Brookings Drive
St. Louis, MO 63130

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Bewkes:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009332

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Kathy Andria
P.O. Box 4242
Fairview Hts., IL 62208

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Andria:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009334

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Art Chimes
4430 Arco Ave.
St. Louis, MO 63110

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Chimes:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009336

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Bryan Kresak
US Steel
1951 State Street
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Kresak:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009338
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

David Hacker
U.S. Steel
600 Grant St.
Pittsburgh, PA 15219

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Hacker:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY R009340

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Mike Dzurinko
US Steel
1350 Penn Ave.
Pittsburgh, PA 15222

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Dzurinko:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

The Illinois EPA has prepared a Responsiveness Summary addressing comments and questions raised during the public comment period. Copies of the final permit decision and Responsiveness Summary for revisions to Permit 95010001can be obtained by the following means:

1. From the Illinois EPA's website:

   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
217/524-5023 – Facsimile
brad.frost@illinois.gov

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As comments were submitted on the draft of the revision to Permit 95010001 that requested a change in the revised permit, the revised permit that has been issued does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009342
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

John Mountain
Dynamic Bulk Systems
1111-B Horan Drive
Fenton, MO 63026

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Mountain:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009344
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Matt Story
US Steel
1951 State Street
Granite City, IL 62034

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Story:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009346
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Jason Braxton
US Steel
1330 Penn Liberty Plaza
Pittsburgh, PA 15222

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Braxton:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009348
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Richard Wiese
US Steel
1951 State Street
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Wiese:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009350
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Ken Aud
United Congregations of Metro-East
3305 Village Lane
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Aud:

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009352
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Dan Watson
2583 Waterman
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Watson:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009354
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Linda Aud
United Congregations of Metro-East
3305 Village Lane
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Aud:

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217/524-5023 – Facsimile
brad.frost@illinois.gov

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Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009356
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Larry DiCicco
Murphy Co.
1233 N. Price Road
St. Louis, MO 63132

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. DiCicco:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

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   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

Illinois EPA
Bradley Frost, Office of Community Relations
888/372-1996 Toll Free – Environmental Helpline
217/782-7027 – Desk Line
217/782-9143 – TDD
217/524-5023 – Facsimile
brad.frost@illinois.gov

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009358
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Jessica Wernli
United Congregations of Metro-East
3222 D Bell Avenue
St. Louis, MO 63106

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Wernli:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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brad.frost@illinois.gov

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009360
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Oliver Rains, Jr.
SOAR
2402 IL Avenue
Granite City, IL 62040

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Mr. Rains:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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217/782-7027 – Desk Line
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brad.frost@illinois.gov

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Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

R009362

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Veronique LaCapra
St. Louis Public Radio

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009364
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Maxine Lipeles
Washington University
One Brookings Dr.
St. Louis, MO 63130-4899

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Lipeles:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

R009366

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Genevieve Damico
USEPA
77 West Jackson Blvd.
Chicago, IL 60604-3590

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Damico:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
R009368
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Monica Rios
Hodge Dwyer & Driver
3150 Roland Ave.
Springfield, IL 62705-5776

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Ms. Rios:

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001.

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Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 – (217) 782-2113

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

R009370

October 26, 2010

RECEIVED
OCT 26 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

USEPA, Region 5, A-18J
Attn: Ms. Cheryl Newton
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Re: Proposed Changes to a PSD Approval for United States Steel
Request to Initiate Consultation Under the Endangered Species Act

Dear Ms. Newton:

By this letter, the Illinois EPA is requesting that the USEPA initiate appropriate consultation under the federal Endangered Species Act for an application submitted by the United States Steel - Granite City Works ("US Steel"), for proposed changes to a PSD Approval for a Production Increase Project.

US Steel has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996, for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as a fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by the applicant.

Because the current application involves corrections to the emission information originally provided for the project, the requested revisions are being evaluated using the NSR rules that applied for the original application in January 1996. At that time, Granite City was designated nonattainment for ozone and PM_{10} and attainment for all other pollutants.

Accordingly, with the corrected emission rates for SO_2 and CO, which are higher than in the original application and current PSD approval, this project is still subject to a PSD review as a major modification for SO_2 and CO emissions.

An electronic copy of the application for this project will be e-mailed to Rachel Rineheart and Constantine Blathras of your staff.

If individuals at USEPA have questions about this project or require any assistance from the Illinois EPA in carrying out appropriate consultation, please contact Jason Schnepp at 217/524-3724 or Jason.Schnepp@Illinois.gov.

Sincerely,

Edwin C. Bakowski

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

cc: P. Blakley
C. Blathras
Jeff Sprague, Illinois EPA
Application File95010001
ID File 119813AAI

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 – (217) 782-2113

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

October 26, 2010

Todd Rettig, Division Manager
Division of Resource Review & Coordination
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

Re: Request for Consultation under the Illinois Endangered Species Protection Act
United States Steel Corporation, Granite City Works – Revision to Construction Permit/PSD Approval for Production Increase Project

Dear Mr. Rettig:

In accordance with the Illinois Endangered Species Protection Act, the Illinois EPA is filing the enclosed Agency Action Report to begin the required consultation process for the above referenced permit application.

United States Steel Corporation – Granite City Works ("US Steel") has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996 for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by US Steel.

An electronic copy of this application will be sent to Mike Branham of your office.

If you have any questions or require additional information, please contact Jason Schnepp at 217/524-3724 or Jason.Schnepp@Illinois.gov. Thank you in advance for your assistance.

Sincerely,

Edwin C. Bakowski

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Enclosures: AAR, Project Location Maps

cc: Jeff Sprague, Illinois EPA
Application File 95010001I
ID File 119813AAI

RECEIVED
OCT 26 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

R009372

Endangered Species Consultation Agency Action Report

(Illinois Administrative Code Title 17 Part 1075)
Division of Ecosystems and Environment

Date Oct 21, 2010

1. Indicate the government unit and type of action requiring consultation.

☐ Local Government ☒ State Agency

- ◉ Authorization (a unit of state or local government must issue a permit or other authorization)
- ○ Funding (a unit of state or local government will provide a grant, loan, or other direct support)
- ○ Performance (a unit of state or local government is performing the action, such as construction)

Name of government unit Illinois Environmental Protection Agency
Government contact name Jason Schnepp
Address 1021 North Grand Avenue East, Springfield, Illinois 62794-9506
Phone 217-524-3724 Fax 217-524-5023

If local government, is it a county highway or local roads department? ☐ Yes ☐ No

2. Will the project receive technical assistance or funding from the state of Illinois? ☐ Yes ☒ No

If yes, indicate the state agency providing support _____

Projects receiving state assistance (including federal funding through a state agency) must comply with the Interagency Wetland Policy Act. These projects will be reviewed for wetland impacts.

3. Applicant information

Applicant name United States Steel Corporation - Granite City Works
Contact person Jill Foust
Address 1951 State Street, Granite City, Illinois 62040
Phone 618-451-3391 Fax _____ E-mail jafoust@uss.com

4. Project information and location *(a map showing the location of the proposed action is required)*

Project name Revised Production Increase Project County Madison
Address 1951 State Street
City and zip Granite City 62040
Township/Range/Section (e.g., T45N,R9E,S2) T3N,R9W,S19-20
(Projects cannot be reviewed without the TRS)

Project description US Steel applied for a revision to its Construction Permit/PSD Approval for a Production Increase Project. This permit, which was originally issued on January 25, 1996, authorized increases in iron and steel production at the plant. The requested revision would correct sulfur dioxide emission rates for combustion of blast furnace gas. US Steel also applied for revisions to the permit to correct volatile organic material and carbon monoxide emission rates for combustion of natural gas.

If this is a resubmittal, please provide previous IDNR Project Code _____

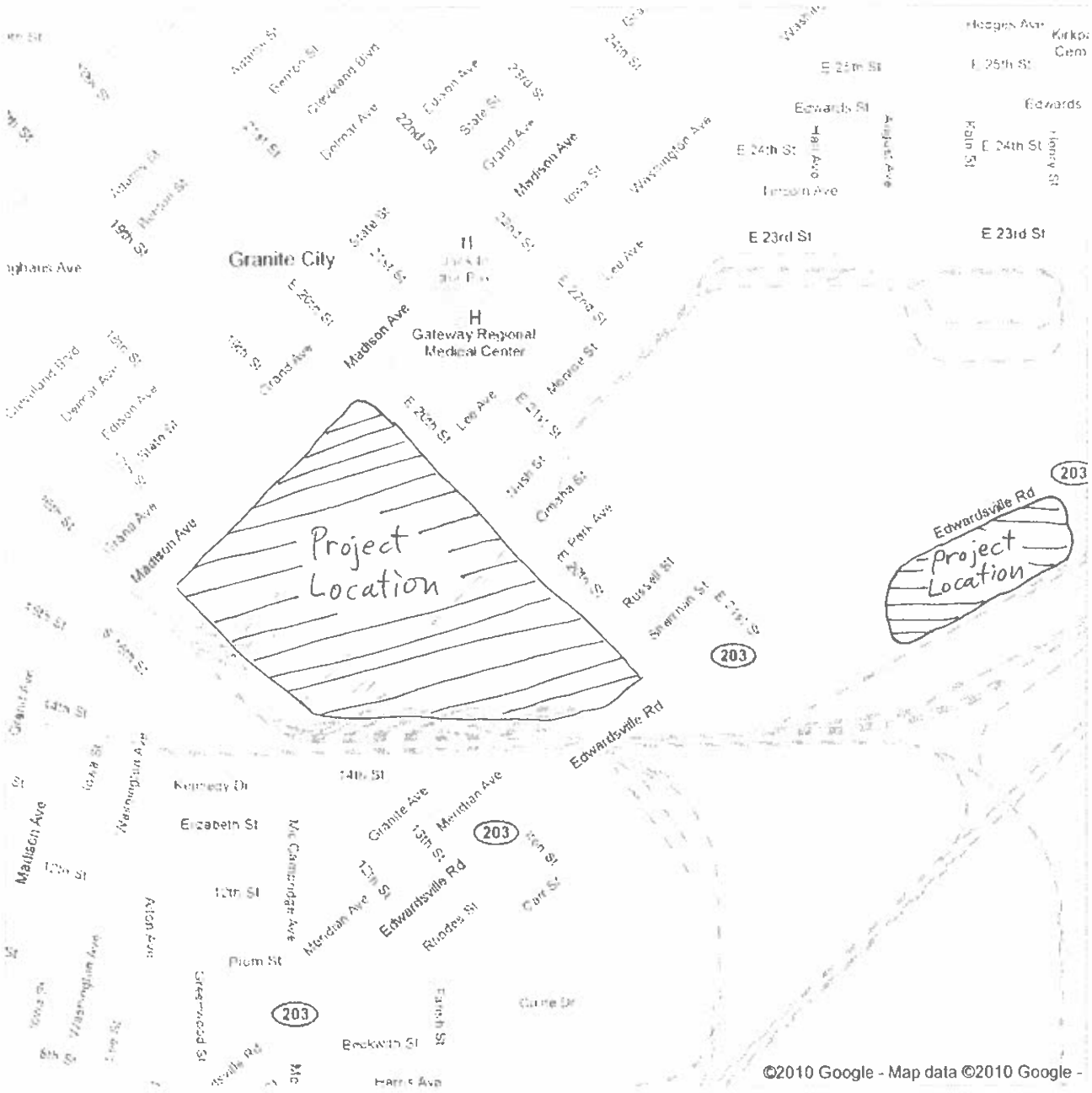
Mail completed form and map of project location to:
Illinois Department of Natural Resources
Division of Ecosystems and Environment
One Natural Resources Way
Springfield, IL 62702

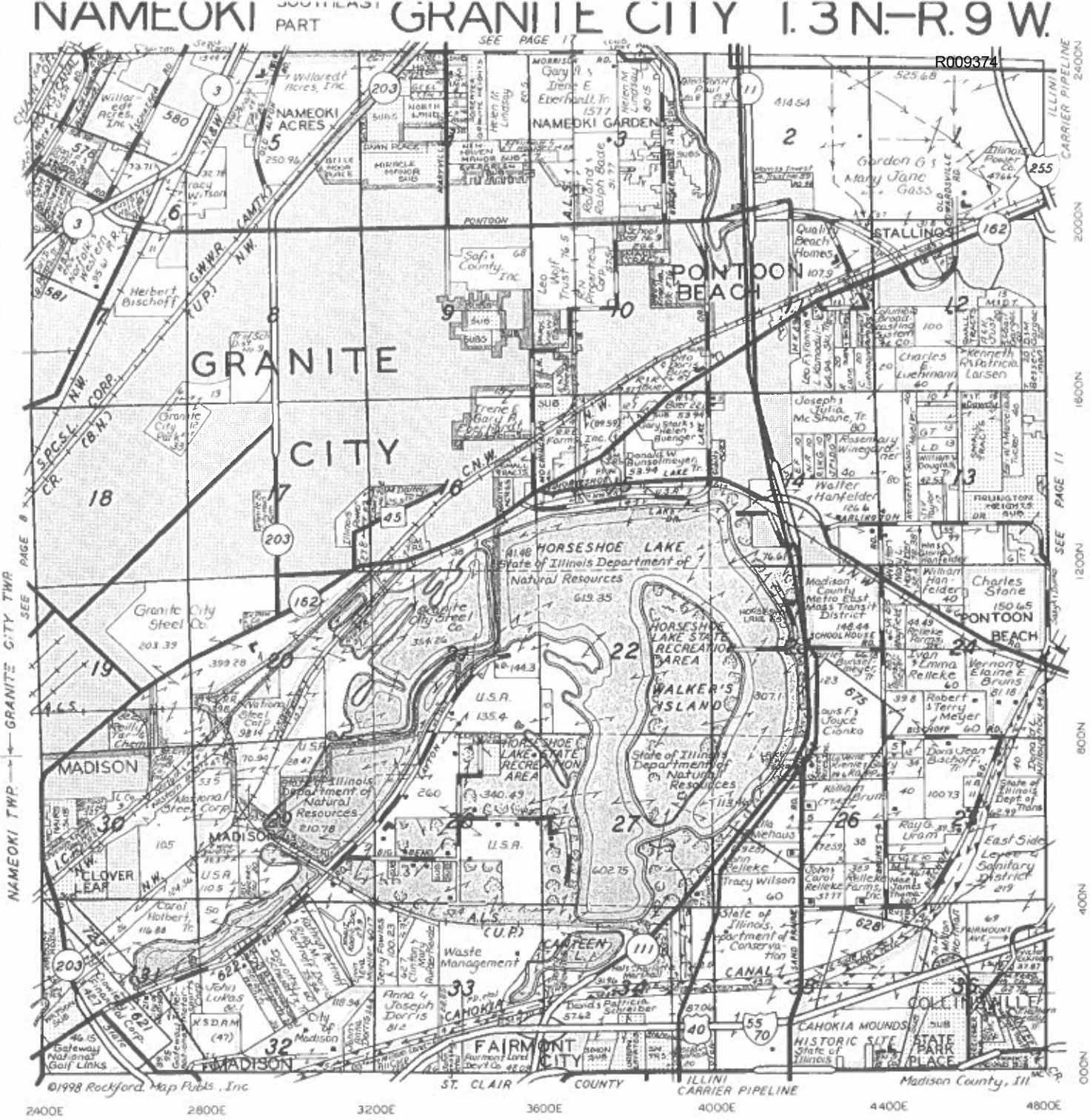
IDNR Use Only
Project Code: _____

R009373

Google maps

Notes





Juneau Associates, Inc., P.C.

CONSULTING ENGINEERS AND LAND SURVEYORS

2100 STATE STREET - GRANITE CITY, ILLINOIS 62040 — (618) 877-1400

200 UNIVERSITY PARK DRIVE, SUITE 280 - EDWARDSVILLE, ILLINOIS 62025 — (618) 659-0900

LAND AND TOPOGRAPHIC SURVEYS • WATER TREATMENT AND DISTRIBUTION SYSTEMS
STORM WATER AND SANITARY SEWAGE SYSTEMS • STREETS AND HIGHWAYS
COMMERCIAL AND INDUSTRIAL DEVELOPMENT • SUBDIVISION AND SITE DEVELOPMENT

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 – (217) 782-2113

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

October 26, 2010

Todd Rettig, Division Manager
Division of Resource Review & Coordination
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

Re: Request for Consultation under the Illinois Endangered Species Protection Act
United States Steel Corporation, Granite City Works – Revision to Construction Permit/PSD Approval for Production Increase Project

Dear Mr. Rettig:

In accordance with the Illinois Endangered Species Protection Act, the Illinois EPA is filing the enclosed Agency Action Report to begin the required consultation process for the above referenced permit application.

United States Steel Corporation – Granite City Works ("US Steel") has applied to the Illinois EPA for a revision to the Construction Permit/PSD Approval originally issued on January 25, 1996 for a project to increase iron and steel production at the plant. The requested revision would correct SO_2 emission rates for byproduct blast furnace gas, which is used as fuel at the plant. US Steel also applied for revisions to the permit to correct VOM and CO emission rates for combustion of natural gas. No additional increases in production or physical modifications are being requested by US Steel.

An electronic copy of this application will be sent to Mike Branham of your office.

If you have any questions or require additional information, please contact Jason Schnepp at 217/524-3724 or Jason.Schnepp@Illinois.gov. Thank you in advance for your assistance.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

RECEIVED
OCT 26 2010
Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Enclosures: AAR, Project Location Maps

cc: Jeff Sprague, Illinois EPA
Application File 95010001I
ID File 119813AAI

R009376

Endangered Species Consultation Agency Action Report

(Illinois Administrative Code Title 17 Part 1075)
Division of Ecosystems and Environment

Date Oct 21, 2010

1. Indicate the government unit and type of action requiring consultation.

☐ Local Government ☒ State Agency

◉ Authorization (a unit of state or local government must issue a permit or other authorization)
○ Funding (a unit of state or local government will provide a grant, loan, or other direct support)
○ Performance (a unit of state or local government is performing the action, such as construction)

Name of government unit Illinois Environmental Protection Agency
Government contact name Jason Schnepp
Address 1021 North Grand Avenue East, Springfield, Illinois 62794-9506
Phone 217-524-3724 Fax 217-524-5023

If local government, is it a county highway or local roads department? ☐ Yes ☐ No

2. Will the project receive technical assistance or funding from the state of Illinois? ☐ Yes ☒ No

If yes, indicate the state agency providing support _____

Projects receiving state assistance (including federal funding through a state agency) must comply with the Interagency Wetland Policy Act. These projects will be reviewed for wetland impacts.

3. Applicant information

Applicant name United States Steel Corporation - Granite City Works
Contact person Jill Foust
Address 1951 State Street, Granite City, Illinois 62040
Phone 618-451-3391 Fax _____ E-mail jafoust@uss.com

4. Project information and location *(a map showing the location of the proposed action is required)*

Project name Revised Production Increase Project County Madison
Address 1951 State Street
City and zip Granite City 62040
Township/Range/Section (e.g., T45N,R9E,S2) T3N,R9W,S19-20

(Projects cannot be reviewed without the TRS)

Project description US Steel applied for a revision to its Construction Permit/PSD Approval for a Production Increase Project. This permit, which was originally issued on January 25, 1996, authorized increases in iron and steel production at the plant. The requested revision would correct sulfur dioxide emission rates for combustion of blast furnace gas. US Steel also applied for revisions to the permit to correct volatile organic material and carbon monoxide emission rates for combustion of natural gas.

If this is a resubmittal, please provide previous IDNR Project Code _____

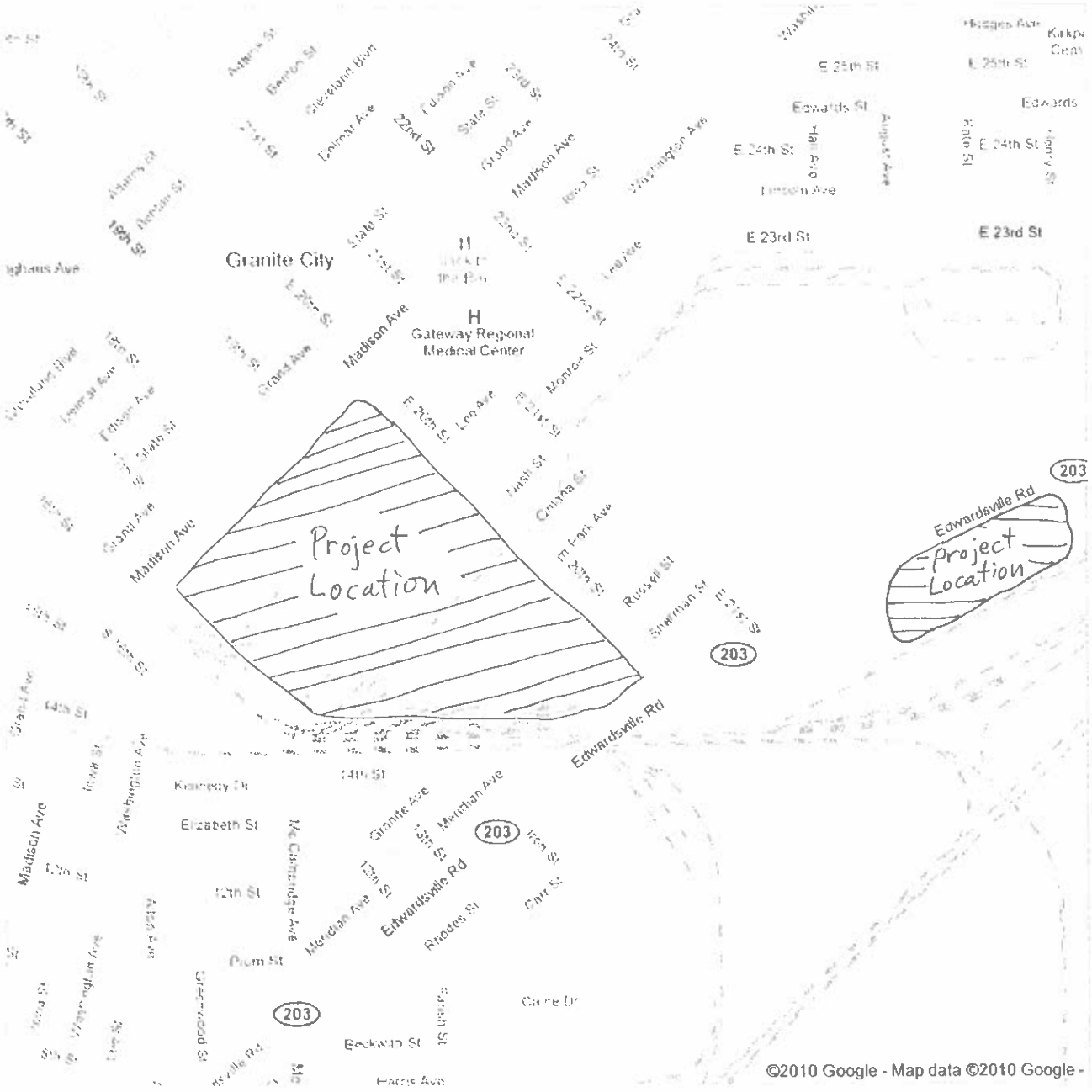
Mail completed form and map of project location to:
Illinois Department of Natural Resources
Division of Ecosystems and Environment
One Natural Resources Way
Springfield, IL 62702

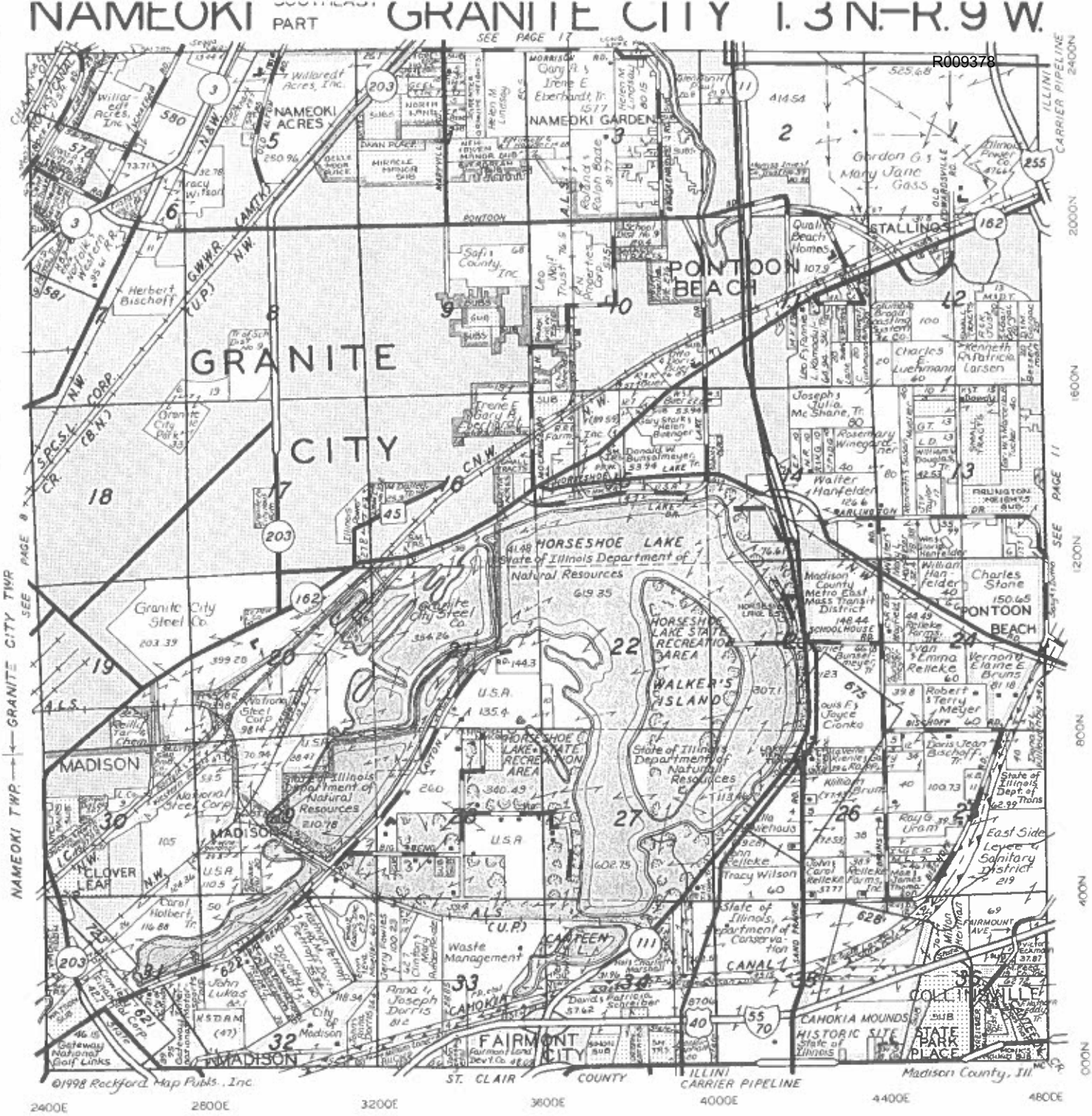
IDNR Use Only
Project Code: _____

R009377

Google maps

Notes





Juneau Associates, Inc., P.C.

CONSULTING ENGINEERS AND LAND SURVEYORS

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200 UNIVERSITY PARK DRIVE, SUITE 260 - EDWARDSVILLE, ILLINOIS 62025 — (618) 659-0900

LAND AND TOPOGRAPHIC SURVEYS • WATER TREATMENT AND DISTRIBUTION SYSTEMS
STORM WATER AND SANITARY SEWAGE SYSTEMS • STREETS AND HIGHWAYS
COMMERCIAL AND INDUSTRIAL DEVELOPMENT • SUBDIVISION AND SITE DEVELOPMENT

BOA REFERENCE SHEET

IEPA ID:	170000125683
Facility Name:	U.S. STEEL GRANITE CITY
Site ID:	119813AAI
Log #:	

FOR ADDITIONAL INFORMATION ON THIS, SEE CATEGORY 03M UNDER THIS SAME FILE HEADING.

DATE OF DOCUMENT	DESCRIPTION OF DOCUMENT
12/17/2012	AIR QUALITY MODELING -PERMIT # 95010001 DISK 1 AND DISK 2

R009380

Illinois EPA
Document Index Form

Batch ID: A000962

Doc ID: 2169902

BREAKm

Bureau ID: 119813AAI **Illinois EPA ID:** 170000125683

Location Name: US Steel Granite City

Category: 03M

Document Date: 12/17/2012

Permit ID: 95010001

Doc ID:

2169902R

Batch ID:

A000962M

IEPA ID:

170000125683|

Interest ID:

119813AAIQ

Cat ID:

03Mv

Date:

12/17/2012?

Permit ID:

950100011|

Permit Log:

Keyword:

APP SUPQ

Comment:

APP REVISION 05/21/2012\

P. Romaine – NE

R009381

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

119813AAA
95010001

May 21, 2012

CERTIFIED MAIL NO 7011 1150 0001 0452 9595
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield Illinois 62794

Subject: U.S. Steel - Granite City Works. Granite City, Ill
Facility ID No. 119813AAI
Application for Revision to Construction Permit #95010001

United States Steel Corporation-Granite City Works (U. S. Steel) is hereby requesting a revision to construction permit #95010001 originally issued in 1996. The principal purpose of the requested revision to this permit is to accommodate an emission reduction project for particulate emissions that U. S. Steel is planning for the two basic oxygen process (BOP) furnaces at the Granite City facility. This emission reduction project is the subject of a separate application for a construction permit, Application #11050006. As discussed in the application materials, the requested revisions to Construction Permit #95010001 would remove certain operational requirements for the BOP furnaces that would no longer be appropriate or practicable with the planned project. The requested revisions to Construction Permit #95010001 would also replace obsolete requirements for the BOP Shop with more stringent requirements adopted by USEPA pursuant to the promulgation of MACT standards. While the project is an emissions reduction project, the requested revisions to the permit would not affect the applicable emission standards and emission limits that apply to the BOP furnaces. Please find the following documents included with this application:

1. 199-CAAPP form
2. 197-CAAPP form-Check for $500
3. Cross Reference Table documents
4. Construction Permit #95010001

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

If you have any questions or require any additional information, please contact Jason Braxton at JKBraxton@uss.com or by phone at 412-433-6544 or contact Bryan Kresak at BMKresak@uss.com or by phone at 618-451-3391.

Sincerely,

Michael Terry
Division Manager, Steelmaking
United States Steel Corporation
Granite City Works

Illinois Environmental Protection Agency

R009382

Bureau of Air • 1021 North Grand Avenue East • P.O. Box 19506 • Springfield • Illinois • 62794-9506

FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION

FOR AGENCY USE ONLY

ID Number: 119813AAA Permit #: 95010001

☐ Complete ☐ Incomplete Date Complete:

Check Number: N/A Account Name:

This form is to be used to supply fee information that must accompany all construction permit applications. This application must include payment in full to be deemed complete. Make check or money order payable to the Illinois Environmental Protection Agency, Division of Air Pollution Control - Permit Section at the above address. Do NOT send cash. Refer to instructions (197-INST) for assistance.

Source Information

1. Source Name: United States Steel Corporation-Granite City Works
2. Project Name: Permit #95010001 Change for BOP ER project
3. Source ID #: (if applicable) 119813AA1
4. Contact Name: Bryan Kresak
5. Contact Phone #: (618) 451-3391

Fee Determination

6. The boxes below are automatically calculated.

Section 1 Subtotal $0.00 + Section 2, 3 or 4 Subtotal $500.00 = $500.00 Grand Total

Section 1: Status of Source/Purpose of Submittal

7. Your application will fall under only one of the following five categories described below. Check the box that applies. Proceed to applicable sections. For purposes of this form:

- **Major Source** is a source that is required to obtain a CAAPP permit.
- **Synthetic Minor Source** is a source that has taken limits on potential to emit in a permit to avoid CAAPP permit requirements (e.g.,FESOP).
- **Non-Major Source** is a source that is not a major or synthetic minor source.

☑ Existing source without status change or with status change from synthetic minor to major source or vice versa. Proceed to Section 2.

☐ Existing non-major source that will become synthetic minor to major source. Proceed to Section 4.

☐ New major or synthetic minor source. Proceed to Section 4.

☐ New non-major source. Proceed to Section 3.

☐ AGENCY ERROR. If this is a timely request to correct an issued permit that involves only an agency error and if the request is received within the deadline for a permit appeal to the Pollution Control Board. Skip Sections 2, 3 and 4. Proceed directly to Section 5.

$0.00 Section 1 Subtotal

This agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 ET SEQ. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Section 2: Special Case Filing Fee

8. **Filing Fee.** If the application only addresses one or more of the following, check the appropriate boxes, skip Sections 3 and 4 and proceed directly to Section 5. Otherwise, proceed to Section 3 or 4 as appropriate.

☐ Addition or replacement of control devices on permitted units.

☐ Pilot projects/trial burns by a permitted unit

☐ Land remediation projects $500.00

☐ Revisions related to methodology or timing for emission testing

☑ Minor administrative-type change to a permit

Section 3: Fees for Current or Projected Non-Major Sources

9. This application consists of a single new emission unit or no more than two modified emission units. ($500 fee)

10. This application consists of more than one new emission unit or more than two modified units. ($1,000 fee)

11. This application consists of a new source or emission unit subject to Section 39.2 of the Act (i.e., Local Siting Review); a commercial incinerator or a municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or an emission unit designated as a complex source by agency rulemaking. ($15,000 fee)

12. A public hearing is held (see instructions). ($10,000 fee)

13. Section 3 subtotal. (lines 9 through 12 - entered on page 1) 13. $0.00

Section 4: Fees for Current or Projected Major or Synthetic Minor Sources

Application contains modified emission units only	14. For the first modified emission unit, enter $2,000.	
	15. Number of additional modified emission units = x $1,000.	
	16. Line 14 plus line 15, or $5,000, whichever is less.	16. $0.00
Application contains new and/or modified emission units	17. For the first new emission unit, enter $4,000.	
	18. Number of additional new and/or modified emission units = x $1,000.	
	19. Line 17 plus line 18, or $10,000, whichever is less.	19. $0.00
Application contains netting exercise	20. Number of individual pollutants that rely on a netting exercise or contemporaneous emissions decrease to avoid application of PSD or nonattainment area NSR = x $3,000.	20. $0.00
Additional Supplemental Fees	21. If the new source or emission unit is subject to Section 39.2 of the Act (i.e. siting); a commercial incinerator or other municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or one or more other emission units designated as a complex source by Agency rulemaking, enter $25,000.	
	22. If the source is a new major source subject to PSD, enter $12,000.	
	23. If the project is a major modification subject to PSD, enter $6,000.	
	24. If this is a new major source subject to nonattainment area (NAA) NSR, enter $20,000.	
	25. If this is a major modification subject to NAA NSR, enter $25,000.	
	26. If the application involves a determination of MACT for a pollutant and the project is not subject to BACT or LAER for the related pollutant under PSD or NSR (e.g., VOM for organic HAP), enter $5,000 per unit for which a determination is requested or otherwise required. x $5,000.	26. $0.00
	27. If a public hearing is held (see instructions), enter $10,000.	
28. Section 4 subtotal (line 16 and lines 19 through 28) to be entered on page1		28. $0.00

Section 5: Certification

NOTE: Applications without a signed certification will be deemed incomplete.

29. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the information contained in this fee application form is true, accurate and complete.

by: _____
Signature

Michael Terry
Typed or Printed Name of Signatory

Division MGR, Steelmaking - U. S. Steel GCW
Title of Signatory

5/21/12
Date

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

R009384

Construction Permit Application for a Proposed Project at a CAAPP Source

For Illinois EPA use only	
ID No.:	119813AAI
Appl. No.:	9501/5001
Date Rec'd:	5-30-12
Chk No./Amt:	N/A

This form is to be used to supply general information to obtain a construction permit for a proposed project involving a Clean Air Act Permit Program (CAAPP) source, including construction of a new CAAPP source. Detailed information about the project must also be included in a construction permit application, as addressed in the "General Instructions For Permit Applications," Form APC-201.

Proposed Project

1. Working Name of Proposed Project:
U.S. Steel Granite City Works BOF Secondary Emissions Control System

2. Is the project occurring at a source that already has a permit from the Bureau of Air (BOA)?
☐ No ☒ Yes If Yes, provide BOA ID Number: 1 1 9 8 1 3 A A 1

3. Does this application request a revision to an existing construction permit issued by the BOA?
☐ No ☒ Yes If Yes, provide Permit Number: 9 5 0 1 0 0 0 1

4. Brief Description of Proposed Project:
The principal purpose of the requested revision to this permit is to accommodate an emission reduction project for particulate emissions that U. S. Steel is planning for the two basic oxygen process (BOP) furnaces at the Granite City facility.

Source Information

1. Source name:* United States Steel Corporation - Granite City Works

2. Source street address:* 1951 State Street

3. City:	4. County:	5. Zip code:*
Granite City	Madison	62040

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.

6. Is the source located within city limits? ☒ Yes ☐ No
If no, provide Township Name: Granite City

7. Description of source and product(s) produced:	8. Primary Classification Code of source:
Integrated Iron and Steel Making Facility	SIC: 3312 or NAICS:

9. Latitude (DD:MM:SS.SSSS):	10. Longitude (DD:MM:SS.SSSS):
38 42' 1.2241"	90 8' 56.4272"

* Is information different than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Identification of Permit Applicant

1. Who is the applicant?	2. All correspondence to: (check one)
☒ Owner ☐ Operator	☒ Source ☐ Owner ☐ Operator
3. Applicant's FEIN:	4. Attention name and/or title for written correspondence:
25-1897152	Bryan Kresak/Environmental Director

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Owner Information*

1. Name: United States Steel Corporation
2. Address: 600 Grant Street

3. City:	4. State:	5. Zip code:
Pittsburgh	PA	15219

* Is this information idifferent than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Operator Information (if different from owner)*

1. Name United States Steel Corporation - Granite City Works
2. Address: 1951 State Street

3. City:	4. State:	5. Zip code:
Granite City	IL	62040

* Is this information different than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Technical Contacts for Application

1. Preferred technical contact: (check one) ☒ Applicant's contact ☐ Consultant
2. Applicant's technical contact person for application:
   Jason Braxton, Environmental Engineer

3. Contact person's telephone number(s)	4. Contact person's e-mail address:
412-433-6544	jkbraxton@uss.com

5. Consultant for application:
   None

6. Consultant's telephone number(s):	7. Consultant's e-mail address:
N/A	N/A

Other Addresses for the Permit Applicant

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.

1. Address for billing Site Fees for the source: ☒ Source ☐ Other (provide below):

2. Contact person for Site Fees:	3. Contact person's telephone number:
Bryan Kresak	618-451-3391

4. Address for Annual Emission Report for the source: ☒ Source ☐ Other (provide below):

5. Contact person for Annual Emission Report:	6. Contact person's telephone number:
Bryan Kresak	618-451-3391

Review Of Contents of the Application	
NOTE: ANSWERING "NO" TO THESE ITEMS MAY RESULT IN THE APPLICATION BEING DEEMED INCOMPLETE	
1. Does the application include a narrative description of the proposed project?	☒ Yes ☐ No
2. Does the application clearly identify the emission units and air pollution control equipment that are part of the project?	☒ Yes ☐ No
3. Does the application include process flow diagram(s) for the project showing new and modified emission units and control equipment, along with associated existing equipment and their relationships?	☒ Yes ☐ No
4. Does the application include a general description of the source, a plot plan for the source and a site map for its location?	☐ Yes ☐ No ☒ N/A* * Material previously provided
5. Does the application include relevant technical information for the proposed project as requested on CAAPP application forms (or otherwise contain all relevant technical information)?	☒ Yes ☐ No
6. Does the application include relevant supporting data and information for the proposed project as provided on CAAPP forms?	☒ Yes ☐ No
7. Does the application identify and address all applicable emission standards for the proposed project, including: State emission standards (35 IAC Chapter I, Subtitle B); Federal New Source Performance Standards (40 CFR Part 60)?	☒ Yes ☐ No
8. Does the application address whether the project would be a major project for Prevention of Significant Deterioration, 40 CFR 52.21?	☐ Yes ☐ No ☒ N/A
9. Does the application address whether the project would be a major project for "Nonattainment New Source Review," 35 IAC Part 203?	☐ Yes ☐ No ☒ N/A
10. Does the application address whether the proposed project would potentially be subject to federal regulations for Hazardous Air Pollutants (40 CFR Part 63) and address any emissions standards for hazardous air pollutants that would be applicable?	☐ Yes ☐ No ☒ N/A* * Source not major ☐ Project not major ☒
11. Does the application include a summary of annual emission data for different pollutants for the proposed project (tons/year), including: 1) The requested permitted emissions for individual new, modified and affected existing units*, 2) The past actual emissions and change in emissions for individual modified units* and affected existing units*, and 3) Total emissions consequences of the proposed project? (* Or groups of related units)	☐ Yes ☐ No ☒ N/A * The project does not involve an increase in emissions from new or modified emission units.
12. Does the application include a summary of the current and requested potential emissions of the source (tons/year)?	☒ Yes ☐ No ☐ N/A* * Applicability of PSD, NA NSR or 40 CFR 63 to the project is not related to the source's emissions.
13. Does the application address the relationships and implications of the proposed project on the CAAPP Permit for the source?	☒ Yes ☐ No ☐ N/A* * CAAPP Permit not issued
14. If the application contains information that is considered a TRADE SECRET, has it been properly marked and claimed and all requirements to properly support the claim pursuant to 35 IAC Part 130 been met? Note: "Claimed" information will not be legally protected from disclosure to the public if it is not properly claimed or does not qualify as trade secret information.	☐ Yes ☒ No ☐ N/A* * No information in the application is claimed to be a TRADE SECRET
15. Are the correct number of copies of the application provided? (See Instructions for Permit Applications, Form 201)	☒ Yes ☐ No
16. Does the application include a completed "FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION," Form 197-FEE, a check in the amount indicated on this form, and any supporting material needed to explain how the fee was determined?	☒ Yes ☐ No

Signature Block

Authorized Signature:

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete and that I am a responsible official for the source, as defined by Section 39.5(1) of the Environmental Protection Act.

BY: _____
AUTHORIZED SIGNATURE

Michael Terry
TYPED OR PRINTED NAME OF SIGNATORY

Division MGR,Steelmaking-US Steel GCW
TITLE OF SIGNATORY

5/21/12
DATE

R009388

Attachment 1:

Summary of Proposed Revisions to Construction Permit 95010001

Proposed Revisions to Construction Permit 95010001			
Permit Condition	**Nature of Change**	**Description/Explanation**	**Related Condition in CAAPP Permit**
9(a) Opacity Observations for the BOF Shop	Remove	Requirement for observations of opacity of emissions from the BOF shop on at least a weekly basis. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the BOF shop pursuant to the CAAPP permit for the mill. In this regard, Condition 7.5.8(e)(i) of the current CAAPP permit (planned future Condition 7.5.8-1(a))) requires observations of opacity on five out of seven operating days until the new baghouse control system is in place for tapping emissions from the furnaces. Thereafter, the frequency of observations would be related to the level of opacity observed during preceding opacity observations, with opacity observations required on five of seven operating unless preceding observation show compliance by a clear margin. This is more stringent than Condition 9(a) of the construction permit. More generally, it is now appropriate for requirements for opacity observations for this BOF shop to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement and evolution of these requirements as part of the processing of CAAPP permits for the source. In addition, as changes to operational may occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit for the source) without having to separately revise this requirement in the historic construction permit.	7.5.8(e)(i)
9(b) Opacity Observations for the ESP	Remove	Requirement for observations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor on the ESP that exceeds two consecutive hours. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the ESP pursuant to the CAAPP permit. Periodic Monitoring will provide for regular review and appropriate refinement of monitoring requirement for the ESP as part the processing of the CAAPP permits for the mill. This conclusion is not altered by the fact that the relevant Periodic Monitoring provision in the CAAPP permit (Condition 7.5.8(e)(iii)/planned Condition 7.5.8-1(c)) is currently identical to this condition in the construction permit that would be removed. As changes to this requirement for opacity observation may	7.5.8(e)(iii)

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		be appropriate in the future, such changes should be able to be made as part of consideration of Periodic Monitoring during the processing of the CAAPP permit without having to also process a revised construction permit to make related changes to that permit. Moreover, because continuous opacity monitoring is now required for the ESP by the NESHAP, an argument could be made that the identical requirement in the CAAPP permit should already be considered inappropriate or unnecessary. This is because it would provide for a departure from the monitoring explicitly required by the NESHAP.	
9(c) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. This requirement in the construction permit is now unnecessary and inaccurate. The procedures by which opacity is to be determined for purposes of various standards for opacity are also specified by those standards. For example, for purposes of the NESHAP, visible observations of opacity from the BOF shop are to be determined by an average of 12 readings, rather than 24 reading, as generally provided for by USEPA Method 9. For the ESP, continuous opacity monitoring is required. Condition 9(c) is misleading as it generally suggests that opacity of emissions shall be determined using the procedures in Method 9. Incidentally, the flaws in this condition of the construction permit have been addressed in the related condition in the current CAAPP permit (Condition 7.5.8(e)(iii)(b)/planned Condition 7.5.8-1(c)(ii)). That condition, specifying that opacity shall be determined by Method 9, only applies to determinations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor.	7.5.8(e)(iii)(B)
10 and Attachment A General Operating Procedures for the BOF	Remove	Requirement to follow certain operating procedures and requirements for the BOFs and the existing ESP control system, as detailed in Attachment A of the construction permit. This requirement in the construction permit is now unnecessary and inaccurate. First, the NESHAP now generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, detailed requirements for proper operation of the BOFs and ESP system should not be "predetermined" by the terms of a construction permit. Second, as Attachment A of the construction permit sets out detailed requirements, it will become outdated and obsolete as appropriate operating procedures for the BOF evolve and improve over time. The planned emission reduction project is simply another such change that has made the detailed operational requirements in Attachment A of the construction permit outdated. Moreover, as certain changes to the operational requirements for the BOFs may be appropriate in the future, such changes should be able to be made during the processing of the CAAPP permit without having to also act to revise the related requirements in the construction permit. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would serve to confirm that the Illinois EPA has already determined that this requirement is obsolete.	-

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11 Flame Suppression for Tapping	Remove	Requirement for use of flame suppression for alloy addition. Use of flame suppression would become unnecessary when tapping is controlled by local capture hoods and a baghouse as part of the planned emission reduction project. This new equipment will provide better overall control of particulate emissions from tapping. Continued use of flame suppression would also act to reduce the capture efficiency of the new hoods. This is because the volume of a gas expands with temperature. Continued use of flame suppression would increase the temperature of the air in the area in which tapping occurs, acting to reduce the amount of air actually drawn in by the new capture hoods. Continued use of flame suprression would also pose a physical threat to the new capture system due to the higher temperature that would result and increased carryover of sparks into the ductwork. As a more general matter, an explicit requirement for use of flame suppression is not needed in the construction permit. First, the BOFs must be operated to comply with operating parameter limits pursant to the NESHAP. As the performance tests that set such limits are conducted with use of flame suprression, this emission control measure is appropriately considered an element of the operating parameter limit. This would not be the case only if a performance test showed compliance without use of flame suppression. Second, as other changes to control measures for tapping could occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit) without having to separately revise this requirement in the historic construction permit.	7.5.5-3(a)(ii)
12(a), (b)(i) and (c) Requirements for Minimum Set Points	Remove	Specific sets points for the ESP (i.e., minimum numerical requirements for the exhaust gas flow rate at the stack of the ESP) during different portions of the steel production cycle would be removed. When the new baghouse control system begins operating, these requirements would become outdated. The requirements that apply for tapping and charging or overlapping operation would cease to be relevant when tapping and charging are not controlled by the ESP. The requirement for refining when only a single furnace is operating would also cease to be relevant. When the new baghouse control system begins operation, the only gas flow from the ESP will be from the covers on the hoods and air flow associated with the refining step, without leakage from the charging hoods and associated ducts. Incidentally, the construction permit contemplated future changes to set points. Condition 12(c) allowed for the establishment of lower set points, requiring use of less aspiration air, based on a demonstration that a better level of control would occur. It also provided that the established set points would not apply during testing that was conducted for the purposes of revising set points. However, it did not address how such revised set point were to be approved or address future circumstances in which set points for certain modes of operation would no longer be appropriate. More generally, the existing requirements are made obsolete by the operating parameter limits for capture systems for the BOPFs that are established under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). These operating parameter limits more directly address operation of capture systems on BOPFs than the requirements that would be removed. This is because they address the operation of	7.5.6(h)(i) & (ii) and 7.5.5-3(b)(i)

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		the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOPFs or their associated control systems. The installation of the new baghouse control system is only an example of such a change under the NESHAP, which will trigger a requirement to conduct additional performance testing to establish new operating parameter limit for both the new and enhanced capture systems for charging and tapping and the existing covers on the BOF vessels.	
12(b)"(iii)" Requirements for Staggered Operation	Remove	Operational requirements related to staggering of the oxygen blowing of the BOPFs, the charging of hot metal and alloy addition during tapping would be removed. This change would be made because the new baghouse control system will be designed with sufficient capacity to simultaneously control charging of one BOF and tapping of the other. Accordingly, staggering of these operational steps by the BOFs will no longer be necessary for the BOFs to comply with applicable emission standards. More generally, the existing requirements for staggered operation of the BOFs are made obsolete by the operational requirements for the BOFs under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). The NESHAP directly requires that the BOFs be operated in a manner that is consistent with that during a performance test in which compliance with applicable emission standards has been shown. As such, the NESHAP would preclude overlap of different steps in the operation of the two BOFs if performance testing has not demonstrated the ability to comply when such steps overlapped. As such, only the most basic restriction on overlapping operation of the BOFs would be maintained, consistent with the construction permit for the baghouse control system, which does not allow simultaneous oxygen blowing of both vessels unless approved by a separate permit. This approach recognizes the current capacity of the control system for oxygen blowing (refining), which is currently insufficient for the oxygen blowing of both furnace vessels simultaneously, while also providing for possible improvements to the control system in the future.. Lastly, the operating parameter limits under the NESHAP more directly address operation of capture systems for secondary emissions from BOPFs than the requirements that would be removed. As related to the manner of operation, the NESHAP addresses the operation of the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack of the particulate control device. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOFs or their associated control systems. The installation of the new baghouse control system is such a change under the NESHAP, which will trigger a requirement to conduct further performance testing to establish new operating parameter limits for the new and enhanced capture systems for charging and tapping.	7.5.5-3(a)(i)

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12(d) and (f) Requirements for Monitoring of ESP Stack Gas Flow Rate	Remove	Requirements for operational monitoring for ESP stack flow rate. This change would be made because the underlying requirements for minimum stack gas flow rate would be removed. Monitoring of individual capture systems and the air flow into the ESP would more directly address proper operation of the ESP control system. See also above discussion for Conditions 12(b)"(iii)."	7.5.8(d)(ii) & (iii)
12(e) Recordkeeping for ESP Flow Rate for Charging, Refining and Tapping	Remove	Requirement that records for ESP stack gas flow rate be kept for charging, refining and tapping. This requirement will become obsolete with the baghouse control system because the ESP would no longer be used to control charging and tapping. More generally, it is now appropriate for operational monitoring requirements for the BOFs, including monitoring requirements for the capture systems for the BOFs, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements as part the processing of CAAPP permits for the source.	7.5.9(b)(vii)
13(a) and (c) Operational Monitoring for Waste Gas Suction for the ESP System	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping. More generally, operational monitoring requirements for the BOFs, including monitoring related to the capture systems, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements.	7.5.8(d)(i) & (i)(B)
13(b) Role of the Operational Monitoring for Waste Gas Suction for the ESP	Remove	Provision that the waste gas suction monitor for the ESP will be used to ensure that sufficient draft is maintained in the capture systems on the BOFs so as to maximize capture of emissions. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping.	7.5.8(d)(i)(A)
13(d) Operational Monitoring for Static Pressure in the ESP Downcommer Duct	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle would be removed. This change would be made because, with the baghouse control system, the ESP would no longer be used to control charging and tapping. In addition, this monitoring requirement is made obsolete by the NESHAP, which now provides a comprehensive approach to operational monitoring for capture system for secondary emissions from BOFs.	7.5.8(d)(i)(C)
14(a and (b) Requirements for Visual Inspections of the Capture Systems in the ESP Control System	Remove	Requirements for regular inspections of capture systems associated with the ESP. This requirement is made obsolete by the work practices required by the NESHAP. Monthly inspection of the equipment that is important to the performance of the total capture system and repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. In addition, when the new baghouse system begins operation, these requirements would no longer address the existing capture systems for charging.	7.5.8(d)(iv)(A) & (B)
14(c)	Remove	Requirement for prompt repair of leaks or areas otherwise noted to be in need of repair.	7.5.8(d)(iv)(C)

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Requirement for Prompt Repair of Leaks and Other Defects		This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) Repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. This would require that timely maintenance be performed as necessary to maintain compliance.	
15(a) Requirement to Operate, Maintain and Repair the BOF ESP to Comply with the Permit	Remove	Requirement to generally operate, maintain and repair the ESP to comply with this construction permit. This requirement is obsolete as it would inappropriately impose a redundant obligation to comply with other requirements in the construction permit. As those other requirements would be present and applicable, as reflected in an appropriate permit for the Granite City Works, US Steel would already legally be obligated to take necessary actions to comply with those requirements. To the extent that US Steel was generally being required to properly operate and maintain the ESP, that requirement should exist independent of the other conditions of the permit. In this regard, this obligation for good air pollution control practice is now explicitly required by the NESHAP.	7.5.5-3(b)(ii)
15(b) Requirement for an Adequate Inventory of Spare Parts	Remove	Requirement to maintain an adequate inventory of spare parts for the ESP. This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. Moreover, the requirement does not directly address maintenance of the ESP as should facilitate proper operation of the ESP. Rather, a separate requirement would be established related to the ESP that is not directly related to either maintenance or operation of the ESP.	
16 Requirement for Written Operating Procedures for the BOF ESP	Remove	Requirement to maintain written operating procedures This requirement in the construction permit is now unnecessary. The NESHAP now generally requires operation of the BOFs in accordance with good air control practice with preparation and implementation of a written operation and maintenance plan for the BOFs. (See 40 CFR 63.7800(b).)	
17 Required Recordkeeping for the ESP	Remove	Requirements for keeping certain records related to the BOFs and the existing ESP control system would be removed, including records for: (i) Operating time of the BOFs; (ii) Operating time of the capture systems and certain operating data for these systems; (iii) Operating times of the ESP and certain performance data for the ESP; and (iv) Inspection and maintenance records for the existing capture systems and the ESP. The recordkeeping requirement would be removed because they have been replaced by requirements that more directly address proper operation of the ESP, including recordkeeping requirements of the NESHAP. In particular, records for "operating times" of the BOFs, the ESP capture systems and the ESP itself do not directly address lapses in control of particulate emissions, i.e., periods when a BOF operates without proper capture and control of emissions. The NESHAP, 40 CFR 63.7834, includes recordkeeping for preventative maintenance that is performed and corrective actions that are taken.	7.5.9(b)(i) thru (iv)

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18 and Table 2	Revise	A parenthetical phrase would be removed from this condition, which contains permit limits for the emissions of the ESP. The phrase indicates that the emissions of the ESP include emissions from charging, refining and tapping of the BOPF. The phrase would be removed because it would no longer be accurate when charging and tapping emissions are controlled by the new baghouse control system.	-
Note (following Condition 18)	Remove	Explanatory note describing the steel production cycle would be removed. The note would be removed because it is inconsistent with the definition of the steel production cycle in the NESHAP, 40 CFR 63.7852, which indicates that the steel production ends after slag is removed from the BOF vessel, rather than at the end of the tapping process.	-
33(a) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. See discussion for Condition 9(c), which is essentially identical to Condition 33(a).	-
33(b) Requirement for Personnel to Conduct Opacity Observations	Remove	Requirement that the source have "...at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit." This requirement is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from various operations at the Granite City Works. The Periodic Monitoring established by the CAAPP permit directly addresses the opacity observation that the source must conduct or have conducted. By contrast, this requirement of the construction only indirectly addresses opacity observations, as it deals with the staffing that must be available to conduct such observations. Moreover, as such, it could be construed to provide for a failure to actually conduct opacity observations if US Steel had otherwise met with this requirement related to availability of personnel for such observations. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would simply confirm that the Illinois EPA has already determined this requirement to be obsolete.	-
37 Coordination with Other Existing Permits	Revise	Provision would be revised to further define "existing operating permits" as permits issued for the Granite City Works as of January 15, 1996. This change would be made so that the issuance of a revised construction permit would not affect the hierarchy of permits for the source based on their chronology. In particular, the construction permit would only supersede operating permits that were issued before the original issuance of the construction permit and not subsequent operating permits issued for the source, including the CAAPP permits.	-
39 Requirement for Reporting of Deviations	Remove	Requirement for reporting deviations from the construction permit. This requirement is obsolete because reporting of deviations is now a routine element of CAAPP permits, including the CAAPP permit for the Granite City Works.	-

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Illinois EPA
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May 20, 1999

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2013
REVIEWER JRM

Mr. Robert Hodanbosi
Mr. Charles Lagges
STAPPA/ALAPCO
444 North Capitol Street, NW
Washington, DC 20001

Dear Messrs. Hodanbosi and Lagges:

I am writing in response to your May 15, 1998 and December 11, 1998 letters. Your May 15, 1998 letter addressed the Environmental Protection Agency's (EPA's) use of its authority to object to permits proposed by State permitting authorities under the Clean Air Act's (CAA's or the Act's) title V operating permit program and focused primarily on interface issues between title V and title I [or new source review (NSR)] of the Act. You expressed concern that EPA's use of its review authority leading to comments and objections to proposed permits was impacting permit issuance rates. Your letter also detailed a number of concerns and disagreements with the positions underlying certain objections and comments that have been made by EPA Regions. In your December 11, 1998 letter, you raised concerns regarding maximum achievable control technology (MACT)/title V interface issues.

As you are aware, EPA has listened to your concerns and thoroughly evaluated your views. Since receipt of your letters, there has been continued dialogue on the many issues raised in the letters among permitting authorities, Regions, and EPA Headquarters. Examples include our July 8, 1998 meeting, monthly STAPPA/ALAPCO title V committee calls, Regional/State title V workshops, specialty meetings such as the MACT/title V issues meeting, and, most recently, the STAPPA title V workshop in Dallas. In these interactions we have heard each other's views and, in most cases, reached some common understanding of the issues and solutions. In fact, the number of objection letters has dropped significantly over the past few months. Through the efforts of the permitting authorities and Regions, we have become increasingly successful at resolving specific permit issues.

I believe it is important to share EPA's views on the issues your letters highlighted. Thus, Enclosure A sets forth EPA's policy on the title I/title V interface issues and concerns raised in your May 15, 1998 letter. Enclosure B provides our present understanding of the

MACT-title V interface issues raised in your December 11, 1998 letter. I seek your thoughts on these MACT-title V issues with a view toward resolving any disagreements we may have as soon as possible.

Two issues in your May 15 letter that do not readily fall into either attachment are periodic monitoring and the State implementation plan (SIP) backlog. Our views on these follow.

Periodic Monitoring

We believe that the issuance of the September 15, 1998 periodic monitoring guidance addressed your questions on this issue. Presently, we are working on the Periodic Monitoring Technical Reference Document. This document will provide general technical guidance for complying with the title V periodic monitoring requirements and will present specific examples of monitoring that satisfy these requirements. This document is primarily targeted toward the plant managers and operators who will design and operate such monitoring appropriate to site-specific situations. The document will also be helpful for permitting authorities and permit writers who review and supplement or prescribe monitoring for individual permits. A draft of this document was made available for public review via EPA's website on April 30.

SIP Backlog

The EPA understands that the SIP backlog is limited primarily to California. Budgetary constraints in FY 1999 will hamper our ability to completely eliminate the backlog in the near term. However, Region IX has redirected significant resources within its air program to address this issue during FY 2000. Region IX will continue to work closely with the California Air Resources Board and local air districts to prioritize their crucial SIP submittals for expeditious action by EPA in order to minimize the impact on title V permit issuance. The Region is also actively exploring additional mechanisms to expedite SIP actions.

I believe that the responses set forth in this letter and the enclosures will be helpful in informing you of the principles that will guide future EPA action in reviewing draft and proposed title V permits. Together we can move forward to fulfill the recent Agency goal of issuing all permits by January 2001. Whether and how EPA applies these policies in any particular permit proceeding will depend upon the specific review undertaken for particular permits. As you develop permits over the coming months, I ask that you work with our Regional Offices on implementation and involve management where you feel it necessary. Finally, the responses in this letter are not binding on any party, do not represent final Agency action, and cannot be relied upon to create any legal rights or obligations enforceable by any party.

I appreciate your interest in identifying issues you feel affect the successful implementation of the title V program. The upcoming STAPPA/ALAPCO meeting in May might provide a good forum to discuss EPA's positions on these matters.

Sincerely,

/s/

John S. Seitz
Director
Office of Air Quality Planning
and Standards

Enclosures

cc: Bill Becker, STAPPA/ALAPCO
Bruce Buckheit, EPA/OECA
Robert Colby, Chattanooga-Hamilton County, Tennessee
Alan Eckert, EPA/OGC
Bliss Higgins, Louisiana
Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning and Protection, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Multimedia Planning and Permitting Division, Region VI
Director, Air, RCRA, and Toxics Division, Region VII
Assistant Regional Administrator, Office of Partnerships and Regulatory Assistance, Region VIII
Director, Air Division, Region IX
Director, Office of Air, Region X

ENCLOSURE A

FEDERAL ENFORCEABILITY

Title V and the part 70 regulations are designed to incorporate all Federal applicable requirements for a source into a single title V operating permit. To fulfill this charge, it is important that all Federal regulations applicable to the source such as our national emission standards for hazardous air pollutants, new source performance standards, and the applicable requirements of SIP's and permits issued under SIP-approved permit programs, are carried over into a title V permit.[1] All provisions contained in an EPA-approved SIP and all terms and conditions in SIP-approved permits are already federally enforceable (see 40 CFR § 52.23).[2] The enactment of title V did not change this. To the contrary, all such terms and conditions are also federally enforceable "applicable requirements" that must be incorporated into the Federal side of a title V permit [see CAA § 504(a); 40 CFR § 70.2)]. Thus, if a State does not want a SIP provision or SIP-approved permit condition to be listed on the Federal side of a title V permit, it must take appropriate steps in accordance with title I substantive and procedural requirements to delete those conditions from its SIP or SIP-approved permit. If there is not such an approved deletion and a SIP provision or condition in a SIP-approved permit is not carried over to the title V permit, then that permit would be subject to an objection by EPA.

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[1]The term "SIP-approved permit" is used in this letter to refer to permits issued pursuant to major or minor new source review (NSR) or prevention of significant deterioration (PSD) permit programs approved into SIP's (or promulgated under 40 CFR § 52.21 in States implementing the federal PSD program via delegation from EPA), as well as federally enforceable State operating permits (FESOP's) issued pursuant to SIP-approved operating permit programs. For purposes of this discussion, the term "NSR" includes major nonattainment NSR, minor NSR and PSD.

[2]By the term "federally enforceable," I refer to EPA's and citizens' ability to enforce a provision under sections 113/167 and 304 of the Clean Air Act, respectively. The term "Federally enforceable" has also been used in the past in another context to identify a smaller subset of provisions that may be used to limit a source's "potential to emit." See memorandum from John S. Seitz, Director, Office of Air Quality and Planning Standards, EPA, re Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Jan. 25, 1995), at 2 (explaining that for purposes of limiting a source's PTE, "limitations must be enforceable as a practical matter"). This letter does not address this second usage.

NEW SOURCE REVIEW LOOKBACK (INCLUDES BEST AVAILABLE CONTROL TECHNOLOGY/LOWEST ACHIEVABLE EMISSION RATE LOOKBACK)

All sources subject to title V must have a permit to operate that "assures compliance by the source with all applicable requirements." See 40 CFR § 70.1(b); CAA section 504(a). Applicable requirements are defined in section 70.2 to include: "(1) any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking under Title I of the [Clean Air] Act. . . ." Such applicable requirements include the requirement to obtain preconstruction permits that comply with applicable preconstruction review requirements under the Act, EPA regulations, and SIP's. See generally CAA sections 110(a)(2)(C), 160-69, & 173; 40 CFR §§ 51.160-66 & 52.21.

For the PSD and major nonattainment NSR permit programs, as you know, preconstruction review requirements include use of best available control technology (BACT) or lowest achievable emission rates (LAER), respectively, for each regulated pollutant that would be emitted in significant amounts and at each emissions unit at which an emissions increase would occur. In determining BACT and LAER, as in implementing other aspects of the PSD or NSR programs, the State exercises considerable discretion. Thus, EPA lacks authority to take corrective action merely because the Agency disagrees with a State's lawful exercise of discretion in making BACT and LAER or related determinations. State discretion is bounded, however, by the fundamental requirements of administrative law that agency decisions not be arbitrary or capricious, be beyond statutory authority, or fail to comply with applicable procedures. Consequently, State-issued preconstruction permits must conform to the applicable requirements of the Clean Air Act and the SIP, and failure to do so may result in corrective action by EPA.

In addition to Clean Air Act enforcement authorities, another form of corrective action available to EPA is the title V objection authority under CAA section 505(b). The Agency may object to issuance of any permit that EPA determines is "not in compliance with the applicable requirements of the Act, including the requirements of an applicable implementation plan." See CAA section 505(b)(1); see also CAA section 113(b)(1) (enforcement authority available for violations of "any requirement or prohibition of an applicable implementation plan or permit.")

Pursuant to EPA policy, the Agency generally will not object to the issuance of a title V permit due to concerns over BACT, LAER, or related determinations made long ago during a prior preconstruction permitting process. However, regarding recently issued NSR/PSD permits, note that EPA policy is to provide adverse comments concerning the substantive or procedural deficiencies of a preconstruction permit during the NSR/PSD permitting process. EPA may thereafter take corrective action, including objecting to the title V permit if its comments were not resolved by the State. Similarly, where the BACT/LAER determination is made during a concurrent or "merged" preconstruction permit and title V permit process, EPA may object to the title V permit due to an improper determination. Finally, the Agency may object to or reopen a

title V permit in response to a public petition showing that title I preconstruction permitting requirements have not been met.

Moreover, where EPA believes that an emission unit has not gone through the proper preconstruction permitting process (and therefore one or more applicable requirements are not incorporated in the draft or proposed title V permit), EPA may object to the title V permit. The permitting authority may then resolve the issue either by demonstrating to EPA's satisfaction that preconstruction permitting requirements were not applicable or by incorporating a schedule requiring the source to obtain a preconstruction permit.

Where an EPA Region is unable to obtain adequate information during its review period to support an objection, the permit may be issued with "placeholder" language stating that the permit shield does not attach to the emission units at issue. In such instances, the permitting office should also consider a referral to the enforcement office for further investigation. The placeholder language would say that while EPA is evaluating the applicability of the PSD/NSR program, a permit shield is not available with respect to applicability of PSD/NSR and that additional applicable requirements may apply should EPA's evaluation show that PSD/NSR applies. If EPA determines that the source is not subject to any additional requirements, the permit can be reopened to provide a permit shield with respect to these requirements.

As a final point, EPA believes that confusion over the "lookback" issue may have arisen from a misunderstanding of language in White Paper I. We would like to take this opportunity to clarify the meaning of that language. Specifically, White Paper I states that:

> Companies are not federally required to reconsider previous applicability determinations as part of their inquiry in preparing part 70 permit applications. However, EPA expects companies to rectify past noncompliance as it is discovered. Companies remain subject to enforcement actions for any past noncompliance with requirements to obtain a permit or meet air pollution control obligations. In addition, the part 70 permit shield is not available for noncompliance with applicable requirements that occurred prior to or continues after submission of the application. [White Paper for Streamlined Development of Part 70 Permit Applications, Office of Air Quality Planning and Standards, EPA (July 10, 1995) at 24].

This passage is intended to convey EPA's belief that a company's responsible official does not have a federal obligation to reconsider previous applicability determinations for the purpose of certifying to the truth, accuracy and completeness of the permit application. Noncompliance of which companies are aware must be reported in the title V applications and corrected expeditiously. This passage further states that noncompliance arising from previous applicability determinations is subject to enforcement and is not covered by the part 70 permit shield. This language does not limit EPA's ability or authority to object to proposed title V permits based on such previous determinations or to request information (from States and sources) related to such decisions in order to assure compliance with applicable requirements.

SUPERSESSION

It is the Agency's view that title V permits may not supersede, void, replace, or otherwise eliminate the independent enforceability of terms and conditions in SIP-approved permits. To assure compliance with "applicable requirements" such as SIP-approved permit terms and conditions, title V permits must record those requirements, but may not eliminate their independent existence and enforceability under title I of the Clean Air Act (i.e., may not supersede them). Title V permits may state that they "subsume" or "incorporate" SIP-approved permit terms and conditions as EPA interprets such statements to mean that the title V permit includes all SIP-approved permit terms, but does not supersede, void, replace, or otherwise eliminate their independent legal existence and enforceability. Regardless of terminology, to the extent that title V permits are used to accomplish the legal result of supersession, EPA believes that such use is improper.

As noted in the previous section, title V permits must assure compliance with terms and conditions in SIP-approved permits. In enacting title V, Congress did not amend title I of the Act and did not intend the title V permitting program to replace the title I permitting programs. SIP-approved permits must remain in effect because they are the legal mechanism through which underlying NSR requirements (from the Act, federal regulations and federally-approved SIP regulations) become applicable, and remain applicable, to individual sources. NSR programs provide the relevant permitting entity with the authority to impose source-specific NSR terms and conditions in legally enforceable permits, and provide States, EPA and citizens with the authority to enforce these permits. Because State title V programs do not provide the authority for the establishment and maintenance of SIP-approved permit requirements, the title V permit cannot "assure compliance" with those requirements unless the underlying implementation and enforcement mechanism for the NSR requirements--the SIP-approved permit--remains valid.

The supersession of SIP-approved permits poses additional problems that EPA believes are inconsistent with the structure and purposes of title V and title I of the Act. First, while SIP-approved permits impose continual operational requirements and restrictions upon a source's air pollution activities and, accordingly, may not expire so long as the source operates, title V permits could expire or become unnecessary.[3] If the title V permit supersedes the source's SIP-approved permit and then subsequently expires, neither the superseded SIP-approved permit nor the expired title V permit would provide the legal authority to enforce the site-specific operational requirements and restrictions imposed upon the source pursuant to preconstruction

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[3]Title V permits could expire if a source fails to submit a timely and complete title V permit renewal application. See 40 CFR §§ 70.5(a)(1)(iii), 71.5(a)(1)(iii), 70.7(c) & 71.7(c). In addition, a title V permit could become unnecessary if a source limits its actual and potential emissions below major source thresholds, and the source is not otherwise required to maintain its title V permit.

review. Even if title V permits expire, of course, sources are still required to comply with applicable requirements that remain independently enforceable outside of title V permits, as all applicable requirements must.

Moreover, the continuing existence of SIP-approved permits independent of title V preserves the ability of permitting authorities and EPA to reopen title V permits that failed to include all SIP-approved permit terms, or to make such corrections upon permit renewal. Finally, title V regulations allow a permitting authority to include in the title V permit a "permit shield" stating that "compliance with the conditions of the [title V] permit shall be deemed compliance with any applicable requirements as of the date of permit issuance" [40 CFR §§ 70.6(f) & 71.6(f)]. The fact that compliance with the title V permit may be "deemed compliance" with underlying applicable requirements, including applicable requirements contained in SIP-approved permits, indicates that those underlying requirements must remain in force and may not be superseded. If those requirements could be superseded by the title V permit, there would be no need for a mechanism in the title V permit clarifying the source's obligations and compliance status.

DRAFT -- DO NOT CITE OR QUOTE

ENCLOSURE B

Response to STAPPA/ALAPCO Recommendations On MACT/Title V Interface Issues (from December 11, 1998 Letter to John Seitz)

[General note: Any responses referring to part 70, or permit revision processes, are based on the present part 70 rule promulgated in 1992.]

A. MANAGEMENT OF CHANGE

A-1. Retrospective application of 112(g)

STAPPA/ALAPCO Recommendation: In cases where NSR violations are addressed for historical construction projects that pre-date the effective date of the Section 112(g) rule, 61 Fed. Reg. 68,384 (December 27, 1996), STAPPA and ALAPCO recommend that Section 112(g) MACT controls not be mandated by EPA.

EPA Response: The EPA agrees that, for historical construction projects which pre-date the effective date of the section 112(g) rule, where a source has violations for operating without valid NSR permits, the EPA will not mandate section 112(g) MACT controls on those historical construction projects.

A-2. Issuance of the permit before MACT compliance details are available

STAPPA/ALAPCO Recommendation: When the title V permit is issued prior to the compliance date of the MACT standard or prior to specific compliance details being available, STAPPA and ALAPCO suggest that the permit initially may include an identification of applicable requirements for the facility at the Subpart level, and that additional details may be added through minor permit modification procedures with public and EPA review occurring at permit renewal.

EPA Response: The EPA agrees that when a permit is issued prior to the MACT compliance date, one option is for the initial permit to describe MACT applicability at the Subpart level, and for all other compliance requirements (including compliance options and parameter ranges) of the MACT that apply below the Subpart level to be added at a later time. Because this more detailed information describes for the first time in the permit specifically how the source will comply with the standard, it is important to have EPA and public review and thus, it must be added as a significant permit modification.

Another option is for the initial permit to identify the MACT standards or requirements

that apply at the section or subsection level, including anticipated compliance options, along with the information identified in the Initial Notification required by the General Provisions, see 40 CFR Part 63, Subpart A, or by the applicable Subpart. For example, a permit for a source subject to 40 CFR Part 63, Subpart T would identify, in part, each solvent cleaning machine and the anticipated compliance option. [See 40 CFR § 63.468(a) and (b)]. Additional compliance information required in the Notice of Compliance Status (e.g., parameter values) would be added as a minor permit modification when the NCS is submitted. As clarified at the Dallas workshop, the current Part 70 regulations require that minor permit modifications have an EPA review (but no public review) at the time of the permit modification.

A-3. Changes in the selected compliance option

STAPPA/ALAPCO Recommendation: Where the permit does not initially contain a compliance option that the source wishes to use, STAPPA and ALAPCO recommend that EPA permit additional compliance options already allowed under the MACT standard to be added to the permit as a minor modification with public and EPA review occurring at renewal.

EPA Response: We agree that if a source wishes to add compliance options that are a part of the MACT standard, the compliance options usually can be added to the permit through the minor permit modification process. However, some compliance options, such as those with emissions averaging, would require a significant permit modification due to the amount of judgment involved. Again, the current Part 70 regulations require that minor permit modifications have an EPA review at the time of the permit modification.. As you know, a permit modification may be avoided if the initial permit includes compliance options as alternative operating scenarios under § 70.6(a)(9).

A-4. "Once-In-Always-In" and pollution prevention

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that EPA revise its current guidance to recognize that, where greater reductions are achieved through pollution prevention and those emission reductions are practically enforceable, the MACT-specific requirements should no longer apply.

EPA Response: A workgroup consisting of representatives from STAPPA/ALAPCO, OECA, OPPT, and OAQPS has been established to address this issue. Our staff continues to work on this issue with the workgroup. Once the workgroup has completed its efforts and has made a recommendation, a decision will be made by EPA and sent to STAPPA/ALAPCO.

B. LEVEL OF DETAIL FOR POINT SOURCES

B-1. Use of generic groups that do not identify specific emission units

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that EPA allow the identification of emission units by generic groups in permits for smaller MACT-affected emission units that are frequently added, removed or changed and for similar multiple control devices subject to the same monitoring, recordkeeping, reporting and testing requirements. This approach would allow emissions units subject to specific applicable requirements not to be specifically identified or listed in the permit. A contemporaneous on-site log could be used to identify specific units and to document changes to and from generic groups.

EPA Response: We interpret your suggestion to recommend that small units subject to MACT standards which are frequently added, removed or changed could be identified in an on-site log, rather than specifically identified in the permit. We further interpret your suggestion as recommending that control devices to which similar MACT requirements apply could be identified in a log, rather than specifically identified in the permit. Finally, we understand your suggestion for a log to be a voluntary mechanism to help the source keep track of units or control devices added to the facility without revising the permit.

As a general rule, the permit must identify not only the applicable requirements, but the specific emissions units to which those requirements apply, to assure compliance by specific units with specific applicable requirements. Linking of applicable requirements to emission units in the permit is important because it retains applicability decisions with the permitting authority instead of transferring these decisions to the source. It also clearly identifies the requirements that apply to each unit and eliminates any disputes as to whether a unit fits a generic group description. Therefore, we believe it is appropriate for the permit to identify specific units. As a practical matter, however, we believe that generic grouping could be appropriate in two situations: 1) where the applicable requirements apply generically; and 2) in certain circumstances where many small units make identification of individual units infeasible. In addition, we are currently involved in several pilot projects that may identify other situations in which generic grouping of emission units may be appropriate.

The first situation where generic grouping may be appropriate is where applicable requirements apply generically to a facility, rather than to an identified class of units. The EPA's White Paper I allowed for the use of generic groups to identify units subject to requirements that apply in the same way to all units at a facility, such as facility-wide opacity limits of the implementation plan (SIP). See White Paper I at 24. An example is a regulation that states "no person shall cause emissions in excess of 20% opacity." Since the requirements do not apply to specific types of units, it is not necessary for the permit to identify specific units subject to the requirement, and hence, generic grouping may be appropriate. [See § II.4 of White Paper I.]

The second situation where generic grouping may be appropriate is where the sheer numbers of units make identification of individual units infeasible, and where the applicable requirement is open to such an approach. Examples where this could be the case include pumps, valves, or flanges covered by leak detection and repair (LDAR) requirements, and manhole covers or drains covered by wastewater work practice standards. In these situations, instead of identifying specific units, the permit could place affected units into a group in which all units are subject to the same applicable requirement, provided that the permit clearly defines the type of unit in each group and the applicability criteria. If required by the MACT standard, the owner or operator must develop a mechanism to identify which individual units belong to which group, and the permit should reflect this obligation. For example, 40 CFR Part 63, Subpart H requires the source to maintain lists of equipment subject to different requirements of the Subpart, but provides that an on-site recordkeeping system may satisfy this requirement. [See 40 CFR § 63.181(b).]

As to your recommendation of generic grouping for control devices subject to similar requirements, however, we cannot agree. We think it is important for the permit to clearly link emission units to control devices and, in turn, to applicable requirements, so that it is clear which control device is being used to meet which standard for which units. We do not yet understand how this can be done categorically for control devices. We are now working on pilot projects that will allow us to see if certain control devices can be advance-approved and generically grouped. We expect that the size of emission units and the nature of control devices will be considerations.

B-2. Incorporation of multiple compliance options into Title V permits

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that EPA recognize that various compliance options authorized by MACT standards can be placed directly in the permit by referencing the MACT provisions, without identifying them as Alternative Operating Scenarios (AOS). The MACT standard provisions (e.g. periodic reports, Notice of Compliance Status) would provide recordkeeping and notification of changes to compliance options. In addition, STAPPA and ALAPCO believe that once the compliance date is past, the source is obligated to maintain continual compliance even if the compliance option changes.

EPA Response: We read your suggestion to recommend that different compliance options of a MACT standard may be referenced in the permit, but not identified as an AOS.

As to your suggestion not to identify compliance options as an AOS, EPA believes that the appropriate way to define different compliance options is as one or more AOS. This is important because to assure compliance with a MACT standard by specific emissions units, the permit must clearly specify which compliance options a source may utilize, using the on-site log required by 40 CFR § 70.6(a)(9) to indicate which compliance option is in effect at a given time. Part 70's AOS provisions supply the appropriate mechanism to ensure that the permit reflects applicability determinations made by the permitting authority for specific emission units, and that

inspectors will have historical records and current information on which compliance option the source is following. The EPA is working on ways to streamline the addition of compliance options into the permit.

When the source changes MACT compliance options, part 63 will require a notification (40 CFR § 63.9(j)) in those cases where the newly instituted option was not already incorporated into the permit. That is, § 63.9(j) triggers a notification only in the instance where "information not previously provided" becomes available. A notification would not be necessary if the permit already included all necessary provisions for employing alternate MACT compliance options.

B-3. Level of Detail Needed to Incorporate General Provisions into Permits

STAPPA/ALAPCO Recommendation: With regard to the General Provisions (40 CFR Part 63, Subpart A), STAPPA and ALAPCO recommend that it be sufficient for the permit to specify that the facility is subject to Subpart A as specified in Table 1 of the applicable MACT standard. While state and local agencies may also choose to include summary conditions for key General Provisions requirements, the reference to Subpart A and the MACT-specific Table 1 should be sufficient to meet Part 70 requirements.

EPA Response: Generally, the EPA agrees with this recommendation, including the recommendation that it is sufficient for the permit to reference the appropriate table in the MACT rule (not always Table 1). In cases where the requirements of the General Provisions are not clear enough to cross-reference, however, then the permit may need to contain additional clarification as to how the General Provisions apply to the facility.

B-4. Level of Detail Needed to Incorporate MACT Standards into Permits

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that state and local agencies be allowed to specify only that the source is subject to the relevant Subpart, or to include additional detail as circumstances dictate. For example, under STAPPA and ALAPCO's recommended approach, standards such as the MACT standard for Industrial Process Cooling Towers, 40 CFR Part 63, Subpart Q, may be appropriately addressed at the Subpart level. Generally, state and local agencies favor including a summary of conditions of the applicable requirement at the section level or lower, along with a reference statement or, alternatively, including a summary of conditions at the section level, along with specification of the applicable Subpart. However, since there may be times when only specifying the Subpart is sufficient, that should be the minimum requirement.

EPA Response: We interpret your suggestion to recommend that EPA endorse a reference to the Subpart level as generally acceptable except where further specificity is required by the permitting authority. We also interpret your suggestion to apply at any stage of the permit, not just prior to the compliance date of a MACT standard.

The permit needs to cite to whatever level is necessary to identify the applicable requirements that apply to each emissions unit or group of emission units (if generic grouping is used), and to identify how those units will comply with the requirements. As EPA indicated in White Paper II, the permit must at least specify the applicable emission limit or standard, and the emissions unit to which the limit or standard applies. The White Paper also stated that the permit may use referencing where it is specific enough to define how the applicable requirement applies and where using this approach assures compliance with all applicable requirements. We interpret this to require the permit to identify (or reference) the monitoring, recordkeeping and reporting requirements. Accordingly, we cannot agree with your recommendation that a reference to Subpart level is acceptable at the discretion of the permitting authority.

In the example of the Industrial Process Cooling Towers MACT (Subpart Q), we recommend that the permit identify the standard to be met (i.e., a ban on chromium-based water treatment chemicals), and the unit(s) subject to the standard (i.e., industrial process cooling towers). The permit should also reference the notification requirements of 40 CFR § 63.405, the recordkeeping and reporting requirements of 40 CFR § 63.406, and the applicable General Provisions in Table 1 of Subpart Q.

C. LEVEL OF DETAIL FOR NON-POINT SOURCES

C-1. Identification of wastewater streams subject to MACT in the Title V permit

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that each wastewater stream need not be identified individually in the permit. The permit should contain 1) a description of the criteria for determining a wastewater stream's status, or a reference to the relevant MACT provisions that establish those criteria, and 2) the applicable requirements for Group 1 and Group 2 streams. The identification of the wastewater streams affected by MACT (i.e., Group 1 and Group 2 streams) and the applicable group status will be provided in the implementation plan or periodic reports as required by the MACT.

EPA Response: We understand your recommendation to mean that the permit would define wastewater streams as a class (i.e., one class for Group 1, another class Group 2), and would not identify individual wastewater streams within each class. As clarified in Dallas, we interpret your recommendation to apply not only to how the permit identifies wastewater streams existing at the time of permit issuance, but also to how the permit might provide for the addition of new streams without a permit revision.

We do not agree with the idea that individual streams need not be identified. The permit must include a listing of all wastewater streams that designates their status as Group 1 or Group 2, because each Group has different applicable requirements, including monitoring, reporting, recordkeeping and testing requirements. The linkage between individual streams and their Group 1/Group 2 status may be set up as an Alternative Operating Scenario, which would allow individual streams to change status during the permit term, provided that the new status is

identified in the on-site log required by part 70. Under this approach, the permit would need to contain or reference the procedures by which the source determines Group 1 or Group 2 status. Also, the permit must be revised in order to identify new wastewater streams. Note that we are experimenting with advance approval of wastewater streams under the MACT standard for pharmaceutical production, see 63 Fed. Reg. 50, 280 (September 21, 1998) (to be codified at 40 CFR Part 63, Subpart GGG), and may have additional guidance on this topic in the future.

Finally, the permit needs to require the source to provide notification for any change in Group status as required in MACT regulations. For example, Subpart G requires a source to report in the next periodic report any Group 2 emission point that becomes a Group 1 emission point, and include a schedule of compliance as required by § 63.100 of Subpart F. [See 40 CFR § 63.152(c)(4)(iii).]

C-2. Specification of requirements for fugitive and wastewater sources

STAPPA/ALAPCO Recommendation: For fugitive emission requirements, STAPPA and ALAPCO recommend that detail at the Subpart level is generally sufficient (e.g., Subpart H). For wastewater requirements, STAPPA and ALAPCO recommend that the permit contain detail at the section level. If the MACT does not require the source to keep records of the current operating options, the permit could specify such a recordkeeping requirement. Finally, the state and local agencies believe Part 70 does not require the source to notify permitting authorities when they switch compliance options.

EPA Response: We understand your recommendation to apply to equipment leak requirements ("fugitive emission requirements") and wastewater emission points ("wastewater sources.")

As we stated in the response to recommendation B-4, we do not believe that Subpart citation by itself is appropriate. For equipment leak requirements (e.g., Subpart H of part 63, Subpart VV of part 60), different standards, recordkeeping and reporting requirements apply to different types of equipment subject to the rule. For example, one standard applies to pumps in light liquid service, and another standard applies to pumps in heavy liquid service. For this reason, we believe that the applicable requirements of Subpart H (and other similar rules) should be cited at appropriate levels below the Subpart, consistent with the need discussed above to clearly designate the specific applicable requirements for different and specific emission units.

For wastewater streams, citation to the section level (or lower) level of citation is needed to clearly convey the emission limitations of the rules with no ambiguity . We agree that part 70 does not require sources to notify permitting authorities when they switch compliance options that are part of an AOS. However, as noted in the response to recommendation B-2, the MACT general provisions do require reporting and notification when switching to a new compliance option (unless the permit includes the information as an AOS), and these requirements must be met. As we have noted elsewhere, permit revisions can be minimized by including all anticipated options in the permit as AOS's.

C-3. Specification of operating parameters in the permit

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that either the actual value for operating parameters or the process to develop those values be considered sufficient to meet Title V permit requirements. Where operating parameter values are identified in the permit, STAPPA and ALAPCO recommend that the minor permit modification process be used to add or change operating parameter values. Public and EPA review would occur at permit renewal.

EPA Response: We interpret your suggestion as applying to the parameter ranges or maximum/minimum parameter values (from here on we will refer to them as "parameter ranges"). These parameter ranges are required by many MACT standards. However, we interpret your suggestion as not limited solely to MACT standards; for example, it could apply to NSPS standards that require parameter ranges. We further interpret your suggestion as allowing a permit authority to put in the permit either a process for determining the parameter range, or the parameter range itself. We understand the suggestion to put just the process in the permit to mean that the range itself would not be in the initial permit, and also that the permit would not be revised when a new parameter range is set using the process. In addition, you are recommending that if the actual parameter range is identified in the permit, and then a new parameter range is established, the minor permit modification could be used to incorporate the new parameter range.

We believe that the parameter range must be included in the permit. The parameter range is one of the applicable requirements comprising MACT standards, and is often the means for determining compliance with the emission standard. Including the parameter range as a permit term ensures that the source will be required to promptly report deviations from the range [40 CFR § 70.6(a)(3)(iii)(B)], to submit semiannual reports of such deviations and parameter monitoring [40 CFR § 70.6(a)(3)(iii)(A)], and to certify compliance with the range [40 CFR § 70.6(c)(5)].

We agree that for incorporating a new parameter range into a permit, a minor permit modification could be used. We are also investigating whether this could be done as an administrative change to the permit. This is because we believe that most changes to a parameter range will not be a significant change to monitoring, recordkeeping, or reporting [40 CFR §70.7(e)(2)(i)(A)(*2*)]. Note that in accordance with 40 CFR § 70.7(e)(2)(i)(A), a significant change to monitoring, recordkeeping, or reporting would require the significant modification process. Again, the current Part 70 regulations require that minor permit modifications have an EPA review at the time of the permit modification. [40 CFR § 70.7(e)(iii) & (iv)].

In situations where parameter ranges are expected to change so often that a minor permit modification for each change would be impractical, we suggest that you consider the group processing provisions for minor modifications. See 40 CFR § 70.7(e)(3). These provisions are available for changes that are collectively below the thresholds identified in 40 CFR § 70.7(e)(3)(i)(B). We expect that many changes to parameter ranges would be small enough to fit below these thresholds. If so, group processing allows the permitting authority to group up to

a quarter's worth of changes, and then to take up to 180 days to act on the group of permit revisions.

This guidance does not alter the flexibility provided under the "Change Management Strategy" set forth in the preamble to the MACT standard for Pharmaceutical Production, or in future Subparts with similar flexibility. In addition, this guidance does not alter the provisions of the compliance assurance monitoring (CAM) rule, which specifically authorize the permit to include procedures for establishing parameter indicator ranges, designated conditions or excursion triggers, rather the particular ranges, conditions or triggers. See 40 CFR 64.4(a)(2) and (c)(2).

C-4. Incorporation of startup, shutdown, and malfunction plans, operating and maintenance plans, and periodic reports in Title V permits

STAPPA/ALAPCO Recommendation: STAPPA and ALAPCO recommend that EPA use the same approach for operation and maintenance (O&M) plans and periodic reports that is contained in a memorandum from John Seitz dated January 17, 1996 addressing startup, shutdown and malfunction (SSM) plans. The associations further recommend that changes in O&M plans not trigger a permit modification procedure.

EPA Response: We understand your recommendation to be that the approach used in the Seitz memorandum [which applies to startup, shutdown and malfunction (SSM) plans] should also apply to O&M plans and to periodic reports. We further understand your recommendation to be that EPA should not require a permit revision when changes are made to an operation and maintenance plan.

To put your recommendation in context, we need to clarify that the General Provisions of part 63 require any SSM plan to be incorporated by reference into the title V permit [§63.6(e)(3)]. In addition, Subpart N requires an O&M plan to be incorporated by reference into the permit [§63.342(f)(3)(i)]. As far as we are presently aware, Part 63 does not require any periodic reports or any other O&M plans to be incorporated by reference into the permit. Since these periodic reports and O&M plans (except Subpart N) are not required to be incorporated by reference into title V permits, these documents need not be incorporated by reference, nor must their content be included as permit terms, in order to assure compliance with the relevant part 63 applicable requirements. Consequently, we agree that a permit revision would not be required when changes are made to these reports or O&M plans. Of course, permits must still require that sources develop, implement or submit, retain, and revise as necessary these plans or reports, consistent with the applicable MACT standard.

That still leaves the SSM plans required under the General Provisions and the O&M plan required under Subpart N. We recognize that requiring the incorporation of these plans by reference into the permit renders the content of the plans enforceable permit conditions and, accordingly, means that changes to plans could result in permit revisions. We believe that this outcome can be avoided, however, by a general reference in the permit to the SSM plan. The

permit would still incorporate the plan by reference, but the reference would not cite the date or specific content of any particular SSM plan. This approach would allow the plan to change without triggering a permit revision. To implement this approach, the permit would state that the SSM plan required under § 63.6(e)(3), and any revision to that plan, is incorporated by reference and is enforceable as a term and condition of the permit. The permit would further state that revisions to the SSM plan are automatically incorporated by reference and do not require a permit revision.

Although incorporation by reference of a document required by an applicable requirement would normally require reference to the document as it exists on a specific date, we believe the approach outlined here for SSM plans is appropriate because it is more consistent with the intent of the General Provisions, which were promulgated subsequent to part 70 and which contemplate that the source will be able to make changes to the SSM plan without the prior approval of the EPA or the permitting authority. See, e.g., §§ 63.6(e)(3)(v) and (e)(3)(vii). For example, any time the SSM plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the source must revise the SSM plan to include procedures for operating and maintaining the source during similar malfunction events, and a program of correction actions for similar malfunctions of process or air pollution control equipment. See § 63.6(e)(3)(viii). In addition, compliance with an SSM plan does not relieve a facility from the responsibility to comply with good air pollution control practices as required by § 63.6(e)(1).

Finally, the permit must contain language that reiterates an enforceable obligation for the source to develop, implement, retain, and revise as necessary the SSM plan. The permit must also contain a reference to the applicable rule requirement that requires the plan. Permit authorities also have the authority to request that the SSM plan be submitted to them. They also can require essential parts of the plan, such as the definition of startup, shutdown and malfunction events, to be included in a permit application, pursuant to § 70.5(c)(5), which states that applications must include all information needed to determine applicability of requirements.

Of course, States retain the authority to incorporate specifically identified SSM plans by reference into title V permits, if a permitting authority believes it is important to review certain changes to particular SSM plans pursuant to its approved part 70 program. Note that the requirement to incorporate the SSM plan by reference is under review by EPA as part of the settlement of the litigation on the Part 63 General Provisions and may be the subject of future rulemaking.

MEMORANDUM OF UNDERSTANDING
(OR "AGREEMENT")

R009414

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

United States Steel Corporation
Granite City Works and
IEPA Memorandum of Understanding

The Memorandum of Understanding (MOU or Agreement) is entered into by and between United States Steel Corporation (U. S. Steel) and the Illinois Environmental Protection Agency (IEPA), and is dated and effective as of the last date of signature in the signature block.

U. S. Steel and IEPA have reached an Agreement that will achieve reductions in emissions of particulate matter from U. S. Steel's Granite City Works, with the specific intent of reducing the emissions of particulate matter$_{2.5}$ (PM2.5). This MOU sets forth the terms of the Agreement between U. S. Steel and IEPA and sets forth the intended regulatory uses for those emission reductions. This agreement does not relieve U.S. Steel from the continuing obligation to comply with requirements of applicable Federal and State regulations, construction or operating permits, and other applicable requirements to control emissions.

1. Enhancements to Compliance Procedures
    a. Within 2 months of the effective date of this agreement, U. S. Steel shall begin installation of an enhanced operational monitoring system for the capture systems for particulate matter emissions from the Basic Oxygen Furnaces (BOF), including installation, operation and maintenance of monitoring devices to verify the performance of each capture system during the various steps in the steelmaking process. This will include establishment of values of operating parameters that reliably indicate and ensure adequate capture of emissions by each existing hood.
    b. Within 3 months of beginning operation of any additional new pollution control equipment at the BOF, as prescribed in this MOU, U. S. Steel shall implement enhanced operational monitoring for such new capture system for particulate matter. Such implementation will include installation, operation and maintenance of appropriate monitoring devices. These devices will verify the performance of the new capture system. Such monitoring devices will be used to establish values of operating parameters that reliably indicate and ensure adequate capture of emissions by each new hood.
    c. Within 2 months of the effective date of this agreement, U. S. Steel shall conduct opacity readings of emissions escaping from any openings in the Basic Oxygen Process Furnace (BOPF) building in accordance with USEPA Method 9 in 40 CFR Part 60, Appendix A. These readings shall be performed for at least five (5) days out of every seven (7). A day is defined as any day when a BOF is in operation for a minimum of four hours during conditions that are acceptable for Method 9 readings. A minimum of 60 consecutive minutes of opacity readings must be obtained and must encompass at least one steel production cycle. A production

cycle is defined as the beginning of scrap charging to the completion of deslagging of the steelmaking vessel. Results of these readings shall be reduced to three (3) minute rolling averages. U.S. Steel shall maintain appropriate records for all opacity measurements and these records shall be made available upon request from the IEPA.

d. U.S. Steel may, at some later date, submit a formal request to IEPA to streamline the monitoring requirements. This request shall be submitted as an application for a significant modification to the CAAPP permit.

2. Emission Limits
   a. All particulate matter emission limits in this MOU are expressed in terms of particulate as would be measured by USEPA Methods 5, 5D or 17.
   b. As of January 1, 2012, U. S. Steel shall comply with the following requirements for particulate matter emissions:
      i. Particulate matter emissions from the basic oxygen process (BOP) that exit from the electrostatic precipitator stack must not exceed 0.01 gr/dscf.
      ii. Particulate matter emissions from hot metal desulfurization and reladling (BOF Hot Metal Transfer and Desulfurization Baghouse(s)) that exit from the baghouse must not exceed 0.005 gr/dscf.
      iii. Particulate matter emissions from slag skimming (BOF Slag Skimming Baghouse(s)) that exit from the baghouse stack must not exceed 0.005 gr/dscf.
      iv. Particulate matter emissions from ladle metallurgy operations (LMF Baghouse) that exit from the baghouse stack must not exceed 0.005 gr/dscf.
   c. As of March 31, 2013, or such later date established pursuant to paragraph 4(c)(v) below, U. S. Steel will comply with the following requirements for particulate matter emissions from tapping:
      i. Emissions shall be controlled by a new baghouse.
      ii. Emissions that exit from this baghouse stack must not exceed 0.005 gr/dscf.

3. Within 2 months of the effective date of this Agreement U. S. Steel shall submit an application for a federally enforceable permit or permits to incorporate the requirements of Sections 1 and 2 above. The federally enforceable permit or permits shall include the requirements imposed by Sections 1 and 2 and appropriate requirements for emission testing, monitoring, recordkeeping and reporting associated with these requirements.

4. Emission Reduction Projects
   a. Steam Rings for the Oxygen Lances
      i. Within 6 months of the effective date of the Agreement, U. S. Steel will complete basic engineering of steam rings for the oxygen lances in the BOP shop.

ii. U. S. Steel will submit a construction permit application and an installation schedule to IEPA within 30 days of completion of the basic engineering. In consideration of the need to begin operation of the steam rings by October 31, 2011, U. S. Steel shall commence construction of the steam rings within 40-days of issuance of a final construction permit, assuming that no appeal(s) or challenge(s) of the Permit or the requirements therein have been filed with the Pollution Control Board or Federal Court within that 40-day period.

b. U. S. Steel will complete the installation and begin operation of the steam rings no later than October 31, 2011 provided that the required construction permit is obtained in a reasonable time and not appealed.

c. Secondary Emission Control for Tapping
   i. Within 9 months of the effective date of the Agreement, U. S. Steel will complete the basic engineering for the installation and operation of a dedicated tapping emission control system that includes a fabric filter control device (baghouse).
   ii. The tapping emission control system will be designed for optimal capture to minimize emissions from tapping, which have the potential of escaping to the atmosphere from the BOPF building. The air pollution control device for the captured emissions will be designed to comply with a particulate matter emission rate of 0.005 grains per dry standard cubic feet exhaust, at the stack.
   iii. Within 30 days of the completion of the basic engineering for the new control system, U. S. Steel will submit a construction permit application for the new system to the IEPA that contains a schedule for the design engineering, construction and initial start up of the new tapping emission control system.
   iv. In consideration of the need to begin operation of the secondary emission controls for tapping by March 31, 2013, IEPA shall act on all required permit(s) within three months of receipt of permit application(s) from U. S. Steel. U. S. Steel shall commence construction of the secondary emission controls for tapping within 40-days of issuance of a final construction permit, assuming that no appeal(s) or challenge(s) of the Permit or the requirements therein have been filed with the Pollution Control Board or Federal Court within that 40-day period.

v. U. S. Steel will begin operation of the new tapping emission control system no later than March 31, 2013 provided that required permits are obtained in a reasonable time and not appealed.

d. Secondary Emission Control for Charging

i. As part of the engineering for the new tapping emission control system, U. S. Steel will also evaluate the current emission control system for charging and potential projects to reduce particulate matter emissions from charging. As part of this evaluation, U. S. Steel will evaluate improvements to the capture efficiency achieved for charging emissions and ducting some or all of the captured charging emissions, which currently are controlled by the electrostatic precipitator, to the new control device for tapping or another new baghouse.

ii. If the evaluation completed in paragraph 4(d)(i) does not support implementing additional projects to reduce particulate emission from charging, U. S. Steel will submit within 9 months of the effective date of the Agreement, an evaluation report that includes a summary of the evaluation, statement on decision criteria for potential projects, and incremental cost per ton of pollutant reduction analysis.

iii. If the evaluation completed in paragraph 4(d)(i) does support implementing additional projects to reduce particulate emissions from charging, U. S. Steel will complete within 9 months of the effective date of the agreement the basic engineering for installation and operation of an upgrade to the existing charging control system. Future submittals will coincide with the tapping hood schedule identified in paragraph 4(c)(iii) – 4(c)(v).

5. Regulatory Uses of Emission Reductions

a. For the Granite City BOP, the particulate emission reductions set forth in the MOU will be incorporated into the Illinois 1997 $PM_{2.5}$ National Ambient Air Quality Standard State Implementation Plan (NAAQS SIP) submitted to U. S. EPA in accordance with 40 CFR §51.1001, et seq., and §§ 110 and 172 of the Clean Air Act

b. IEPA shall use its best efforts to support and represent that the requirements of this MOU satisfy U. S. Steel's obligations towards Illinois EPA's requirement to demonstrate compliance with the 1997 $PM_{2.5}$ NAAQS.

c. IEPA will provide U. S. Steel with an opportunity to review and provide comments on the 1997 $PM_{2.5}$ modeled attainment demonstration.
d. U. S. Steel and IEPA shall mutually support and use best efforts to obtain the appropriate permits and approvals incorporating the terms of this agreement to make the reductions federally enforceable so that they can be incorporated into the Illinois 1997 $PM_{2.5}$ SIP.
e. U. S. Steel's commitments and obligations under this MOU are subject to and conditioned upon: 1) the issuance and sustained validity of a federally enforceable permit or permits containing the particulate matter emission reductions requirements set forth in the MOU; 2) IEPA's approval that the particulate matter emission reductions satisfy U. S. Steel's requirement for the 1997 $PM_{2.5}$ NAAQS SIP; and 3) IEPA not pursuing a regulation pursuant to the 1997 PM2.5 NAAQS containing additional restrictions for the Granite City Works BOP. U. S. Steel and IEPA shall mutually support and use best efforts to obtain the appropriate permits and SIP approvals based on this agreement.
f. In developing rules, regulations, or state implementation plan revisions designed to comply with the $PM_{2.5}$ NAAQS, IEPA, taking into account all emission reduction efforts and other appropriate factors, will use best efforts to seek $PM_{2.5}$ reductions in regards to future NAAQS from other sources before seeking additional emission reductions from the U. S. Steel BOP.

6. Force Majeure

U. S. Steel shall not be liable for any failure or delay in performance under this MOU (other than for delay for submitting a permit application) to the extent said failures or delays are caused by extraordinary circumstances beyond U. S. Steel's reasonable control and occurring without its fault or negligence, provided that, U. S. Steel gives prompt written notice, with full details following the occurrence of the cause relied upon. Dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

For United States Steel Corporation	For Illinois EPA
MS Williams	Douglas P Scott
Michael S. Williams Senior Vice President – North American Flat Roll Operations	Douglas P. Scott Director, Illinois EPA
Date: 6 / 30 / 2010	Date: 7 / 1 / 2010

REFERENCE DOCUMENT
LEHIGH PORTLAND
R009420

February 12, 2001

(AR-18J)

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management
Indiana Department of Environmental Management
100 North Senate Avenue
Post Office Box 6015
Indianapolis, Indiana 46206-6015

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Dear Mr. Dubenetzky:

This letter is in response to your December 11, 2000, prevention of significant deterioration (PSD) applicability determination request for Lehigh Portland Cement Company in Mitchell, Indiana. Lehigh proposes to upgrade their existing electrostatic precipitators and associated particulate matter control devices on existing kilns #1 and #2. Your letter states that these upgrades are being performed to comply with the requirements of 40 CFR Part 63, subpart LLL, will not affect the kilns' design capacity or increase efficiency of the kilns, and will not result in any collateral increases in emissions from these units. These pollution control devices do not generate their own emissions. In addition, your staff has indicated that these modifications will not affect the utilization rates at these units. The United States Environmental Protection Agency agrees that these upgrades to pollution control equipment would not trigger PSD requirements.

We will continue to work with you and your staff to assure that the appropriate PSD determination is applied to this and other sources. If you have any questions, contact Sam Portanova, of my staff, at (312) 886-3189.

Sincerely yours,

/s/

Pamela Blakley, Chief
Permits and Grants Section (IL/IN/OH)

ORIGIN OF OPERATIONAL RE... FOR OVERLAPPING OP...

R009421

217/782-2113

OPERATING PERMIT

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

PERMITTEE

U.S. Steel Granite City
Attn: Larry Siebenberger
Route 203 and 20th Street
Granite City, Illinois 62040

Application No.: 72080043
Applicant's Designation: BOF1187360
Subject: Basic Oxygen Furnace Shop
Date Issued: July 28, 2004
Location: 20th and Omaha Streets, Granite City

I.D. No.: 119813AAI
Date Received: April 19, 2004

Expiration Date: July 28, 2009

This Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of 2 BOF Vessels and an ESP, reloading station, track hopper and baghouse, flux bins and baghouse and 5 ladle dryers/pre-heaters as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. Combined total production of steel from basic oxygen furnaces 1 and 2 shall not exceed 7,600 net tons per day, as averaged over any month.

b. This permit is issued based upon the above permitted production increase not constituting a modification under either 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - PSD. The permitted production increase does not constitute a modification because it does not entail a physical change and a change in the method of operation is not occurring because the previous levels of production of the BFs and the BOFs were not set by a federally enforceable permit condition(s).

2. Overlapping operations of the BOF Vessels is allowed only under the following conditions:

a. i. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for at least 1 minute.

ii. Sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other vessel in order to satisfy condition (i) above.

iii. Only overlapping of tapping, after alloy addition, at one vessel and the charge and/or blow on the other vessel is allowed.

iv. Conditions (i) and (ii) above shall be part of standard operating procedure (SOP) of the BOF vessels.

b. Each BOF vessel shall be equipped with a Fume Suppression System which shall be in use at all times that tapping is occurring during overlapping operations.

3. This permit allows the operation of the melt shop vessels and associated control equipment during malfunction and breakdown under the following conditions:

a. Operation of the ESP with more than 4 fields not functioning shall be considered a malfunction for reporting, logging and recordkeeping purposes.

b. Operation of a melt shop vessel shall not be continued for longer than the time needed to finish the heat in process at the time of the malfunction.

c. In the event of a malfunction the Permittee shall immediately repair the cause of the malfunction and take all necessary steps to prevent a repeat of the malfunction.

4. The Permittee shall implement an operating program to reduce malfunction emissions during an ESP outage of 5 or more ESP fields. Such program shall include but not be limited to maintaining an inventory of spare parts, daily inspections and performing scheduled maintenance.

5a. During operation of the BOF ESP with one of the 6 passageways dampered off, the stack gas pulpit set point shall not exceed 650,000 cfm.

b. The pulpit stack gas flow meter shall be calibrated on at least a quarterly basis.

c. i. The Permittee shall keep a continuous strip chart record of the stack gas flow rate during ESP use.

ii. This record shall be maintained for three years and be available for inspection by the Illinois EPA upon request.

1.3.9(b)(vi)&(vii)

6. The Illinois EPA Regional Office at 2200 Mall Street, Collinsville shall be notified by 10:00 a.m. of the next work day, of any malfunction or breakdown which results in emissions in excess of the Illinois EPA Rules or the provisions of the federal consent decree.

7. A log shall be kept of all malfunctions and breakdowns at the basic oxygen furnace and reported quarterly to the regional office recording the following:

a. Date and time of malfunction or breakdown;

b. Length of time that operation is continued during malfunction and breakdown to the nearest quarter hour;

c. Quantity of emissions emitted during malfunction or breakdown, and the method by which the quantity was determined;

d. Cause of malfunction or breakdown;

e. Actions taken to correct malfunction or breakdown; and

f. Actions taken to mitigate emissions as far as practicable during malfunction or breakdown.

Special Conditions #6 and #7 supersede standard condition #9.

8. The facility shall comply with all applicable conditions of the federal consent decree and of the Amendments which were agreed to by National Steel Corporation and the Illinois Environmental Protection Agency on May 18, 1981 and September 17, 1984.

9. A copy of the monthly opacity exceedance report of the BOF ESP shall be sent to the Illinois EPA Regional Office. Henceforth these reports shall contain all opacity measurements which exceed 30 percent, averaged over a six minute period. These "excess opacity" reports shall provide, for each such incident, the percent opacity measured as well as the date and span of such incident. These reports shall state the reasons for the excess opacity. The report shall also specify the date of those periods during which the continuous monitoring system was not in operation.

10. Vessels #1 and #2 may only be operated as top oxygen-injected vessels. However, for purposes of checkout and stack testing only, Vessels #1 and #2 may be operated during the time of this permit as peripheral and bottom oxygen injected vessels for a maximum of 120 days. Any further operation of the vessels as other than top oxygen-injected vessels shall be pursuant to a permit granted for such additional operation.

11. Permittee shall use large covers or an alternative control method so as to reduce lance hole emissions to the lowest practicable level. Proof that an alternative control method is equivalent to lance hole covers is the responsibility of the Permittee.

12a. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Illinois EPA to review compliance:

i. Total production of hot metal at the BFs (daily, monthly, and annual production in tons)

ii. Total production of molten steel at the BOFs (daily, monthly, and annual production in tons)

b. These records shall be retained for three years and shall be made available for inspection and copying by the Illinois EPA upon request.

c. A summary of the above records shall be submitted every 6 months beginning with the initial month that the BFs and BOFs are operated at the increased production rates. This report shall be submitted to both the Regional Office and Permit Section.

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
1340 North Ninth Street
Springfield, Illinois 62702

13a. This permit incorporates by reference the conditions of Construction Permit 94090026.

b. The conditions of Operation Permit 95010001 for the emission unit(s) covered by this permit supersede the conditions of this permit where a conflict exists.

It should be noted that a detailed review of the emission unit(s) covered by this permit will be performed during the review of the pending CAAPP application.

If you have any questions on this, please call Kevin Smith at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:jar

cc: Region 3

Illinois Environmental Protection Agency · P. O. Box 19276, Springfield, IL 62794-9276

217/782-2113

OPERATING PERMIT

PERMITTEE

Granite City Division of National Steel Corporation
Attn: Fred Steinkuehler
20th & State Streets
Granite City, IL 62040

Application No.: 72080043 I.D. No.: 119813AAI
Applicant's Designation: BOF1187360 Date Received: July 22, 1992
Subject: Basic Oxygen Furnace Shop
Date Issued: September 15, 1992 Expiration Date: June 1, 1994
Location: 20th & Omaha Streets, Granite City

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of 2 BOF Vessels and an ESP, reladling station, ~~truck~~ track hopper and baghouse, flux bins and baghouse and 5 ladle dryers/pre-heaters as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1. Production of steel from the melt shop shall not exceed 6,900 NT/day averaged over any month.

2. Overlapping operations of the BOF Vessels is allowed only under the following conditions:

   a. (i) the charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., baghouse) and the alloy addition at the vessel tapping has been completed for at least 1 minute.

   (ii) sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other vessel in order to satisfy condition (i) above.

   (iii) only overlapping of tapping, after alloy addition, at one vessel and the charge and/or blow on the other vessel is allowed.

   (iv) conditions (i) and (ii) above shall be part of standard operating procedure (SOP) of the BOF vessels.

   b. Each BOF vessel shall be equipped with a Fume Suppression System which shall be in use at all times that tapping is occurring during overlapping operations.

3. This permit allows the operation of the melt shop vessels and associated control equipment during malfunction and breakdown under the following conditions:

   a. Operation of the ESP with more than 4 fields not functioning shall be considered a malfunction for reporting, logging and recordkeeping purposes.

   b. Operation of a melt shop vessel shall not be continued for longer than the time needed to finish the heat in process at the time of the malfunction.

   c. In the event of a malfunction the Permittee shall immediately repair the cause of the malfunction and take all necessary steps to prevent a repeat of the malfunction.

4. The Permittee shall implement an operating program to reduce malfunction emissions during an ESP outage of 5 or more ESP fields. Such program shall include but not be limited to maintaining an inventory of spare parts, daily inspections and performing scheduled maintenance.

5a. During operation of the BOF ESP with one of the 6 passageways dampered off, the stack gas pulpit set point shall not exceed 620,000 cfm.

b. The pulpit stack gas flow meter shall be calibrated on at least a quarterly basis.

ci. The Permittee shall keep a continuous strip chart record of the stack gas flow rate during ESP use.

ii. This record shall be maintained for three years and be available for inspection by the Agency upon request.

6. The regional IEPA Office at 2200 Mall Street, Collinsville shall be notified by 10:00 a.m. of the next work day, of any malfunction or breakdown which results in emissions in excess of the IEPA Rules or the provisions of the federal consent decree.

7. A log shall be kept of all malfunctions and breakdowns at the basic oxygen furnace and reported quarterly to the regional office recording the following:

   a. date and time of malfunction or breakdown;
   b. length of time that operation is continued during malfunction and breakdown to the nearest quarter hour;
   c. quantity of emissions emitted during malfunction or breakdown, and the method by which the quantity was determined;
   d. cause of malfunction or breakdown;
   e. actions taken to correct malfunction or breakdown;
   f. actions taken to mitigate emissions as far as practicable during malfunction or breakdown.

Special conditions #7 and #6 supersede standard condition #9.

8. The facility shall comply with all applicable conditions of the federal consent decree and of the Amendments which were agreed to by National Steel Corporation and the Illinois Environmental Protection Agency on May 18, 1981 and September 17, 1984.

9. A copy of the monthly opacity exceedance report of the BOF ESP shall be sent to the IEPA Regional Office. Henceforth these reports shall contain all opacity measurements which exceed 30 percent, averaged over a six minute period. These "excess opacity" reports shall provide, for each such incident, the percent opacity measured as well as the date and span of such incident. These reports shall state the reasons for the excess opacity. The report shall also specify the date of those periods during which the continuous monitoring system was not in operation.

10. Vessels #1 and #2 may only be operated as top oxygen-injected vessels. However, for purposes of checkout and stack testing only, Vessels #1 and #2 may be operated during the time of this permit as peripheral and bottom oxygen injected vessels for a maximum of 120 days. Any further operation of the vessels as other than top oxygen-injected vessels shall be pursuant to a permit granted for such additional operation.

11. Permittee shall use large covers or an alternative control method so as to reduce lance hole emissions to the lowest practicable level. Proof that an alternative control method is equivalent to lance hole covers is the responsibility of the Permittee.

12a. At least 150 days prior to expiration date of this operating permit, tests shall be performed on a BOF which demonstrate compliance with 35 Ill. Adm. Code 212.123, 212.446(a) and 212.322. Compliance shall be demonstrated over the entire cycle (operations from the beginning of the charging process through the end of the tapping process). Emissions shall be measured at the main (ESP) stack. Also, opacity readings of the main stack and roof vent shall be conducted and recorded.

b. These tests shall be performed by an approved independent testing service during conditions which are representative of maximum emissions.

c. These tests shall be performed during operation of the ESP with one of the 6 passageways dampered off.

d. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A and 40 CFR 61, Appendix B for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Particulate Matter	USEPA Method 5
Opacity	USEPA Method 9

e. The Agency shall be notified in writing a minimum of thirty (30) days prior to the expected date of these tests and further notified a minimum of five (5) working days prior to the test of the exact date, time and place of these tests, to enable the Agency to witness these tests.

f. The Final Report of these tests shall include as a minimum:

i. A tabelized summary of results which includes:

- process/mode tested (e.g. charge)
- process weight rate
- allowable emission limit per 212.322
- main stack measured PM emissions
- average opacity of main stack
- average opacity of roof vent
- stack gas pulpit set point
- actual measured stack gas flow rate
- compliance demonstrated - Yes/No

ii. Opacity recording forms.

iii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing
- a discussion of any preparatory actions taken, i.e. inspections maintenance and repair.

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

vi. An explanation of any discrepancies among individual tests or anomolous data.

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized and in no case later than upon the submittal of the renewal application for this permit.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent addresses are:

Illinois Environmental Protection Agency
Attn: Source Emission Test Specialist
Division of Air Pollution Control
Intercontinental Center
1701 First Avenue
Maywood, Illinois 60153

Illinois Environmental Protection Agency
Division of Air Pollution Control - Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
1340 N. Ninth Street
Springfield, Illinois 62702

It should be noted that this permit has been revised to allow limited overlapping BOF operations.

If you have any questions on this, please call Jim Ross at 217/782-2113.

Donald E Sutton/JRR

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JRR:ds:0466N/8-12

cc: Region 3
Don Gimbel

Illinois Environmental Protection Agency · P. O. Box 19276, Springfield, IL 62794-9276

217/782-2113

OPERATING PERMIT

PERMITTEE

Granite City Division of National Steel Corporation
Attn: Fred Steinkuehler
20th & State Streets
Granite City, IL 62040

Application No.: 72080043 I.D. No.: 119813AAI
Applicant's Designation: BOF1187360 Date Received: June 11, 1992
Subject: Basic Oxygen Furnace Shop
Date Issued: June 25, 1992 Expiration Date: June 1, 1994
Location: 20th & Omaha Streets, Granite City

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of 2 BOF Vessels and an ESP, reladling station, truck hopper and baghouse, flux bins and baghouse and 5 ladle dryers/pre-heaters as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1. Production of steel from the melt shop shall not exceed 6,900 NT/day averaged over any month.

2. Melt shop operation will be limited to the operation of one vessel at a time until a demonstration has been made, pursuant to the requirements of the federal consent decree filed in the U.S. District Court for the Southern District on May 18, 1981, that the 2 vessels can be operated in compliance with all applicable rules.

3. This permit allows the operation of the melt shop vessels and associated control equipment during malfunction and breakdown under the following conditions:

   a. Operation of the ESP with more than 4 fields not functioning shall be considered a malfunction for reporting, logging and recordkeeping purposes.

   b. Operation of a melt shop vessel shall not be continued for longer than the time needed to finish the heat in process at the time of the malfunction.

   c. In the event of a malfunction the Permittee shall immediately repair the cause of the malfunction and take all necessary steps to prevent a repeat of the malfunction.

4. The Permittee shall implement an operating program to reduce malfunction emissions during an ESP outage of 5 or more ESP fields. Such program shall include but not be limited to maintaining an inventory of spare parts, daily inspections and performing scheduled maintenance.

5a. During operation of the BOF ESP with one of the 6 passageways dampered off, the stack gas pulpit set point shall not exceed 620,000 cfm.

b. The pulpit stack gas flow meter shall be calibrated on at least a quarterly basis.

ci. The Permittee shall keep a continuous strip chart record of the stack gas flow rate during ESP use.

ii. This record shall be maintained for three years and be available for inspection by the Agency upon request.

6. The regional IEPA Office at 2200 Mall Street, Collinsville shall be notified by 10:00 a.m. of the next work day, of any malfunction or breakdown which results in emissions in excess of the IEPA Rules or the provisions of the federal consent decree.

7. A log shall be kept of all malfunctions and breakdowns at the basic oxygen furnace and reported quarterly to the regional office recording the following:

   a. date and time of malfunction or breakdown;
   b. length of time that operation is continued during malfunction and breakdown to the nearest quarter hour;
   c. quantity of emissions emitted during malfunction or breakdown, and the method by which the quantity was determined;
   d. cause of malfunction or breakdown;
   e. actions taken to correct malfunction or breakdown;
   f. actions taken to mitigate emissions as far as practicable during malfunction or breakdown.

   Special conditions #7 and #6 supersede standard condition #9.

8. The facility shall comply with all applicable conditions of the federal consent decree and of the Amendments which were agreed to by National Steel Corporation and the Illinois Environmental Protection Agency on May 18, 1981 and September 17, 1984.

9. A copy of the monthly opacity exceedance report of the BOF ESP shall be sent to the IEPA Regional Office. Henceforth these reports shall contain all opacity measurements which exceed 30 percent, averaged over a six minute period. These "excess opacity" reports shall provide, for each such incident, the percent opacity measured as well as the date and span of such incident. These reports shall state the reasons for the excess opacity. The report shall also specify the date of those periods during which the continuous monitoring system was not in operation.

10. Vessels #1 and #2 may only be operated as top oxygen-injected vessels. However, for purposes of checkout and stack testing only, Vessels #1 and #2 may be operated during the time of this permit as peripheral and bottom oxygen injected vessels for a maximum of 120 days. Any further operation of the vessels as other than top oxygen-injected vessels shall be pursuant to a permit granted for such additional operation.

11. Permittee shall use large covers or an alternative control method so as to reduce lance hole emissions to the lowest practicable level. Proof that an alternative control method is equivalent to lance hole covers is the responsibility of the Permittee.

12a. At least 150 days prior to expiration date of this operating permit, tests shall be performed on a BOF which demonstrate compliance with 35 Ill. Adm. Code 212.123, 212.446(a) and 212.322. Compliance shall be demonstrated over the entire cycle (operations from the beginning of the charging process through the end of the tapping process). Emissions shall be measured at the main (ESP) stack. Also, opacity readings of the main stack and roof vent shall be conducted and recorded.

b. These tests shall be performed by an approved independent testing service during conditions which are representative of maximum emissions.

c. These tests shall be performed during operation of the ESP with one of the 6 passageways dampered off.

d. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A and 40 CFR 61, Appendix B for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Particulate Matter	USEPA Method 5
Opacity	USEPA Method 9

e. The Agency shall be notified in writing a minimum of thirty (30) days prior to the expected date of these tests and further notified a minimum of five (5) working days prior to the test of the exact date, time and place of these tests, to enable the Agency to witness these tests.

f. The Final Report of these tests shall include as a minimum:

i. A tabelized summary of results which includes:

- process/mode tested (e.g. charge)
- process weight rate
- allowable emission limit per 212.322
- main stack measured PM emissions
- average opacity of main stack
- average opacity of roof vent

- stack gas pulpit set point
- actual measured stack gas flow rate
- compliance demonstrated - Yes/No

ii. Opacity recording forms.

iii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing
- a discussion of any preparatory actions taken, i.e. inspections maintenance and repair.

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

vi. An explanation of any discrepancies among individual tests or anomolous data.

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized and in no case later than upon the submittal of the renewal application for this permit.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent addresses are:

Illinois Environmental Protection Agency
Attn: Source Emission Test Specialist
Division of Air Pollution Control
Intercontinental Center
1701 First Avenue
Maywood, Illinois 60153

Illinois Environmental Protection Agency
Division of Air Pollution Control - Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
1340 N. Ninth Street
Springfield, Illinois 62702

It should be noted that special conditions #5 and #12 have been revised. Take special note that testing is now required to be performed with one of the 6 passageways of the ESP dampered off.

If you have any questions on this, please call Jim Ross at 217/782-2113.

Donald E. Sutton

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JRR:mab/197N/sp/61-65

cc: Region 3
Don Gimbel

72080043

R009435

National Steel

Granite City Division
National Steel Corporation
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

July 17, 1992

RECEIVED
JUL 22 1992
IEPA-DAPC-SPFLD

CERTIFIED MAIL NO. P 987 623 357
RETURN RECEIPT REQUESTED

Mr. Donald Sutton
Manager, Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Mr. Sutton:

Subject: Application for Modification of the Operating Permit for the Basic Oxygen Furnace Shop, I.D. No. 119813AAI, IEPA Application No. 72080043, Granite City Division Application No. BOF 079249 0

Granite City Division of National Steel Corporation (the Company) has received the Operating Permit for the Basic Oxygen Furnace Shop (BOF) issued by the Agency on June 25, 1992. The Company hereby makes application to modify a condition of the Permit - Special Condition No. 2 - to allow for overlapping of a tap on one vessel, after alloy addition, and a hot metal charge and blow on the other vessel.

On June 29, 1992, J. Benbenek and S. McGovern of the IEPA Collinsville office observed the operation of the BOF Shop with and without the use of a fume suppression system currently installed on Vessel No. 1. The fume suppression system consists of two burners which allow for injection of natural gas into the ladle as the metal is tapped on Vessel No. 1. The object of the system is to burn the oxygen out of the ladle to eliminate oxide emissions. The Company has installed the fume suppression system in order that the above cited overlapping of BOF heats may be allowed.

In response to questions posed by Mr. Benbenek regarding the fume suppression system, a package of information is being submitted to the IEPA Collinsville office. The package includes videos of tap side emissions during tapping, with and without the use of fume suppression. Also included in the package is a copy of the paper Fume Suppression for Control of Oxide Emission (Heys, S. Hoffman, Jr., C.F. and Ravasio, D, APCA Conference on Minimizing Energy Costs in Air Pollution Control Systems, April 16-18, 1985). A copy of this paper is attached.

Upon completion of the inspection Mr. Benbenek expressed tentative approval of the system, indicating that he observed a noticeable difference in emissions during use of the fume suppression system. Upon IEPA approval and the requested BOF Operating Permit modification, the Company will immediately install fume suppression on the second vessel.

Because the Company has a limited time in which it must install the fume suppression system or remove it, the Agency's immediate response to this application will be greatly appreciated.

Should further information be required to process this application, please contact my office or that of Connie Hickman, telephone (618) 451-4027.

Very truly yours,

Joseph S. Kocot

Joseph S. Kocot
Director-Maintenance & Engineering

Attachment
cc: C. Hickman
J. Blaies
BOFFSMOD.JTB

ATTACHMENT

R009438

FUME SUPPRESSION FOR CONTROL OF OXIDE EMISSION

BY

STEPHEN HEYS
MANAGER, TECHNICAL SERVICE
USS ENGINEERS AND CONSULTANTS, INC.

CHARLES F. HOFFMAN, JR.
MANAGER, PLANT ENVIRONMENTAL PROJECTS
UNITED STATES STEEL CORPORATION

DINO RAVASIO
RESEARCH CONSULTANT
UNITED STATES STEEL CORPORATION

PRESENTED AT

APCA CONFERENCE ON
MINIMIZING ENERGY COSTS IN
AIR POLLUTION CONTROL SYSTEMS

APRIL 16-18, 1985
PITTSBURGH, PENNSYLVANIA

FUME SUPPRESSION FOR CONTROL OF OXIDE EMISSION

ABSTRACT

EXPERIMENTAL WORK HAS SHOWN THAT IF OXYGEN CAN BE ELIMINATED ABOVE MOLTEN IRON, THE RATE OF GENERATION OF FUME IS DRASTICALLY REDUCED. THIS METHOD OF FUME CONTROL HAS BEEN PUT INTO PRACTICE IN OPEN-HEARTH, BOP SHOP AND ELECTRIC-FURNACE TAPPING; MOLTEN IRON TRANSFER AND IN CASTING AT BLAST FURNACES. THE USE OF FUME SUPPRESSION TECHNIQUES HAS NEGATED THE COST TO INSTALL EXPENSIVE EVACUATION-CAPTURE EQUIPMENT WITH ASSOCIATED HIGH ENERGY REQUIREMENTS AND OPERATING COSTS. THESE PRACTICES HAVE BROUGHT STEEL AND IRON-MAKING OPERATING FACILITIES INTO COMPLIANCE WITH APPLICABLE EMISSION STANDARDS.

THE TYPICAL METHOD TO CONTROL FUGITIVE EMISSION FROM IRON AND STEELMAKING SHOPS IS TO INSTALL AN EVACUATION COLLECTION SYSTEM. THIS KIND OF INSTALLATION IS EXPENSIVE TO INSTALL, IS ENERGY INTENSIVE, AND IS A HIGH MAINTENANCE ITEM RESULTING IN AN ADDED COST TO PRODUCE STEEL. TO AVOID THIS HIGH CAPITAL AND OPERATING COSTS, OTHER METHODS TO CONTROL EMISSION WERE INVESTIGATED.

IN THE EARLY 60'S, U. S. STEEL RESEARCH PERSONNEL STUDIED MECHANISM OF IRON-OXIDE FUME FORMATION BY MEANS OF A SERIES OF WELL-CONTROLLED EXPERIMENTS. FROM THIS WORK IT BECAME CLEAR THAT METAL OXIDE FUMES ARE FORMED BY REACTION OF THE METAL VAPOR, WHICH IS ALWAYS PRESENT OVER A BATH OF LIQUID METAL, AND THE OXYGEN PRESENT IN THE GAS PHASE.

IT WAS SHOWN THAT THE METAL VAPOR DIFFUSES AWAY FROM THE METAL SURFACE WHILE THE OXYGEN IN THE GAS PHASE DIFFUSES TOWARD THE METAL SURFACE. AT SOME SHORT DISTANCE FROM THE SURFACE THE METAL VAPOR AND THE OXYGEN REACT TO GIVE FINELY DIVIDED IRON-OXIDE PARTICLES IN THE FORM OF A FOG OR MIST. THEY FOUND BECAUSE OF THE FORMATION OF THE OXIDE, THE PARTIAL PRESSURES OF IRON VAPOR AND OXYGEN ARE CLOSE TO ZERO IN THE ZONE WHERE THE FOG IS FORMED. THEREFORE, THE FORMATION OF IRON OXIDE IN THE GAS PHASE CREATES A SINK TO WHICH IRON VAPOR AND OXYGEN DIFFUSE IN A COUNTER CURRENT DIRECTION.

FOR A GIVEN SET OF EXPERIMENTAL CONDITIONS AN INCREASE IN THE OXYGEN CONTENT OF THE GAS DECREASES THE DISTANCE OVER WHICH THE METAL VAPOR IS DIFFUSING, INCREASING THE RATE OF VAPORIZATION. INCREASING THE OXYGEN CONCENTRATION STILL FURTHER WILL CAUSE THE SUPPLY OF OXYGEN TO THE METAL SURFACE TO EXCEED THE SUPPLY OF METAL VAPOR, AND THE RESULT IS THAT THE METAL SURFACE OXIDIZES, LEADING TO CESSATION OF VAPORIZATION.

DURING FURNACE TAPPING AND POURING OF LIQUID STEEL OR HOT METAL, THERE IS NO SLAG COVER ON THE METAL; THEREFORE, FUME FORMATION IS INEVITABLE. HOWEVER, ON THE BASIS OF THE MECHANISM JUST DESCRIBED, IT IS CLEAR THAT FUME FORMATION CAN BE DRASTICALLY REDUCED BY DISPLACING AIR FROM THE EXPOSED SURFACE OF THE LIQUID METAL. EFFECTIVE DISPLACEMENT OF AIR (OXYGEN) ABOVE THE EXPOSED SURFACE OF THE LIQUID METAL IS A PREREQUISITE FOR ALL FUME-SUPPRESSION TECHNIQUES.

TO FURTHER VERIFY THE MECHANISM OF FUME FORMATION FROM IRON ALLOYS (STEEL), PARTICULARLY WITH RESPECT TO THE ROLE OF MANGANESE, IT WAS DECIDED TO PERFORM EXPERIMENTS IN WHICH THE POURING OF STEEL WAS SIMULATED. IN THESE EXPERIMENTS ABOUT 50 POUNDS OF STEEL WERE MELTED IN AN INDUCTION FURNACE AND SUBSEQUENTLY POURED INTO A CRUCIBLE. THE FUMES EMITTED DURING TAPPING WERE DRAWN THROUGH A HOOD SUSPENDED OVER THE CRUCIBLE AND

COLLECTED ON A GLASS WOOL FILTER WHICH WAS ANALYZED FOR TOTAL IRON AND MANGANESE AFTER EACH EXPERIMENT. VARIOUS SHROUDING GASES, INCLUDING STEAM, COULD BE SUPPLIED DURING TAPPING.

THE TYPICAL TAP TIME FOR THESE EXPERIMENTS WAS ABOUT 1 MINUTE, AND THIS MADE IT DIFFICULT TO OBTAIN REPRODUCIBLE RESULTS WITH RESPECT TO THE TOTAL AMOUNT OF MATERIAL (IRON AND MANGANESE) COLLECTED ON THE FILTER ALTHOUGH EVERY ATTEMPT WAS MADE TO COLLECT ALL THE FUMES EMITTED DURING A TAP. TO MAINTAIN FUME GENERATION FOR A PERIOD OF ABOUT ONE HOUR, 500 POUNDS OF STEEL WERE KEPT MOLTEN IN AN INDUCTION FURNACE. THE METAL SURFACE WAS KEPT FREE FROM OXIDE BY SKIMMING REPEATEDLY. ISOKINETIC SAMPLES WERE EXTRACTED FROM THE HOOD-DUCT SYSTEM SUSPENDED OVER THE FURNACE.

IN ANALYZING THE RESULTS FROM THESE EXPERIMENTS, IT HAS TO BE KEPT IN MIND THAT THE MELTS USED IN BOTH TYPES OF EXPERIMENTS WERE NOT PURE LIQUID IRON BUT LIQUID STEEL THAT CONTAINED, AMONG OTHER THINGS, MANGANESE AS ONE OF THE IMPORTANT ALLOYING ELEMENTS. THE MORE EFFECTIVE A SHROUDING TECHNIQUE IS IN KEEPING OXYGEN AWAY FROM THE LIQUID STEEL SURFACE THE LESS FUMING WILL OCCUR AND THE CLOSER WILL BE THE Mn/Fe RATIO IN THE EMITTED MATERIAL TO THAT PERTAINING TO THE BULK COMPOSITION OF THE STEEL.

THE DATA INDICATED THAT SHROUDING WITH STEAM DURING TAPPING HAS A BENEFICIAL EFFECT ON THE AMOUNT OF FUME EMITTED.

THIS IS ALSO CORROBORATED BY THE DATA OBTAINED FROM THE 500-POUND EXPERIMENTS. IT WAS SEEN THAT THE EMISSIONS FROM SUPPRESSED HEATS ARE ABOUT HALF THOSE OF THE NONSUPPRESSED HEATS. FURTHER TESTS WERE PERFORMED BY BURNING A NATURAL-GAS FLAME OVER THE SURFACE OF THE LIQUID STEEL, THUS CONSUMING THE OXYGEN AND LEADING TO LESS FUMING.

IN THE EARLIEST PLANT TRIALS USING STEAM SHROUDING FOR FUME SUPPRESSION, IT WAS FOUND THAT A MIXTURE OF STEAM AND WATER GAVE BETTER RESULTS THAN DRY STEAM ONLY. IN GENERAL, IT CAN BE SAID THAT GAS SHROUDING USING A SHOWER-HEAD ARRANGEMENT OVER A LADLE IS NOT FULLY EFFECTIVE IN EXPELLING ALL OF THE OXYGEN FROM THE MELT SURFACE. THIS IS BECAUSE OF THE UNAVOIDABLE ENTRAINMENT OF AIR (OXYGEN) INTO THE GAS SHROUD EXPANDING OVER THE LADLE.

IT WAS HYPOTHESIZED THAT A STEAM-WATER MIXTURE IS MORE EFFECTIVE THAN A DRYSTEAM SHROUD IN EXPELLING AIR FROM THE MELT SURFACE BECAUSE THE EVAPORATING FINE WATER DROPLETS IN CLOSE PROXIMITY TO THE MELT SURFACE ARE ABLE TO EXPELL THE AIR (OXYGEN) MORE EFFECTIVELY, THUS LEADING TO LESS FUMING.

FROM INITIAL EXPERIMENTAL TESTING IT CAN BE CONCLUDED:

1. AS INDICATED BY THE BASIC MECHANISM OF FUME FORMATION, AN EFFECTIVE FUME-SUPPRESSION METHOD IS THAT WHICH CAN EXPEL AIR MOST EFFICIENTLY FROM THE VICINITY OF THE MELT SURFACE.

2. Steam-water mixtures are effective in suppressing fumes. The evaporating water droplets above the melt surface effectively displace air (oxygen) in the atmosphere above the melt.

3. Burning natural gas has been found to be an effective method to keep oxygen from the melt surface by virtue of the fact that the oxygen is consumed in the burning process.

Field Testing

If the presence of oxygen could be eliminated or minimized, the generation of red-brown fume could be minimized. Initial efforts to suppress these fumes involved the use of steam, as it was available from the boilers, to create an inert blanket over molten steel during open hearth tapping, as well as for charging hot metal into BOP furnaces. These attempts resulted in varying degrees of success. Various configurations of manifolds, as well as different types of nozzles, were used in an effort to develop a satisfactory blanket over the surface of the metal. During all of these trials, it was noted that one of the more significant parameters appeared to be the quality of the steam being used. Poor quality steam, having some entrained water, was more effective in suppressing fume. To make use of this feature, a means of introducing water into the steam prior to its use was developed. As a result of the various trials and studies

CONDUCTED IN ALL OF THE STEELMAKING SHOPS, A SYSTEM UTILIZING A "WET STEAM" WAS UTILIZED SUCCESSFULLY FOR TAPPING OPERATIONS IN BOTH OPEN HEARTH AND ELECTRIC FURNACE SHOPS.

CONCURRENT WITH THE STUDIES UTILIZING STEAM, ATTEMPTS WERE MADE TO UTILIZE OTHER INERT GASES, PRIMARILY NITROGEN, AS A BLANKETING MEDIUM. THESE TRIALS PROVED TO BE LESS THAN SATISFACTORY, AND FURTHER TESTING WAS ABANDONED.

THE USE OF STEAM AS A SUPPRESSANT, ALTHOUGH TECHNICALLY SUCCESSFUL, PROVED TO BE METALLLURGICALLY DETRIMENTAL IN SEVERAL OF THE MELT SHOPS BECAUSE OF EXCESSIVE HYDROGEN PICK-UP IN THE STEEL. TO ELIMINATE THIS PROBLEM, A DECISION WAS MADE TO ATTEMPT TO PREVENT OXIDATION BY CONSUMING THE OXYGEN BY MEANS OF COMBUSTION RATHER THAN BLANKETING WITH AN INERT GAS. THIS MEANS OF SUPPRESSION PROVED TO BE JUST AS EFFECTIVE AS STEAM BLANKETING AND WAS APPLIED NOT ONLY TO THE TAPPING OF STEEL FROM OPEN HEARTH AND ELECTRIC FURNACES, BUT ALSO TO BOP TAPPING, HOT METAL TRANSFER AND BLAST FURNACE CASTHOUSES.

AFTER CONTINUAL TESTING, SUPPRESSION USING NATURAL GAS WAS FOUND TO BE A BETTER METHOD.

Open Hearth

Flame suppression of open hearth tapping fumes is accomplished by burning natural gas over the mouth of the tapping ladle and thereby consuming oxygen and preventing oxygen/molten steel contact. Attached Sketch 1 indicates the general mounting of these burners. However, the final position of burners for any installation must be determined on an individual basis. Ignition controls for the system are located at a position where an operator is located to observe the tap and initiate ladle additions.

BOP

Suppression of fumes generated while tapping a BOP furnace is accomplished through the combustion of natural gas in the vicinity of the flowing steel. As can be seen in the attached Sketch No. 5, burners are directed into the tapping ladle.

Various burners have been used in this application, depending on specific locations.

Hot Metal Transfer

Transfer of iron from torpedo ladles to transfer or charging ladles, as well as into and out of hot metal mixers, is also a source of heavy fume generation where supression through the combustion of natural gas has been very successful. Burners are positioned over the mouth of the receiving vessel so that any oxygen present in the vessel is consumed, resulting in an inert atmosphere (Sketches Nos. 7, 8, and 11). In all cases, the burners are ignited as noted by operating procedures.

Electric Furnace

Flame suppression is being used to control electric furnace tapping emissions. There have been various configurations of burner systems utilized to effect this suppression. They have consisted of suppression rings which contain a number of burners positioned over the ladle.

A second system involved the use of burners permanently mounted on the furnace platform adjacent to the pouring spout. (Sketch 4) The required number and final positions of the burners can only be determined after a complete anaylysis of the facility

ON WHICH THEY ARE TO BE INSTALLED. THE GEOMETRY OF THE FURNACE PLATFORM, THE LADLE, AND THE LADLE PIT WILL BE THE DETERMINING FACTORS FOR THIS DESIGN.

THE SYSTEM CONTROLS IN BOTH CASES ARE LOCATED IN A POSITION FROM WHICH THE OPERATOR OBSERVES THE TAP. THE NATURAL GAS WOULD BE ACTIVATED DEPENDENT UPON ESTABLISHED OPERATING PRACTICES.

Blast Furnaces

THE U. S. STEEL FUME SUPPRESSION TECHNIQUES HAVE BEEN SUCCESSFULLY APPLIED ON IRON HANDLING IN BLAST FURNACE CASTHOUSES. THIS TECHNIQUE UTILIZES THE COMBUSTION OF NATURAL GAS OVER THE IRON TROUGH, ALONG THE IRON RUNNERS AND SPOUTS, AS WELL AS IN THE IRON LADLES. THE RUNNERS ARE COVERED WITH SPECIALLY DESIGNED COVERS WHICH ASSIST IN CONTAINING THE COMBUSTION PRODUCTS FROM THE BUIRNING OF NATURAL GAS.

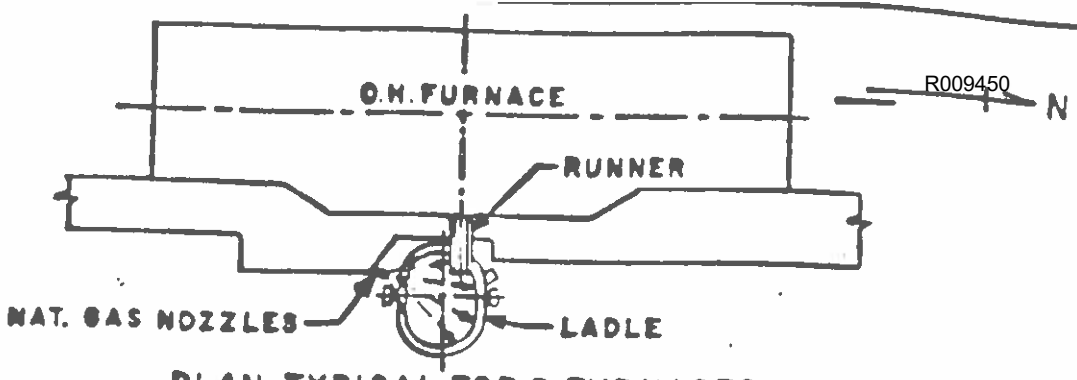
SEVERAL TYPES OF BURNERS HAVE BEEN USED IN DIFFERENT LOCATIONS AT VARIOUS TIMES. THE EFFECTIVE TYPES ARE DETERMINED BY EVALUATING THE RUNNER AND TROUGH SYSTEMS, THEN THE MOST EFFECTIVE SYSTEM IS ENGINEERED. THE CHOICE OF THE BURNER TYPE IS A MATTER OF INDIVIDUAL PREFERENCE. LOCATION, AS WELL AS TYPE OF BURNERS,

IS ALSO IMPORTANT. THE OPTIMUM LOCATION OF BURNERS AT THE TROUGH, RUNNERS AND SPOUTS MUST BE DETERMINED FOR EACH CAST HOUSE INSTALLATION.

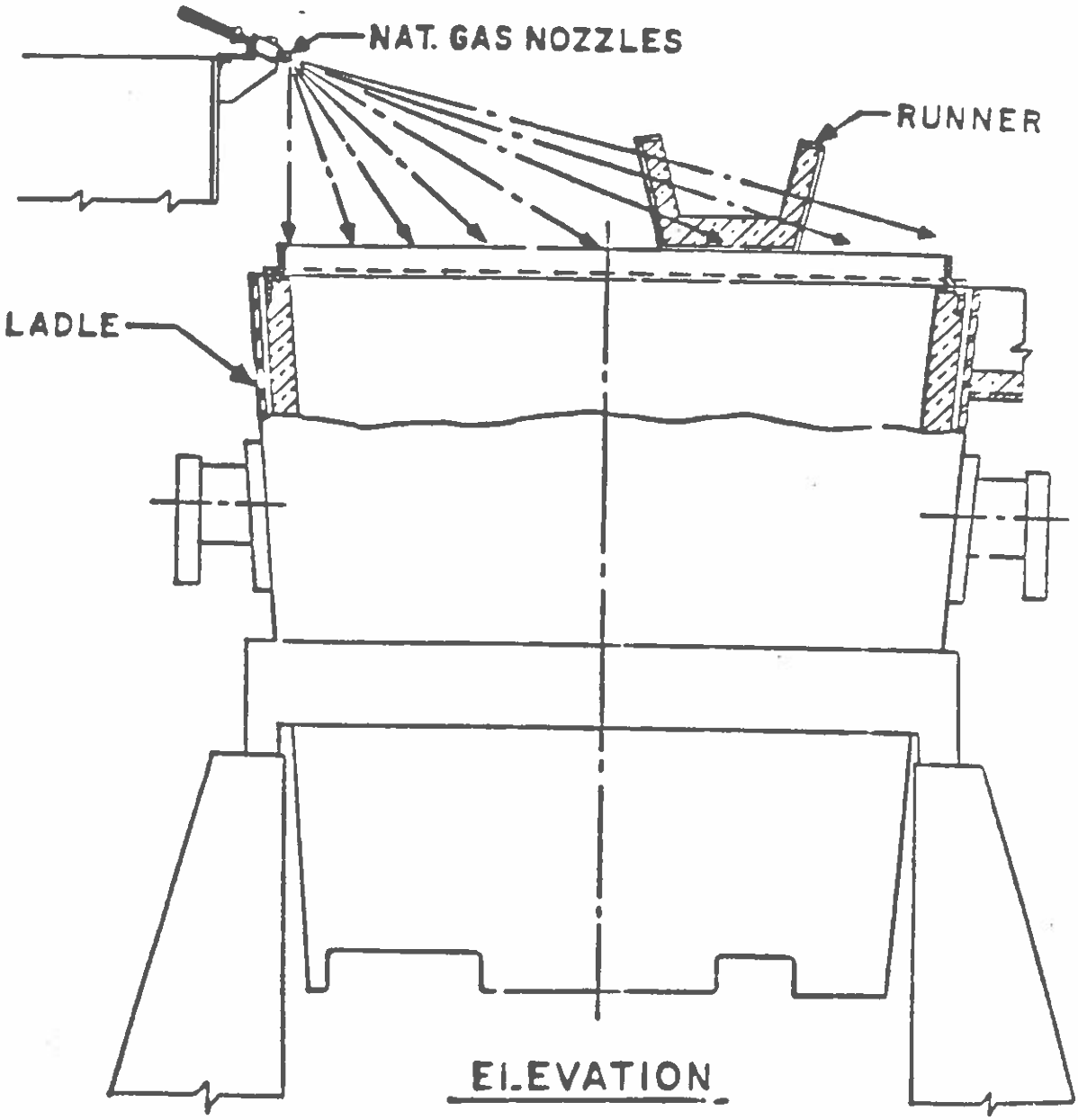
DEVELOPMENT OF RUNNER COVERS HAS BEEN AN ON-GOING EFFORT. VARIOUS SHAPES AND DESIGNS OF COVERS CAN BE FOUND IN DIFFERENT LOCATIONS BECAUSE OF THE DIFFERENT CONFIGURATIONS WITHIN THE CAST HOUSES.

AS A RESULT OF USING FUME SUPPRESSION IN U.S. STEEL CORPORATION IRON AND STEELMAKING SHOPS, COSTLY EVACUATION EQUIPMENT WITH ASSOCIATED HIGH OPERATING COSTS HAVE NOT BEEN INSTALLED. WHILE AT THE SAME TIME, ENVIRONMENTAL STANDARDS HAVE BEEN MET.

R009450



PLAN-TYPICAL FOR 9 FURNACES



ELEVATION

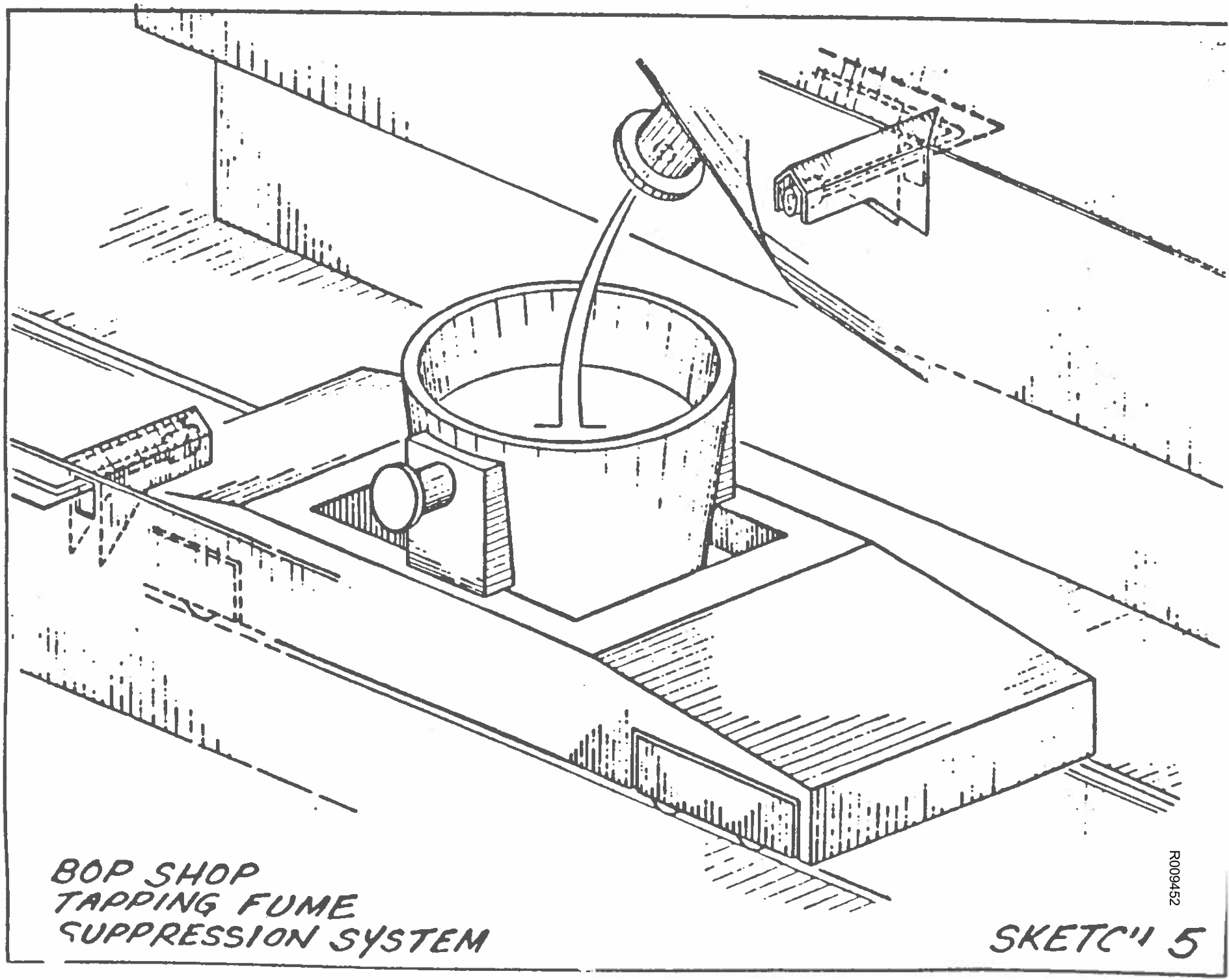
OPEN HEARTH
TAPPING EMISSIONS
SUPPRESSION

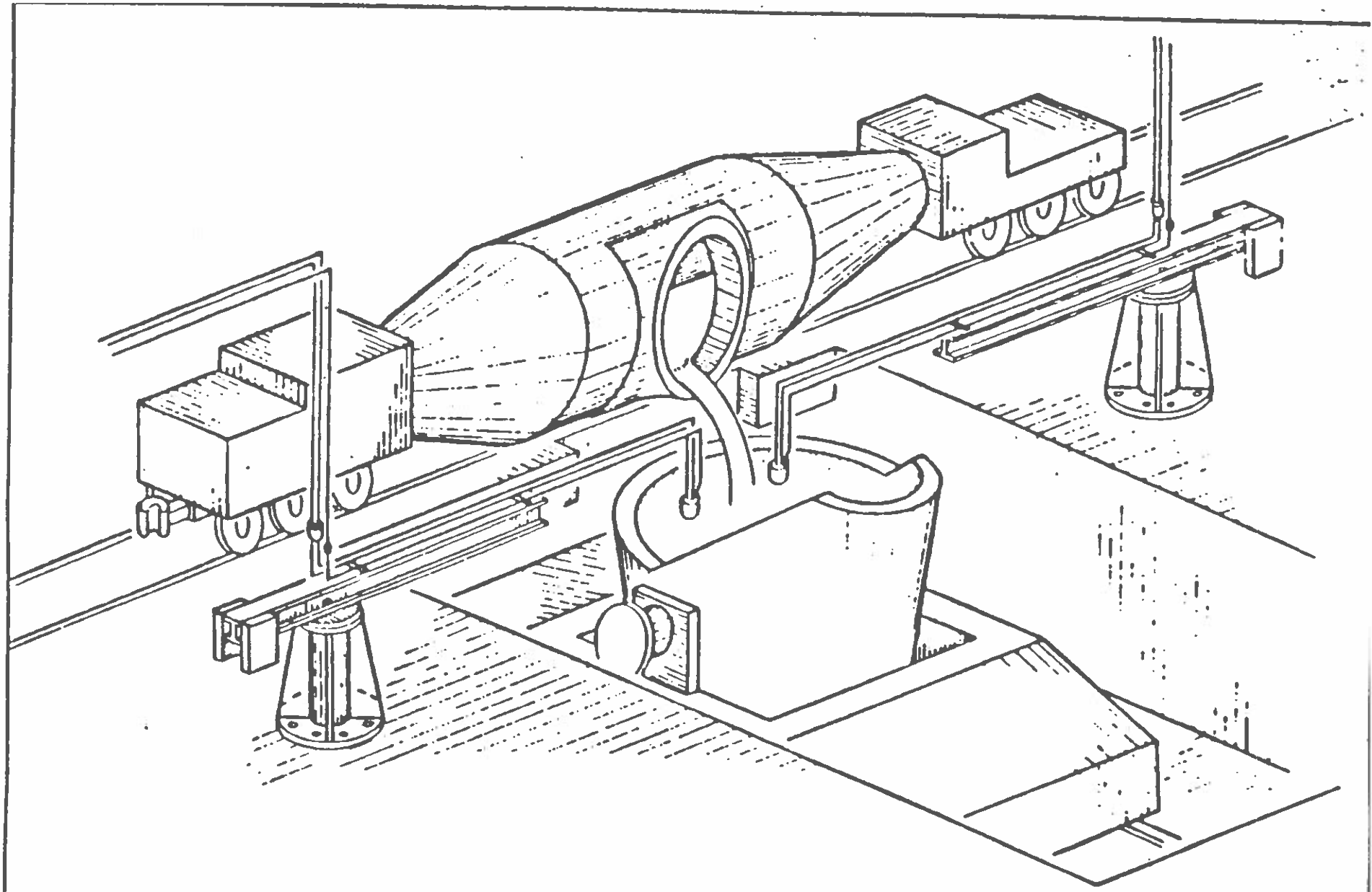
SKETCH 1

REV 1-23-82

SKETCH 4

ELECTRIC FURNACE
FLAME SUPPRESSION SYSTEM

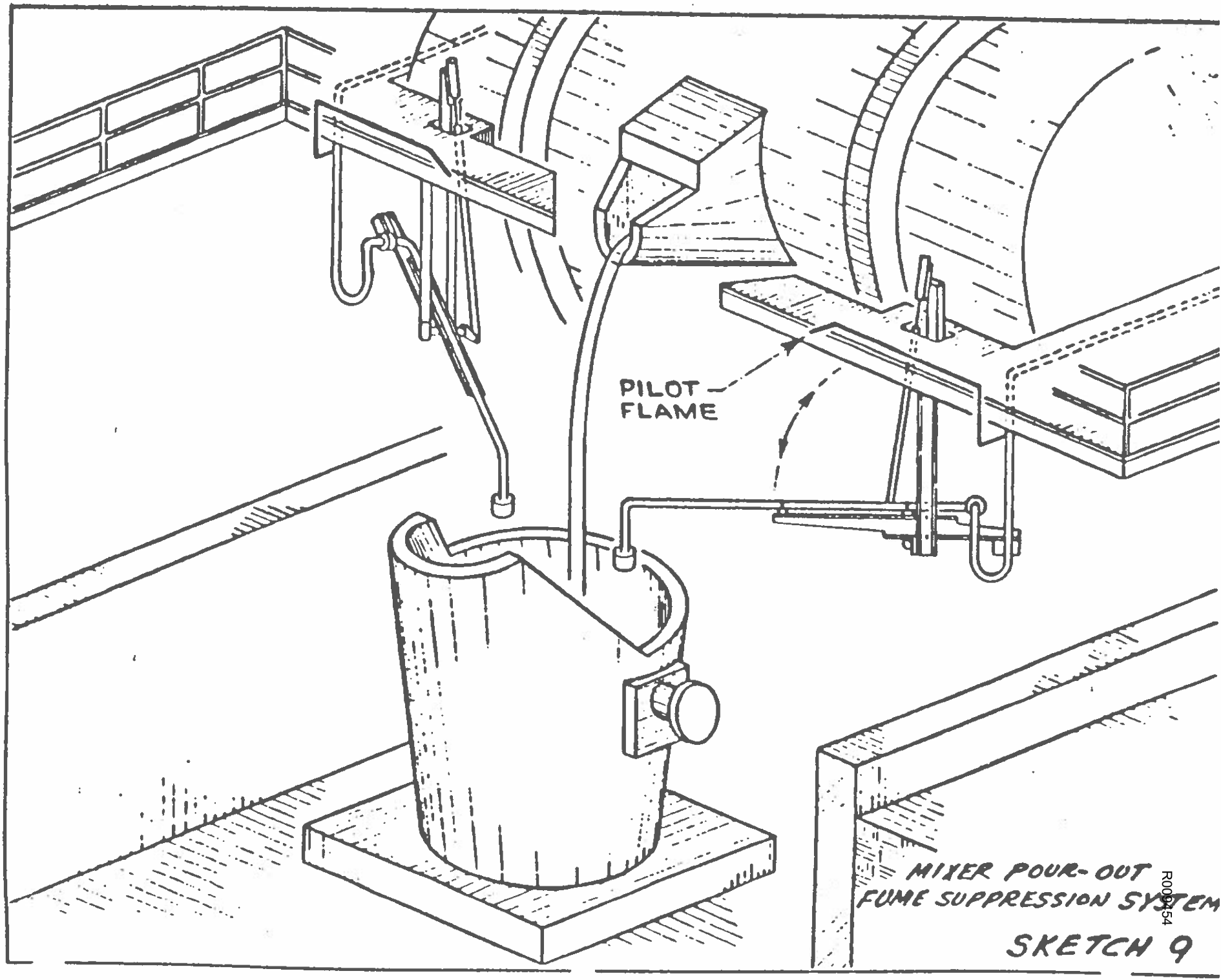

BOP SHOP
TAPPING FUME
SUPPRESSION SYSTEM
SKETCH 5
R009452



RELADLE FUME
SUPPRESSION SYSTEM

SKETCH 7

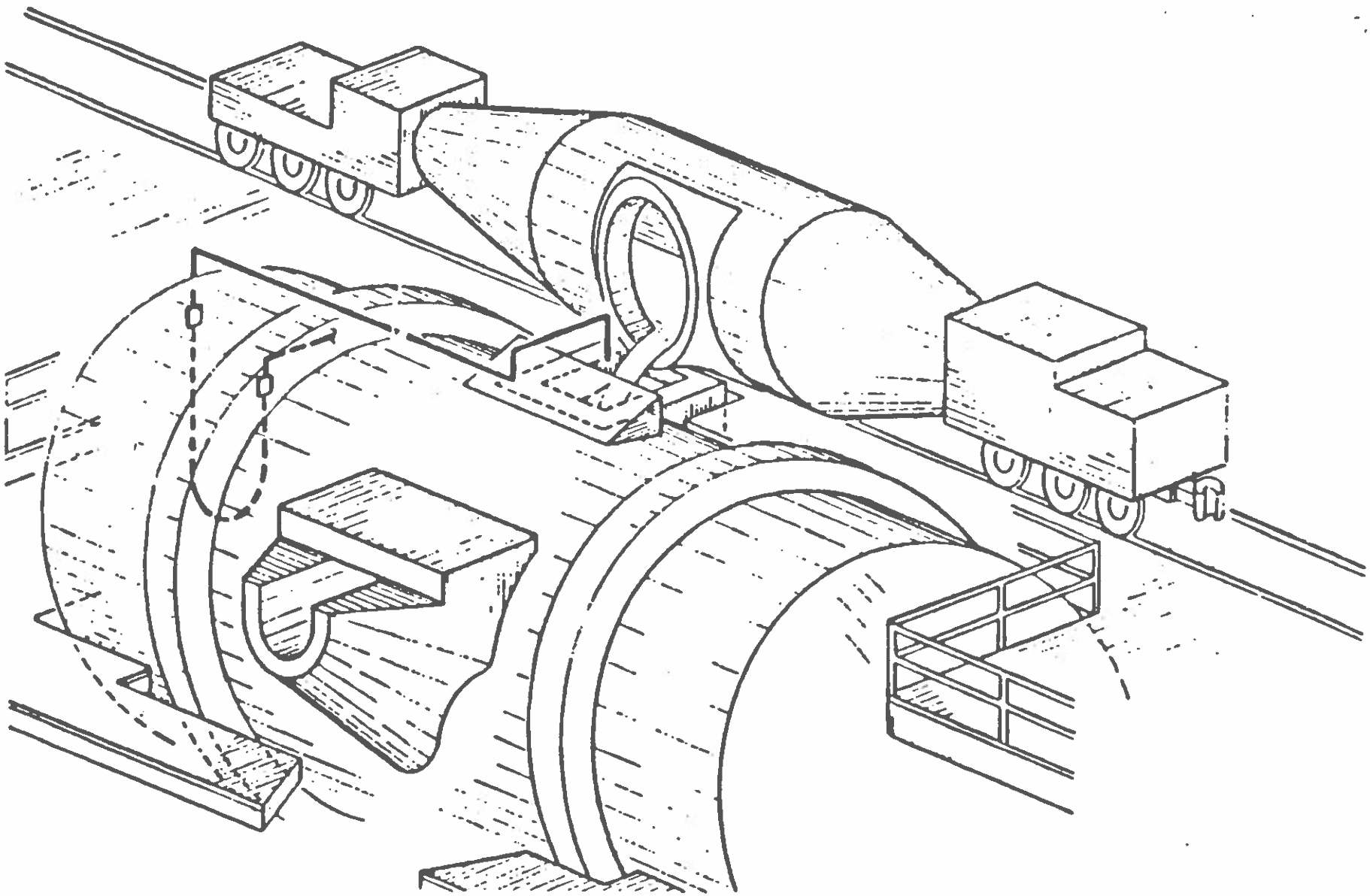
R0094533



MIXER POUR-OUT
FUME SUPPRESSION SYSTEM

SKETCH 9

R0009454



MIXER INLET BASKET
FUME SUPPRESSION SYSTEM

SKETCH 11

R009455

UEC
USX Engineers
& Consultants, Inc

QUESTIONNAIRE

1. Available Gas: Natural Gas _____; Coke Oven _____; Mixed _____; Other (specify) _____.
2. Gas Pressure: Natural Gas _____; Coke Oven _____; Mixed _____; Other _____.
3. Furnace Rate: _____ Tons/Day.
4. Number of tapping holes: _____.
5. Number of ladles: _____.
6. Capacity of ladles: _____.
7. Length of trough and runners: _____.
8. Cast/Day: _____.
9. Average time of cast: _____.
10. Drill angle: _____.
11. Drill bit size: _____.
12. Chemical analysis of iron: _____.
13. Iron temperature (average): _____.
14. Type of taphole refractory mix: _____.
15. Temperature of ladles: _____.
16. Are covers used on runners (Y/N)? _____.
17. Are covers used on ladles (Y/N)? _____.
18. Blueprints - casthouse trough, runners, ladles: _____.
19. Have there been any opacity readings at the casthouse monitor? _____. If so, what value? _____.

SH:lc/853L

UNCONTROLLED Figure 1

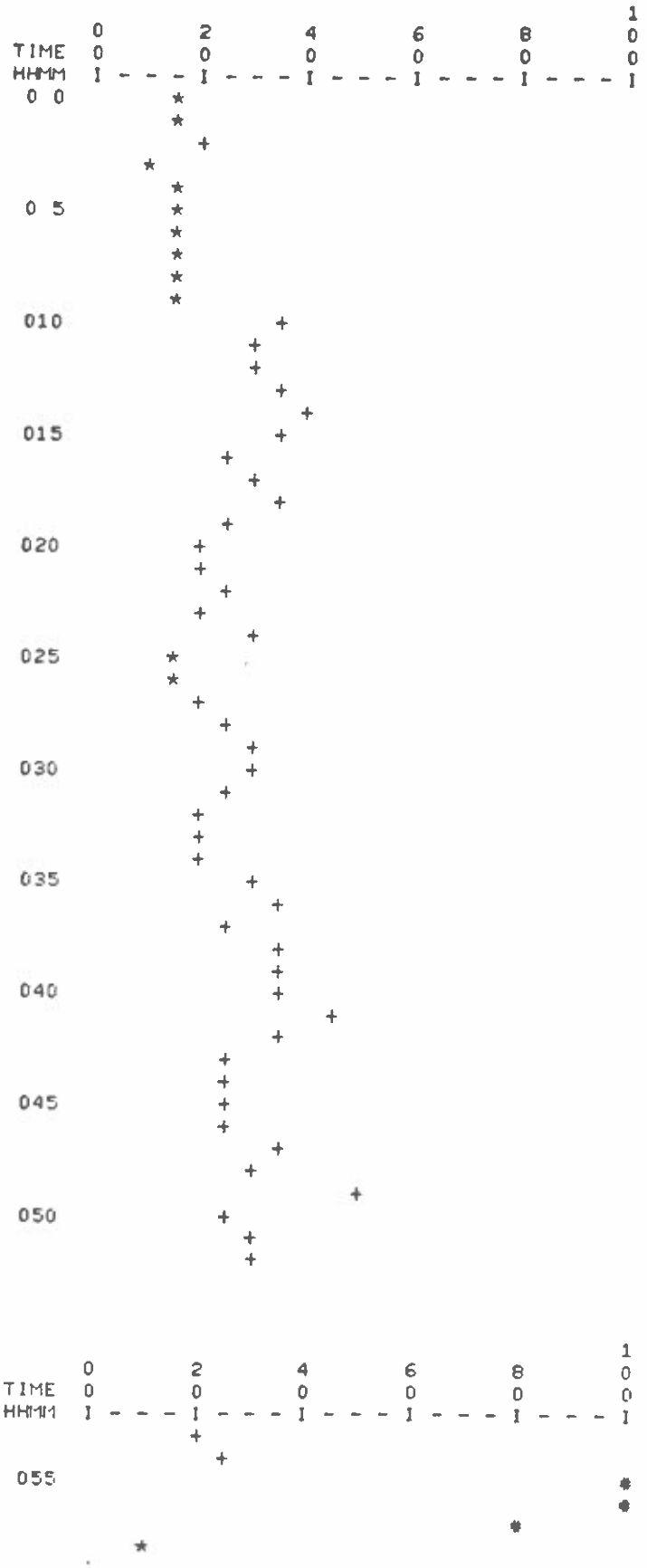
R009457

TIME SERIES PLOT

(MAX OBS EACH MINUTE)

V OT 01 103185 103185

OBS DATE 10/31/85



R009458

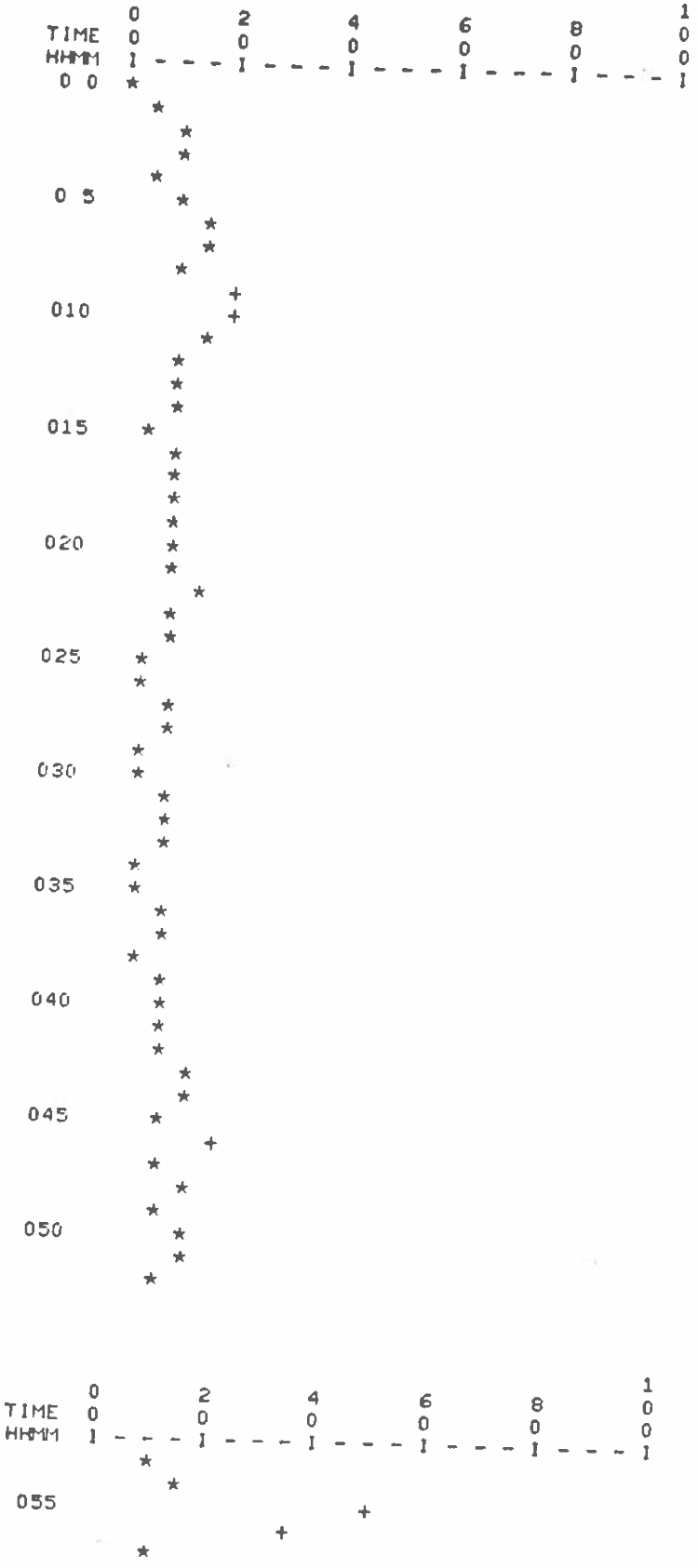
Figure 2
CONTROLLED

TIME SERIES PLOT

(MAX OBS EACH MINUTE)

V OT 01 12 986 005541

OBS DATE 12/ 9/86



R009459

217/782-2113

CONSTRUCTION PERMIT - PSD APPROVAL - REVISED
NESHAP SOURCE - NSPS SOURCE

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

PERMITTEE

Gateway Energy & Coke Company, LLC
Attn: Robert Parnell, Vice President and General Manager
2585 Edwardsville Road
Granite City, Illinois 62040

Application No.: 06070020
Applicant's Designation:
I.D. No.: 119040ATN
Date Received: February 25, 2010
Subject: Heat Recovery Coke Plant
Date Initial Permit Issued: March 13, 2008
Date Revised Permit Issued: April 28, 2010
Location: 2585 Edwardsville Road, Granite City

This Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a heat recovery coke plant, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for the above referenced project, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the findings and conditions which follow:

This revised permit authorizes carbon injection for mercury control to occur at a location after the spray dryer. (See Condition 4.1.1 and 4.1.5(b)(i).)

If you have any questions on this permit, please contact Jason Schnepp at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:JMS:jws

cc: Region 3
Lotus Notes
CES

4.1.5(a)

PM_{10} or such better performance as the manufacturer will warrrant, as determined by the "Generic Verification Protocol for Baghouse Filtration Products," as used by USEPA's Environmental Technology Verification program for evaluation of filter materials or ASTM Standard D6830-02, Characterizing the Pressure Drop and Filtration Performance of Cleanable Filter Media, or other equivalent protocol.

F. Quenching: Quenching operations shall be controlled by a baffle system and clean quench water consistent with the NESHAP for quench operations. (See also Condition 4.1.3-2(b).)

ii. BACT/LAER Emission Limits

A. Emissions of particulate matter (filterable and condensable) from the charging baghouse shall not exceed 0.016 lb/ton of coal charged.

B. Emissions of particulate matter (filterable and condensable) from the pushing multicyclone shall not exceed 0.08 lb/ton of coke pushed.

C. Emissions of particulate matter from the main stack (coking baghouse) shall not exceed 0.0050 gr/dscf (filterable only) and 0.0110 gr/dscf (filterable and condensable).

D. Emissions of particulate matter (filterable and condensable) during bypass of the spray dryer/fabric filter control system shall not exceed 0.08 gr/dscf.

E. Emissions of PM_{10} (filterable only) from the quench tower shall not exceed 0.044 lb/ton coal charged.

Condition 4.1.5(a) represents the application of the Best Available Control Technology and the Lowest Achievable Emission Rate.

b. Control of Mercury Emissions

i. The Permittee shall install, operate, and maintain an activated carbon injection system on the main stack for control of mercury emissions, which system shall be operated to comply with the following requirements for control of mercury emissions from the main stack. This system shall be designed to inject at least 10 pounds of activated carbon per million actual cubic feet of exhaust gases. The location of carbon injection into the exhaust gases, either before or

Gateway Energy - 06070020 4.1.5 (a)(i)(E)

E. The filter material in the filter system for the main stack shall be a membrane material, micro-fiber material, micro-fiber capped composite material or other similar filter material that has enhanced performance for collection of fine particulate as compared to conventional woven or felt filter material. The filter material shall also have been demonstrated to provide greater than 99.99 percent reduction in emissions of filterable $PM_{2.5}$ or such better performance as the manufacturer will warrrant, as determined by the "Generic Verification Protocol for Baghouse Filtration Products," as used by USEPA's Environmental Technology Verification program for evaluation of filter materials or ASTM Standard D6830-02, Characterizing the Pressure Drop and Filtration Performance of Cleanable Filter Media, or other equivalent protocol.

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Technology Transfer Network

Emission Measurement Center

Method 201A - PM10 and PM2.5 (In-stack, CRS) (Revised 12/1/2010)

Text of Test Method 201A - PM10 and PM2.5 (In-stack, CRS) (Revised 12/1/2010)

Electronic Reporting Tool 2/12

FREQUENTLY ASKED QUESTIONS (FAQS) for Method 201A

Can you use Method 201A in stacks that contain liquid droplets or are saturated with water vapor?

What changes were made in the 12-1-2010 revision to Method 201A, what comments did the Agency receive, and what were the Agency's responses to those comments?

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For FAQs about the revised Method 201A (December 2010 revisions), click HERE.

Can you use Method 201A in stacks that contain liquid droplets or are saturated with water vapor?

Method 201A cannot be used to measure emissions from stacks that have entrained moisture droplets (e.g., a wet scrubber stack), since these stacks may have water droplets larger than the cut size for the PM10-sizing device. To measure PM10 in stacks where water droplets are known to exist, EPA's Technical Information Document (TID-009: Methods 201 and 201A in Presence of Water Droplets) recommends use of Method 5 of Appendix A to 40 CFR part 60 (or a comparable method) and consideration of the particulate catch as PM10 emissions.

What changes were made in the 12-1-2010 revision to Method 201A, what comments did the Agency receive, and what were the Agency's responses to those comments?

The greatest change that was made to Method 201A was the addition of a cyclone to provide particle sizing at 2.5 um

aerodynamic diameter. The preamble to the promulgated test method provides a summary of the less significant revisions that were made, the comments of greatest significance, and the responses to those comments. A copy of the promulgation preamble is located here. A copy of the Response to Comments document is available here.

http://www.epa.gov/ttn/emc/methods/method201a.html
Last updated on Monday, February 13, 2012

Still have questions on this method? Contact the EMC expert Jason DeWees at dewees.jason@epa.gov .

R009464

ACKNOWLEDGMENT OF NAME/OWNERSHIP
CHANGE - CAAPP PERMIT

February 18, 2010

Arcelormittal Riverdale, Inc.
Attn: Michael Brennan
13500 South Perry Avenue
Riverdale, Illinois 60827

IEPA - DIVISION OF RECORDS MANAGEMENT
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Application No.: 02110058
I.D. No.: 031258ABR
Date Received: 10-03-08
Type of Source: Oxygen Furnace
Source Location: 13500 South Perry Avenue, Riverdale

"REVISED"
TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT

PERMITTEE

ISG Riverdale Inc.
Attn: William C. Mozes, Manager - Safety
13500 South Perry Avenue
Riverdale, Illinois 60827-1182

Application No.: 02110058 I.D. No.: 031258ABR
Source Location: 13500 South Perry Avenue, Riverdale
Operation of: Steel Manufacturing
Date Received: March 7, 1996
Date Issued: December 22, 2000 Expiration Date: December 22, 2005
Responsible Official: James N. Howell, General Manager

This permit is hereby granted to the above-designated Permittee to operate a Steel Manufacturing Facility, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

Revision Date Received: November 22, 2002
Revision Date Issued: January 29, 2003
Purpose of Revision: Minor Modification

This minor modification is being accomplished to split Acme Steel's Title V permit between Acme Steel and ISG Riverdale. The operations at the Chicago Coke and Furnace Plants will be owned and operated by Acme Steel Corporation, while the operations at the Riverdale Plant will be owned and operated by ISG, with the exception of the Cold Rolling Mill CR-23 and various insignificant activities, which have been transferred to Acme Packaging.

If you have any questions concerning this permit, please contact Michael J. Knobloch at 217/782-2113.

7.0 UNIT SPECIFIC CONDITIONS

7.1	Unit 01:	Boilers 5, 6, and 7
	Control 01:	None
7.2	Unit 02:	Basic Oxygen Furnace Processes
	Control 02:	Baghouses and ESP
7.1	Unit 03:	Continuous Caster
	Control 03:	Baghouse
7.4	Unit 04:	Steel Pickling and Rinsing
	Control 04:	Sieve Tray Scrubber
7.5	Unit 05:	Strip Oiling
	Control 05:	None
7.6	Unit 06:	Cold Rolling Mill Processes
	Control 06:	Baghouse
7.7	Unit 07:	Fugitive Emissions
	Control 07:	None

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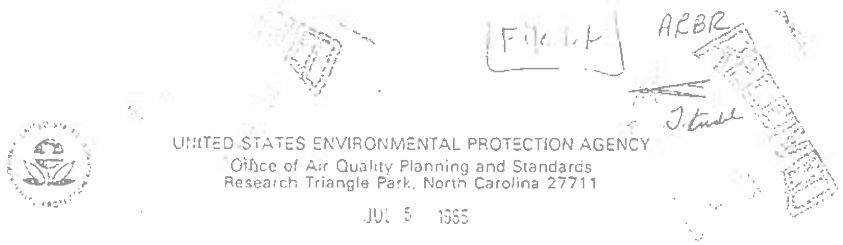

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

JUL 5 1985

MEMORANDUM

SUBJECT: Revised Draft Policy on Permit Modifications and Extensions

FROM: Darryl D. Tyler, Director
Control Programs Development Division (MD-15)

TO: Directors, Air Division
Regions I-X

The attached draft policy for handling changes to sources which have PSD permits and extensions of these permits is a revision of the November 19, 1984, draft policy distributed to the Regions for comment. This revised policy incorporates your comments on that draft.

There are two major revisions to the November 19, 1984, package:

(1) the section dealing with extensions for phased construction projects has been altered to provide a better explanation of the manner in which extensions for dependent and independent multi-phased projects are handled and the rationale for a distinction between the two types of projects; and

(2) a new section devoted exclusively to permits for steam generators subject to 40 CFR Part 60 (NSPS) when the permit involves a rolling 30-day average emission limit for SO_2.

There have been other changes to clarify the text and respond to the comments we received, but those changes are relatively minor compared to the two revisions discussed above.

In particular, if you feel that the section dealing with the rolling 30-day average NSPS for SO_2 should be treated as a separate policy, please indicate this in your comments. We do not want to hold up the entire policy in order to resolve this recent addition. We also intend to hold a discussion on this topic at the Mid Pines NSR Workshop; please be prepared to take this opportunity to discuss your concerns. We would like to receive all your comments on this latest draft by July 19. Unless substantial adverse comment is received, we will begin review of this package for formal EPA policy adoption.

It should be noted that Section VII of the policy, Protection of Short-term Ambient Standards, includes new requirements for an agency which has issued PSD permits that do not specify short-term SO_2 emissions limits to adequately protect ambient air increments and standards. In such cases,

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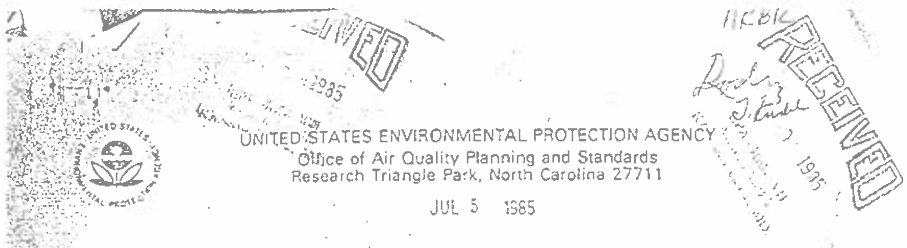
REVIEWER JRW



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It should be noted that Section VII of the policy, Protection of Short-term Ambient Standards, includes new requirements for an agency which has issued PSD permits that do not specify short-term SO_2 emissions limits to adequately protect ambient air increments and standards. In such cases,

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the proposed policy requires the agency to revise the permit by adding limits which will provide such protection. For all other cases, the policy presumes that the applicant is the party requesting a change.

If you have any questions, please contact Gary McCutchen, (FTS 629-5591). Thanks again for your assistance in developing this important policy, particularly the efforts of Roger Pfaff, Region IV.

Attachment

cc: B. Bankoff
T. Emison
B. Pedersen
E. Reich
P. Wyckoff

6/85
DRAFT

PSD Permit Modifications: Policy Statement on Changes to a Source, a Permit Application, or an Issued Permit and on Extensions to Construction Schedules

AGENCY: Environmental Protection Agency

ACTION: Proposed policy statement

SUMMARY: For several years both the Environmental Protection Agency (EPA) and various States have issued permits for the prevention of significant deterioration (PSD) of air quality to proposed new and modified major stationary sources. Some of the permits require revisions to reflect changes in construction or operating plans, including construction schedules. In other cases, changes in plans have been proposed by applicants prior to permit issuance, or after EPA has determined the source, as originally proposed, is exempt from PSD review. No formal policy has been issued which addresses how such changes are to be handled. Consequently, a source owner proposing changes to a source has no guidelines to determine what requirements must be meet.

Since no provisions are contained in the Act for modifying PSD permits already issued, all the requirements of Part C and a repeat of the permitting process appear to be necessary for changes in sources not reflected in the originally issued permit in order to prevent obvious circumvention. That is, a new permit must be obtained if a proposed change would involve: (1) a major modification; (2) a difference in construction or design from what was originally planned, when an increase in emissions or ambient impact would result; (3) a fundamental alteration of an emissions unit or source; or (4) a difference in applicability, such as a source no longer being exempt from PSD review. Today's policy proposes to provide a new and less cumbersome route by which changes can be accommodated while ensuring the equivalent environmental protection required under the Act. In doing so, it extends the Alabama Power concept of de minimis to include changes which

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are so small in terms of impacts that such changes could be excluded from the full rigors of permit review.

The policy statement provides guidance for (1) re-examining EPA-granted permit exemptions, (2) revising any EPA-issued PSD permit or PSD application, including those administered by States which have since obtained jurisdiction for PSD, and (3) the development of State and local agency permit revision regulations or policies. EPA encourages States to adopt similar policy statements concerning source changes and the processing of State-issued permits which need revision or extension and solicits comment as to whether such procedures should be required by 40 CFR Part 51.

Today's policy statement proposes to distinguish between sources which have begun operation and those which have not in determining the type of procedures used when a proposed change will require permit revisions. A permit revision for a source already operating generally can be treated like any other emissions increase or decrease at a major source using established procedures. For a source not yet operating, EPA proposes to group the range of possible changes to a PSD permit into three categories, based on their potential significance to the program: (1) those which can be expedited without detailed review (administrative changes); (2) those which can be processed as permit revisions after appropriate analysis (minor and significant changes); and (3) those which should be treated through issuance of a new PSD permit (fundamental changes). The required analysis for permit revisions typically would involve reconsideration of the basic decisions involved in the issuance of the original permit for the units that would be affected by the proposed change. Separate sections on the criteria for extending the 18-month commencement of construction deadline applicable to all PSD permits and on handling permit revisions resulting from the use of a 30-day rolling average SO_2 new source performance standard (NSPS) are also provided.

EPA7APC013299

DATES: This policy statement is effective as interim guidance upon publication. The period for initial comment on the proposal closes on [date 30 days from the date this notice appears in the FEDERAL REGISTER]. A public hearing on the proposal will be held on _____, 1985, at 10:00 a.m., in _____, _____, Denver, Colorado 80295.

ADDRESSES: Comments should be sent in triplicate if possible to: Central Docket Section (LE-131), U.S. Environmental Protection Agency, 401 M St, S.W., Washington, D.C. 10460. Attn: Docket No. A-83-40.

DOCKET: EPA has established docket number A-83-40 for this action. This docket is an organized and complete file of all significant information submitted to or otherwise considered by EPA. The docket is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section. A reasonable fee may be charged for copying.

FURTHER INQUIRIES: For further information, contact Gary McCutcher, New Source Review Section (MD-15), Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTAL INFORMATION:

I. BACKGROUND

A policy is needed to maintain the basic integrity of the PSD permitting process required by the Clean Air Act when requests are received to revise, add to, or delete conditions on issued permits or information contained in a complete application. A rigorous preconstruction review for PSD would ultimately not be effective if sources could readily obtain subsequent relaxations to their permit conditions under a lax policy for permit revisions. For example, the Act clearly intends state-of-the-art application of best available control technology (BACT) by PSD sources, but a lax policy for

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subsequent proposed changes could undercut the environmental protection offered by the original BACT determinations.

When EPA revised its PSD regulations in August 1980, the Agency deferred the development of guidance governing its PSD "permit modification" process, i.e., the procedures by which proposed changes to a source, application or permit would be handled. Since then, the Regions and States have handled requests for such changes on a case-by-case basis. These involve a broad variety of redeterminations of exemptions from permit requirements and permit changes, both minor and important, arising from sources which are already operating as well as those on which construction has not yet commenced. This has naturally led to a variety of decisions across the country and, hence, creates confusion and inefficiency in the permitting process for EPA, industry, and the States. A nationwide policy is necessary to assist all parties in dealing with PSD source changes and the need for PSD permit revisions in a consistent manner. In addition, such a policy will serve to establish a firm policy framework which resolves questions of legal risk when a judgment is made that new permits are not required.

Current policy requires that a new permit be obtained if a proposed change constitutes: (1) a major modification; (2) a difference in construction or design from what was originally planned, when an increase in emissions or ambient impact would result; (3) a fundamental alteration of an emissions unit or source; or (4) a difference in applicability, such as a source no longer being exempt from PSD review. Today's policy proposes to provide a new and less cumbersome route by which changes can be accommodated while ensuring equivalent environmental protection. In doing so, it extends the Alabama Power concept of de minimis to include changes which are so small in terms of impacts that such changes could be excluded from the full rigors of processing.

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Due to the similarity between major and minor "source modification" and "permit modification," it is important to establish a terminology which will not be confused with existing PSD terms and which can be used consistently and precisely to describe the situations and actions regarding this policy. Therefore, the term "permit modification" will not be used. Instead, the following terms are used to describe this policy.

A "change" refers to the proposed or actual alteration of an application, permit, or source, or some combination of the three. An application for a proposed change initiates Agency action if the application is complete. When the proposed change has actually been made, the altered source, permit, or application is referred to as "changed" or "revised." Changes are classified according to the effect they would have on the reviewing agency's assessment of the source. In order of increasing importance, changes are considered:

1. Administrative. An administrative change involves no increase in either emissions or impacts and no fundamental change in either the source or one of the emission units at that source. Application or permit revisions may be necessary, but additional review or analysis would not normally be required; examples are typographical and company name changes. One exception is the extension of commence construction dates, which may require a limited additional review consisting of BACT reanalysis and public participation.

2. Minor. Minor changes require revisions to permit applications or issued permits and a certain amount of additional review and analysis, but do not constitute either a fundamental or significant change. Emissions or impacts increase as a result of minor changes, but not above the significance level.

3. Significant. Significant changes are changes where one or more pollutant emission increases exceed the applicable significance level(s) but which do not constitute a fundamental change. Major modification

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review level is triggered unless the affected source is not yet operating; significant changes at preoperating sources are considered application or permit revisions.

4. Fundamental. A fundamental change is so basic in nature (size or type of source or emissions unit), regardless of the net emissions or impact differences, that the changed source or emissions unit is considered a new source or emissions unit and thus triggers a totally new permit review. A fundamental change could even result in an emissions decrease but still require the owner or operator to obtain a new permit. Examples include proposing a kiln in place of a dryer and proposing a 500 TPY unit in place of a 100 TPY unit.

The effect of a change depends in part on the status of a project. Project status milestones are:

1. Exempted from PSD review
2. Preconstruction PSD permit application submitted
3. Preconstruction PSD permit issued, but source is not operational (also, the applicability of new PSD rules is affected by whether construction of the source has commenced)
4. Preconstruction PSD permit issued and source in operation

The results of various combinations of changes and source status are summarized in Table 1. A procedure for determining which result is applicable to a specific source is diagramed in Figure 1. Note that both Table 1 and Figure 1 can only summarize this policy; more detailed information appears in the text.

II. AGENCY JURISDICTION

Today's policy covers all PSD applicability decisions and all PSD permits originally issued by EPA. This includes those PSD applicability decisions and permits which are still under Agency jurisdiction, as well

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as the applicability decisions and permits issued by EPA which subsequently come under State jurisdiction as a part of PSD program delegation or SIP approval.

The Agency intends that today's guidance also be used as a model for States developing their own permit revision processes for PSD, nonattainment area (Part D of the Clean Air Act) and other new source review purposes. EPA believes that regulations governing proposed changes to sources, permits or applications are needed as a legal alternative to having to issue a new permit for all except certain administrative changes. EPA solicits comment on the need for separate 40 CFR Part 51 regulations requiring State adoption of a similar policy to ensure the credibility of State PSD programs, as well as the need to extend this policy to include nonattainment area major sources and major modifications. As a minimum, EPA believes that state-of-the-art best achievable control technology (BACT) should be guaranteed by any State reevaluation of PSD applications and permits.

III. CLASSIFICATION AND REVIEW OF CHANGES

There are two primary factors to consider in determining the scope of review to be imposed upon a source in response to a proposed change. The first of these involves the significance of the proposed change; the more significant the change, the more involved the review will be. Four levels of change have been identified (administrative, minor, significant, and fundamental), leading to the same number of (but not always corresponding) levels of review stringency: amendment, revision, major modification and new permit. A second factor, stage of source development (whether the source has been issued a permit, whether the source is operating and, in certain cases, whether construction has commenced), is critical in determining what action is required and whether any of the original increment allocation (for particulate matter and sulfur dioxide) is preserved. For reasons

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explained below, various changes by a source that is not yet operating can reasonably be treated in a more stringent manner than would the same activity by a source already in operation.

(A) Stage of Source Development

EPA proposes to classify some PSD-related source changes differently depending on whether the change is for a source that has already begun the operation authorized in its PSD permit. This difference in treatment between sources not yet operating and those already doing so is based on several factors: (1) a project in its earlier phases is much more flexible than one already operating; (2) the company's commitment to the project prior to operation is less clear and its position regarding further changes at a plant which is not yet in operation differs from that of most existing sources; and (3) the test of whether a source can operate and produce a product under the original construction plans eliminates a great many possibilities of obvious circumvention of the regulations. Treating an operating source as essentially having completed the permitting process eliminates the burden of uncertainty on the company of constantly having to evaluate proposed projects in light of changes made years ago. Today's policy acknowledges these factors by typically imposing a less rigorous process for proposed changes at operating PSD sources. EPA solicits comment on the reasonableness of this approach and on whether other events such as commencement or completion of construction should have some greater standing in a final policy. It should be noted that commencement of construction already confers an exempt ("grandfather") status to a source not only in CFR Parts 51, 52, and 60, but also in this proposed policy when determining whether newly-issued rules are applicable (see below).

1. Pre-operational Sources. An application for a change to an application or permit for a source not yet in operation would generally

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prompt reanalysis of the proposed project as if the original application had been submitted in that form. However, some changes would be considered sufficiently unimportant that they could be treated as application or permit amendments; these are termed administrative changes. Other changes would be important enough to prompt the need for a revised or new application or permit, and could require additional review actions. These various levels of change are discussed in detail in the next section.

For application and permit changes requested prior to operation, EPA is proposing that the changes be handled as part of the initially permitted project, rather than as new projects. The Agency is concerned that changes that are individually small would be accumulated such that a cumulative significant change would not be given the full review that such a change should receive. Thus, even a de minimis increase in a pollutant can be subject to PSD review if that pollutant would be significant when added to previous increases. (This is further explained below under (B)2. Revisions.) In order for EPA to treat such a change as a new project, and not as part of the already permitted project, the applicant would be required to make a demonstration that the two projects are physically independent and were considered to be separate projects for planning purposes. If the reviewing agency concurs that the new project is a separate project, the change can then be treated as such. These criteria are identical to those used for judging separation of projects already constructed (see below). The only difference is that EPA initially presumes that a change at the site of a nonoperating source is not a new project.

2. PSD Sources Already in Operation. Applications for changes which would affect sources which have already been issued PSD permits and been placed in operation have generally been treated the same as applications to change any existing major stationary source. That is, if the change is

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significant. It constitutes a major modification, as defined at 40 CFR Part 52.21, and a complete PSD review is required; if the change is not significant, it does not constitute a major modification and no PSD review applies. Under today's policy, changes will instead be processed in the manner described in the next section.

The only exception to the approach described below arises from the need to avoid circumvention of the regulations: if the proposed change should reasonably have been part of the initial project rather than a separate project, it should be evaluated as part of a new total source impact rather than as a separate action. At times, such proposed changes take the form of "separate" sources or even projects involving more than one source. However, if the reviewing agency judges that such sources or projects are part of the same project covered in a previous PSD application, the changes should be treated identically to changes for sources which have not yet begun operation. This must be determined by the reviewing agency on a case-by-case basis, taking into account whether the proposal represents changes at the source which are physically independent of the original project, and whether the applicant can provide documentation to show that planning of the second project occurred after the planning for the first project. Thus, if a PSD-permitted boiler has been constructed, and the owner then applies for a de minimis increase in SO_2 emissions from the boiler, which in the judgment of the review agency should have been a part of the original permit application, the requested change cannot be treated as a new application (and therefore be exempt from review because it is de minimis). It will instead be subject to each PSD review element within the permit revision process as described below. Conversely, if the applicant applies for a new processing unit to be used in a completely separate

production area of a chemical plant, this application can be treated as a new project and exempted from review, if de minimis.

(B) Levels of Review

1. Amendment. Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emissions or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decisions originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or tracing, must be carefully documented) and minor wording clarifications. It should be noted that a fundamental change (see below) may also result in no increase in emissions or impact, but cannot be treated as an amendment.

The lack of emissions and impact increases for an amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to applications and permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company were operated.

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One administrative change which always receives some level of review is the extension of commence construction dates. Such changes constitute amendments but must be reviewed to ensure state-of-the-art BACT; in addition, it is usually appropriate to seek public comment on the proposed extension, since other potential new sources may be affected. A more detailed discussion of this type of change appears in Section VI below.

2. Revision. The term revision encompasses the review level required for the large majority of minor and significant changes at all preoperational sources and at existing (operating) major stationary sources which do not qualify as "major modifications," as defined by the PSD regulations, or as fundamental changes. Revisions include, in the case of operating sources, most changes involving construction or changes in the method of operation of a source, including control equipment, that do not produce a net significant emissions increase. A net significant emissions increase resulting from a physical change or change in the method of operation at an operating source usually constitutes a major modification as defined in the rules and is processed as such. It should be noted that there is a distinction between (a) modifications (as defined in the PSD rules) which are not subject to NSR, and (b) changes (whether requested or necessary) to a permit or permit application. A change which does not result in a significant net increase in emissions is not considered a "major modification" and is not subject to PSD. However, the change may require (or the owner may request) a revision of the source permit (or application). In such cases, the reviewing agency may consider some level of reanalysis and review necessary before revising the permit or accepting an application revision. For example, a source may want to change a solvent used in one of its processes, with no increase in emissions, but the permit specifies the solvent to be used. Before revising the permit to allow use of the new solvent, the reviewing agency may decide

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to repeat public comment if the new solvent is more odorous or toxic than the current solvent, repeat the impact analysis if the new solvent is more reactive or toxic than the current solvent, or revise some other component of the existing analysis.

Despite the possibility of a revised analysis, nonsignificant emission increases do not constitute the type and degree of review to which major modifications are subject. In many cases, it is anticipated that little or no revised analyses will be required of nonsignificant emissions increases. On the other hand, changes to permit (or application) parameters which the review agency considered important enough to include on the permit (or rely upon in the application) should certainly be subject to review before those parameters are revised.

The term revision also encompasses the level of review of most candidate application and permit changes which are proposed at sources which are nonoperational with respect to construction approved in their PSD permit. The only exceptions are those changes which are administrative, or which are so great that they require a totally new PSD review (fundamental changes).

Once a change is classified as requiring the revision level of review, it is screened to determine which elements of PSD review now apply and to what extent. A revision will first require a screening analysis to determine whether existing analyses addressing the PSD requirements are still accurate or whether there is a need for revised analyses. Major components of the new source review include BACT, ambient impact analysis, monitoring requirements, additional impacts analysis, Class I area protection, and public participation. A full description and explanation of these review components is contained in the August 7, 1980 FEDERAL REGISTER (45 FR 52676). Depending upon what change is proposed, this screening may be very simple, as in the case of a very small increase in the size of an emissions unit, or very involved, as

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in the case of the addition or replacement of a new unit at a preoperational source.

The proposed change must be examined not only to see if any existing analyses should be revised, but also to see if any new analyses should be performed. The criteria for requiring additional review elements will be whether the original new source or major modification application underwent all of the review which would have applied had the application been submitted in its revised form originally. In addition, any new requirements added to the PSD regulations since the time that the original permit was issued also could apply, unless construction had commenced so as to qualify for an exemption as discussed below. If there is no circumvention of the permit requirements, the revision review would focus on only that portion of the source immediately involved in the proposed change, rather than all of [illegible] potentially reviewed.

An example of a processor change prior to permit issuance to add a unit emitting 15 tons per year of SO_2 to an application for a source which originally provided for 100 tons per year of particulate matter and 35 tons per year of SO_2. This would constitute a minor change. Since the change is combined with the original application, both the new unit and the already permitted units must undergo each PSD review element for SO_2. This is because the original permitted level of SO_2 was de minimis, thereby exempting SO_2 from review, but the total new level of SO_2 is significant (35 TPY and 15 TPY together exceed the 40 TPY threshold). However, the original application date is used in allocating increment for the original 35 TPY SO_2 emissions level unless circumvention of the SO_2 review had been intended.

As another example, suppose a permit for a new PSD source allows 50 tons per year of SO_2 emissions and the source was not required to gather preconstruction monitoring data because it created a de minimis ambient

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impact. The source owner wishes to lower the stack which emits SO_2, making total SO_2 impact significant. The source owner would therefore be required to conduct a new modeling analysis and gather representative preconstruction monitoring data before the change could be approved.

In processing a revision, whether for a minor change or a significant change, the reviewing authority must follow the same public participation procedures noted in 40 CFR 52.21(q) for the processing of preconstruction PSD permits. EPA believes that the reconsideration of the conditions and review of an existing permit undergoing revision should receive no less an opportunity for public involvement than did the original permit application. This includes public notification by newspaper advertisement in the area of the source. The notice would contain information regarding the agency's preliminary determination, the expected ambient impact of the proposed change, the 30-day opportunity for written comment, and an opportunity for a public hearing.

A proposed change qualifying as a revision, rather than as a new permit, receives certain benefits. As mentioned previously, a revision can be exempted from any new PSD requirements that were added between the time of the original permit issuance and the submission of the proposed change if the source had commenced construction prior to the adoption of the new PSD requirement. "Commence construction" is defined in terms of the owner or operator having all the necessary preconstruction approvals or permits and either having (1) begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time, or (2) entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable

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time. The purpose of subjecting revisions to new requirements for sources not having commenced construction is to remove the potential benefit a source might obtain by submitting a questionable application to reserve increment or avoid new PSD provisions.

Another major advantage a source gains by qualifying for a revision, rather than having to obtain a new permit, is that the source retains the increment rights afforded by the original application or permit. Neither new permits nor fundamental changes to an original proposal (which by definition change the very character or nature of a source) preserve the original increment allocation, because that allocation was for a specific type and size of source at a specific location. An allocation is not automatically configured to, for example, a cement plant which is proposed in lieu of a permitted power plant.

If a revision being considered by EPA would cause additional increment to be consumed beyond that originally allocated, today's policy would allow the additional increment consumption only when increment is available after prior complete applications have been processed and only at the concurrence of the State in which the source would locate or is located. If new increment consumption beyond the significance amounts identified in the 1978 preamble (excluding Class I areas where any new impacts must be authorized by the Federal Land Manager) would result at any point, such increment consumption must also be authorized by the State in which the source would locate or is located.

An especially significant issue arises from situations in which there is competition for the available air resource: other permit applications and changes are pending such that the ambient ceiling imposed by the NAAQS or increment would prevent the granting of all of the applications. In such circumstances, EPA would take a first come/first served approach

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to allocating the growth rights, subject to State approval. This means that the original emissions growth rights would be preserved but that the remaining growth rights would be awarded to intervening applicants filing applications prior to the filing of the proposed change. When EPA is implementing this policy, it will recognize the rights of complete PSD applications filed with States which have the responsibility under their own PSD program for future permit applicants. Any State taking jurisdiction of EPA-issued permits may develop alternatives to first come/first served allocation of air resources to which EPA would generally defer; of course, no such alternative system can allow an increment violation to result.

3. Major Modification. Operating units which propose changes that constitute a "major modification," within the meaning of the NSR regulations are subject to those requirements. Generally, this review is equivalent to the requirements for a new source (see below), but the review is conducted only for the modification, not for the entire existing source. The term "major modification" is defined as "any physical change in or change in the method of operation ... that would result in a net significant emissions increase...." Physical changes are, in general, readily identifiable, but changes in the method of operation are often more subtle. The latter includes such activities as removal or significant alteration of pollution control equipment. For a source not yet operating, however, proposals which would normally be considered major modifications would generally under this policy be treated as an application or permit revision (see above).

4. New Permit. Some changes are sufficiently important such that a separate new application or permit is required, rather than a revision to the existing application or permit. These are of two types. First, a change to an application or a permitted source which affects the fundamental nature of the source triggers the need for a new permit. A general guide

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to whether the fundamental nature of a source is being changed is whether the proposed changes would result in either a different 2-digit SIC Code for the source or a large increase in size. However, the reviewing authority must use good judgment and make this decision on a case-by-case basis.

A new application or permit is required for fundamental changes because the proposed change would be of such major importance to source operation that the basic permitting process should be repeated, with no increment rights reserved. For example, a change from a dryer to a kiln may affect a review such that different emissions control or product recovery operations would be found to be feasible for the kiln where they were not for the dryer under the original analysis.

Since it is often inappropriate to apply SIC codes to portions of sources, this procedure cannot easily be used when the proposed action would affect only a part of an existing source. The reviewing authority should therefore decide on a case-by-case basis whether the fundamental nature of the permitted portion of the source is being changed. SIC codes could be used as a guide to do this. For example, if a new boiler is planned or permitted at a kraft pulp mill, and the applicant wishes to construct a lime kiln instead of a boiler, it is clear that the fundamental nature of the unit (the boiler) is being changed, even though the source (the kraft pulp mill) is not; the lime kiln would require a new permit.

Fundamental changes in the size of a permitted emissions unit or source are those changes which increase the fixed capital cost of the emissions unit or source by greater than 50 percent. This could often require more than a 50 percent increase in source or emissions unit size, since cost per production unit usually decreases as the size of the unit increases.

A decision to review a change as a new permit application would generally entail the same data development as would the original permit

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application, although the review would focus on the proposed changes. In many instances, data from the original permit application could be used to expedite the new permit review process. Additional data would often be required for the new or changed units and all units affected by them. If the new or changed units affect the original BACT, air quality, and modeling analyses, these analyses would need to be revised accordingly.

As noted above, one area where the processing of certain significant and all fundamental changes may differ greatly from that of many significant and all minor changes concerns the awarding of new increment rights: sources or emissions units involved in application and permit revisions (which assumes no fundamental change) retain their original increment rights during the revision process. In contrast, a change that is processed as a new permit must compete for available air resources behind any complete applications filed before the complete application for the change is filed. It is important to note that, while the permit as previously issued entitles the original project design to be built, the permit does not award equivalent increment rights to the source for any substantial shift in configuration, type, or size of units that it might wish to construct.

If there has been much growth in an area or if the area is heavily industrialized, air quality may have deteriorated so as to be near the ceiling imposed by the increments or NAAQS. In such a case, a new source permit may not be issuable. Consequently, either the one-year deadline for processing a complete application will be controlling (EPA must disapprove a permit if insufficient increment is available within a one-year timetable) or, if the original permit has already been issued, the 18-month deadline for commencing construction (assuming no extension) will force the source attempting to change its PSD permit to finish its original construction plans or to withdraw its proposed change and not construct at all.

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Figure 1 outlines the process that a reviewing agency can follow in classifying an application for a change. EPA also offers Table 1 in order to convey summarized guidance on which of the above described levels of review should be applied to various types of permit changes. Table 1 lists a wide range of ways in which a source might be changed and indicates the Agency's proposed conclusions on which forms of review would apply. It should be noted that both Figure 1 and Table 1 are presented for purposes of illustration; other types of changes may occur and, in addition, special circumstances may arise which prompt the review authority to address a change differently. The Agency solicits comments regarding other types of events which should be included on the list or on the way that the listed items are classified.

IV. CIRCUMVENTION

A determination by a review agency that a proposed change constitutes circumvention results automatically in a requirement that a new permit application be filed. The applicant would be unable to preserve any of the increment allocated to the original permit. Although circumvention has been discussed in more detail elsewhere, the concept of circumvention within the framework of changes to a source presents additional complexities.

An example of circumvention would be the proposed addition of a 15-tons-per-year SO_2 emissions unit to a permit for a source originally proposed to emit 100 TPY particulate matter and 35 TPY SO_2. The reviewing agency then discovers that a 30 TPY SO_2 unit had been planned for that source from the beginning, but that the applicant had attempted to avoid SO_2 PSD review (including BACT) by applying in two stages. In such a case, the original permit is valid only for the source exactly as specified. If the applicant wants to change the source, a new permit application must be filed. None of the original increment allocation is preserved; the "complete application"

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date for the source would be the date the proposed change application was considered complete. This policy is intended to discourage the submission of deliberately incomplete or misleading applications through loss of any increment allocation that resulted from such actions. However, EPA would still intend, even in cases of circumvention, that any portion of the original application and review which are still applicable be retained, and that subsequent actions concentrate on the changes to the source that result in a need for additional review.

V. INCREMENT ALLOCATION AND PRESERVATION

Currently, EPA allocates increment on a first-come, first-served basis, using the date a complete application was submitted to determine an applicant's place in line. The allocated increment is assigned to the specific source (or emissions unit) and location described in the permit and application; it cannot be used by the applicant for another source, even if the second source is planned at the same location, nor can it be used for the same type of source at a different location.

For example, assume a permit has been issued for a cement plant at location A, with an anticipated Class II (plant boundary) 24-hour total suspended particulate (TSP) impact of 40 micrograms per cubic meter (ug/m^3) and a nearby Class I 24-hour TSP impact of 2 ug/m^3. The increments reserved for the cement plant are the 2 and 40 ug/m^3 Class I and II impacts. If the owner decides instead to construct an asphalt plant at location A, the increments assigned to the cement plant are not "preserved" for use by the asphalt plant. The owner must submit a new application for the asphalt plant, receive a new date of submittal of a complete application, and try again for an increment allocation. (In fact, without today's policy even minor changes to the cement plant could result in loss of the allotted

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increment, since the increment use is assigned to the source and location exactly as specified in the permit and application.)

Similarly, if the cement plant owner decides that location B would be a better place to construct than location A, the increment allocated to the cement plant at location A is not preserved for use at location B. The owner must submit a new application for location B and this new date of submittal of a complete application is used to establish the first-come, first-served increment allocation.

In addition, current policy does not provide any increment allocation for proposed sources which at first are exempt from PSD review but become subject to PSD review at a later date due to a proposed change. For example, assume a listed Source A (major at 100 TPY) is estimated to emit 85 TPY of SO_2. The owner submits an application to the reviewing agency, is told that the source is exempt from PSD review, and proceeds to obtain all the necessary State and local agency permits and commence construction. At this point, the owner discovers that SO_2 emissions from this source will be 115 TPY SO_2 rather than 85 TPY. Assuming that there is no indication of attempted circumvention, the source under current policy must still reapply and, even though already under construction, the new application date is used to allocate increment. If another application for a large SO_2 source had been submitted between the first and second Source A applications, Source A may be denied a permit despite the construction costs already committed to the project. Today's policy, in contrast, provides in certain cases for the "preservation" of increment that had previously been allocated to a source if (1) the proposed change is not fundamental, and (2) there was no intent to circumvent new source review provisions.

Preservation of increment refers to the retention by a review agency of the original complete application filing date in determining allocation

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of increment on a first-come, first-served basis. In other words, this policy specifies that for administrative, minor, and significant changes, the original complete application submittal date is used to allocate increment. However, the preserved increment is based on no more than the original emission rates and ambient impacts. If the revised emission rates or ambient impacts increase, only the "original" portions of the total new rates and impacts are preserved; the increases are allocated on the basis of the date a complete application for the proposed change was submitted. If the revision results in emission rates or impacts less than the original levels, the remaining portions of the original rates or impacts are no longer preserved; this is because this policy is not intended to provide trading or netting credits to a proposed source. The only intent is to preserve a qualifying source's place in line for increment allocation.

As an example, assume Source B submitted an original complete application for 275 TPY SO_2 on January 20, 1986. On August 15, 1986, before a permit has been issued, Source B files a complete application for a change which would increase SO_2 emissions by 55 TPY, to a total 330 TPY SO_2. On a first-come, first-served basis, increment from Source B is allocated using the following dates:

January 20, 1986 - 275 TPY SO_2

August 15, 1986 - 55 TPY SO_2

Note that the source's place in line for the original increment is based on the original application date, but that subsequent increases in emissions are allocated based on the date the application for the increase was filed. Source B, under today's policy, would not be competing for all 330 TPY SO_2 emissions on the basis of an August 15, 1986, increment allocation date as would have been the case under current policy. Instead, Source B competes

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for only the 55 TPY SO_2 additional increment on the basis of the later August 15, 1986, application filing date.

Sources which had previously been exempted from PSD review present a particularly difficult situation. These nonmajor sources consume increment but, unlike major sources, are not allocated increment. Today's policy, however, allows increment allocation preservation for sources which, as a result of a proposed administrative, minor, or significant (but not a fundamental) change, would become major as long as no circumvention was intended. Such sources would have increment allocated for the original emissions rates on the basis of the original (exemption) complete application date and the additional emissions rates on the basis of the proposed change complete application date. Thus, the original source, even though exempted from PSD review, is given some degree of increment preservation. This policy is intended to apply to sources which have not yet completed construction. The PSD rules provide that exempted ("minor") sources not subject to PSD do not become subject to PSD until their emissions exceed the threshold limits and they then propose a major modification (with one exception: a modification to a minor source which would in itself qualify as a major source will result in PSD review), but this does not address proposed changes to a source prior to completion of that source.

Since increment preservation using first come, first served, relies to a great extent on the date of submission of the original application, this is a particularly important date to document. Owners and operators who feel that a source is exempt from PSD review are nevertheless encouraged to promptly submit complete applications for the State permit or for the record, even if they have already been informed verbally that a source is exempt, because the submission date establishes increment allocation priorities. Without a clearly documented original complete application date, this policy

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would be difficult to apply. In cases where the date a complete original application was filed cannot be determined, EPA will use the date construction is commenced.

VI. EXTENSION OF 18-MONTH COMMENCEMENT OF CONSTRUCTION DEADLINE

One permit revision topic that deserves special attention is extension of the 18-month commencement of construction deadline. The subject regulation, 40 CFR 52.21(r)(2), states that "Approval to construct becomes invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Administrator may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date."

It is important to note that the Clean Air Act and 40 CFR Part 51 regulations do not expressly include the 18-month deadline. Therefore, those States that have taken over the PSD program through SIP development are not required to have the particular 18-month deadline in question. However, those States to whom the PSD program has been delegated are required to implement the 18-month deadline, since a delegate State is implementing the Federal regulations.

Often it is difficult to determine in the preconstruction phase how all aspects of the construction plan will develop. Many of the permits issued in the earlier part of the PSD program are maturing as projects. Consequently, the EPA has received several industry requests for various adjustments to their permits and construction schedules. These requests are usually based upon changes in the economy, weather, or consumer consumption

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in areas such as energy. EPA is responding to this need by interpreting the regulation and proposing the policy articulated here for reviewing extension requests. Effective implementation of these provisions is especially important in view of the prospects for economic growth.

The showing which a source must make in order to receive a permit extension has been a longstanding problem. Various approaches have been advocated, ranging from a stringent standard, such as impossibility in the legal sense, to such lesser showings as economic impracticality. Each of those approaches presented varying degrees of subjectivity and certain difficulties of factual analysis. Today's policy avoids those difficulties by providing extensions to virtually all good faith applications for extensions to which the affected States do not object. A good faith effort must include a certification that the company currently plans to commence construction by a specific date that usually should fall within the requested extension period, but may extend further into the future if it is still within what the review agency considers a reasonable period of time. The intent of this is to discourage situations where a source may not plan to actually commence construction for a number of years but continues to tie up increment and consequently prevent growth which could occur immediately.

Previous decisions often allowed a source making the threshold showing of justification of an extension to proceed without further analysis. There are persuasive reasons for reopening certain portions of the permit review, such as BACT, when a permit is extended. As described below, today's policy expressly provides for this further analysis. Providing extensions more readily but requiring more substantive review of those extensions presents a reasonable compromise that simplifies the policy while assuring important environmental protection.

The Clean Air Act requires review of new sources to be timely. This is especially important for key elements of review such as BACT determinations and ambient impact assessments. Consequently, there must be limitations on the period granted in which a source can construct without an updated review. In particular, BACT is an independent requirement under the Act and the Act contemplates that the BACT be current for the period in which the source's construction is actually commenced. Similarly, ambient air quality can change considerably, rendering inadequate an assessment performed at an earlier time. This policy generally outlines a method which addresses concerns about the consistency of extension requirements across the country, while complying with the Act's requirement that certain PSD determinations be timely. It is emphasized that timely requests for extensions or other modifications are the responsibility of the source. A permit will automatically cease to exist if a request for extension is not received before its expiration date. In the case of a later request, a new permit application must be filed.

Today's policy proposes that candidate permit extensions must meet the following tests for substance and processing in order to be issued:

A. BACT Review. EPA believes that in many cases the original BACT determination would still qualify as BACT if it were reviewed. This is especially the case since consideration during a BACT reevaluation is given to the costs that would be incurred in changing plans and equipment purchases if a different technology were employed. These costs and time delays may be prohibitive if construction had already commenced and the source was not designed to accommodate new state-of-the-art control technology, but EPA notes that there will also be cases in which alteration of construction plans is feasible. This could well be true of long-term, multi-unit projects for which major improvements in BACT have occurred and the expanded construction

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time frame has proven conducive to such project alterations. However, EPA will require a BACT reevaluation on all extension requests to the extent of reviewing EPA's BACT/LAER Clearinghouse. The original BACT determination can be assumed to remain appropriate, even if construction has not commenced, if no significant state-of-the-art advancement in BACT is noted from EPA's BACT/LAER Clearinghouse data or from the subsequent public comment period, but not more than five years has elapsed from the time of the original BACT determination.

B. Additional PSD Review Requirements. Other aspects of PSD review such as increment rights and air quality impacts will be assumed to remain valid unless adverse comments are received from affected State(s), Federal Land Managers, or other interested parties during the public comment period, since subsequent growth in the area should have considered the impacts of the permitted source. Adverse comments, if not reasonably addressed by the applicant, will typically trigger the need for a conference among EPA, the applicant, the affected State(s), and other interested parties such as Federal Land Managers. The conference may be combined with the public participation requirements for extensions. The State is responsible for ensuring that interim source growth in the area of the permitted source has not caused sufficient degradation of air quality to the extent that operation of the source requesting the extension would cause or contribute to increment or NAAQS exceedances; neither extensions or issued permits nor issuance of additional permits is allowed when they would cause or contribute to such exceedances. If the State inadvertently fails in this regard, it is responsible for remedying any subsequent violations by obtaining sufficient emissions reductions in the area. The State is also responsible for indicating whether an extension consumes all remaining increment, thereby prohibiting issuance of permits to other possible sources in the area. A source will

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not be subject to any other aspects of PSD review beyond those mentioned above.

C. Duration of Extension. EPA's regulations do not state the maximum length of extension which can be granted. In practice, EPA's Regional Offices have used 18 months as the norm and, in certain instances, have allowed longer extensions. Due to concerns of growth rights and public participation, EPA will presumptively limit extensions to durations of 18 months, or less, with renewal possible. This allows industry the possibility of multiple extensions if necessary but ensures that the impacted State(s) and public have control of their air resource and growth rights and that state-of-the-art BACT will be employed.

D. Public Comment. The Clean Air Act particularly emphasizes the importance of public comment on matters affecting air resource consumption. Therefore, EPA will require the same public participation procedures for extension requests as noted above for permit modifications, including a minimum 30-day public comment period.

E. Extension of Later Units of Phased Multi-Unit Projects. Phased multi-unit projects are considered either dependent or independent by EPA. In a footnote in the preamble to the 1978 final PSD regulations (43 FR 26388), EPA defined the difference between these types of phased projects:

> "The dependence of facilities within a source will be determined on an individual basis. Two or more facilities will generally be considered dependent if the construction of one would necessitate the construction of the other facility(ies) at the same site in order to complete a given project or provide a given type (not level of) service. A kraft pulp mill is an example of a source with dependent facilities, whereas a three-boiler power plant is a typical example of a source with major independent facilities."

The purpose of this approach was to differentiate between those phased projects which would be "grandfathered" (i.e., not subjected to new PSD rules) and those which would not. Dependent phased projects were considered fully

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committed as soon as construction began, so all of the dependent facilities were accorded the same status; if construction on the first phase of a dependent phased project commenced by an applicable grandfather date, then all of the dependent facilities were considered grandfathered even if construction of those phases of the project had not yet commenced. Conversely, each phase of an independent phased construction project had to individually commence construction by the grandfather date to be grandfathered. This approach to phased projects was upheld in Alabama Power Co. v. Costle.

The 1978 preamble also states that EPA does not generally intend to limit the time for construction of phased projects, but does intend to require commencement of construction of the first phase within 18 months of permit approval and of subsequent phases within 18 months of the date approved in the permit. Breaks in construction, as with single-phase projects, cannot exceed 18 months. These requirements appear in 40 CFR Part 52.21(r)(2). Where extensions of the time period between construction of different phases of phased construction projects are not allowed.

The Utilities Air Regulatory Group (UARG) has petitioned EPA to delete the portion of the regulation limiting extensions of permitted construction intervals between phases of phased construction projects. Since the regulation could be interpreted as allowing for extension of the construction commencement deadline only for the first phase of independent, multi-unit projects, and since most utility construction projects are phased independent multi-unit projects, UARG is concerned that the regulations prohibit extensions for later phases of these utility independent multi-phase projects.

In response, EPA provides the following clarifications. First, it is EPA policy that both dependent and independent phased projects may obtain a single comprehensive PSD permit for all phases of the project. A single permit offers an applicant the advantages of reduced paperwork and assurance

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that the entire project (rather than only a portion of it) is permitted. Since comprehensive permits apply to projects which are often large and complex, such permits should specify at least two items that are not needed in permits for single-phase projects. These items are:

(i) Which BACT determinations will be reassessed prior to commencement of construction, and

(ii) The date by which later phases (but not necessarily the initial phase) of the project must commence construction.

BACT review (and redeterminations of BACT as appropriate) is required by 40 CFR 52.21(j)(4) at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of a project, so inclusion in a permit of the BACT determinations which will be reassessed is not a requirement for being able to conduct such a reassessment. However, the inclusion of this information in the permit provides the owner/operator, the inspector, and the public advance notice of the intent of the review agency to conduct such a reassessment.

The commence construction dates in the permit cannot be extended using the mechanism embodied in 40 CFR 52.21(r)(2), but this does not mean that such dates are unchangeable. In fact, those dates can be changed, but not by the granting of extensions. Since these dates are a part of the permit, changes to the dates require a permit change, which will usually be considered an administrative change (albeit one which normally should include BACT review and public participation). The "projected and approved commencement date" referred to in 40 CFR 52.21(r)(2) is the date which appears in the permit, a date which can be changed by revising the permit. The procedure for changing commence construction dates which are embodied in a permit is the same procedure used for any other permit change, as outlined in today's policy. The initial phase commence construction date is extendable using

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the 40 CFR Part 52.21(4)(2) procedure unless that date is also embodied in the permit. When embodied in a permit, even the initial phase commence construction date can be changed only through a permit change.

The above policy concerning the initial phase commence construction date may appear to conflict with 40 CFR 52.21(r)(2); it does not. The intent of 40 CFR 52.21(r)(2) is to establish an automatic 18-month expiration date for permits, with provisions for extending the expiration date on a case-by-case basis. For phased projects with a single comprehensive permit, EPA presumed that commencement dates for each phase of the project, except the initial phase commencement date, would be incorporated into the permit. Therefore, initial phase commencement date changes would be handled with a 40 CFR 52.21(r)(2) extension, and subsequent phase commencement dates would be handled through permit changes. This acknowledges and preserves the validity and legality of the conditions specified in a permit.

If for some reason, such as a long planning lead time on a complex project, the initial phase commencement date is longer than 18 months but still within a reasonable period of time (e.g., 2 years and 6 months), the review agency may specify the initial phase commencement date in the permit, keeping in mind that the source is granted 18 months beyond this date to actually commence construction. Alternatively, the review agency may specify the permit expiration date in the permit. The expiration date simply includes the initial 18-month grace period; it is determined by adding 18 months to the commence construction date and avoids the confusion that could result when dealing with the commence construction date alone. The specified date in the permit takes precedent over the "automatic" 18-month expiration based on the permit issuance date, but in doing so renders the permit ineligible for the 18-month extension process described in 40 CFR 52.21(r)(2); a permit change is required to change a commencement (or expiration) date that appears

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in a permit. There is an exception to this: if the date specified in the permit for the initial phase of a project is simply the expiration date of the permit (the commence construction date plus the 18-month grace period), then that date is assumed to be in the permit for information purposes, does not make the source ineligible for 40 CFR 52.21(4)(21) extensions, and does not need to be changed to grant extensions of the expiration date.

For some projects, the commence construction dates for each phase may have been included in the application or other materials, but may not appear in the permit. In such cases, the commencement dates for each phase are those dates which the review agency used in evaluating the impact the source would have. Nearly always these will be the dates submitted by the applicant in the application, and these commencement dates are changed by following today's policy on changing applications and permits. As a part of any such change, review agencies should not only revise the dates in the application, but also include the extended commencement or expiration dates in a revised permit.

Independent phased multi-unit projects have the option of having separate permits for each phase; dependent phased projects do not have this option, because all phases of a dependent project must be completed for that project to operate as intended. Separate permits for each phase of an independent phased project are treated for processing purposes as if each permit was for a separate facility, with independent commencement dates, BACT determinations, enforcement actions, etc. Separate permits may increase paperwork, but in return provide an applicant with the option of proceeding with planning on a project one phase at a time.

The concept of "separate" permits versus a single comprehensive permit is more a matter of the manner in which the phases are treated than the physical manner in which the permit is issued. A single comprehensive

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permit, for example, could consist of a number of permits for various emission units and phases of the project, with possibly a general permit to address conditions common to all the project facilities. Conversely, "separate" permits for an independent phased project may physically consist of a "single" permit which nevertheless treats each phase separately. Of course, EPA would presume that single and multiple permits were what they appeared to be unless there actually existed some clear basis for treating a single permit as a set of separate permits, and vice versa.

The reason for distinguishing between dependent and independent phased projects lies in the applicability determinations when new or revised PSD rules become effective after construction commences on the initial phase, but before construction commences on the last phase. All phases of dependent phased projects are grandfathered (not subject to the new or revised PSD rules if construction on the project (usually the first phase) had commenced prior to the effective date of the rule change and no invalidity lapses in construction had occurred). In contrast, each phase of an independent phased construction project must individually commence construction by the prescribed grandfather date(s); any phases which had commenced construction would not be subject to the new rules.

Since the concern expressed by UARG appears to be addressed toward multi-unit power plants which may have been permitted as dependent, rather than independent, multiphased projects, today's policy offers independent phased project applicants an opportunity to convert (or otherwise obtain acknowledgement from the review agency of such change in project classification) a dependent multiphased project permit for that project into independent multiphased project permits with full preservation of the increment allocated by the original permit, as long as no increment or NAAQS exceedances would result. This conversion (but not any simultaneous or subsequent requests

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for other actions, such as extensions) would be carried out without additional PSD review requirements, such as review of BACT, although such conversion does not abrogate any other authority either EPA or other review agencies have to reasssess permit analyses. In particular, this conversion would not allow circumvention of the BACT review prior to construction of each independent phase which is required in 40 CFR 52.21(j)(4).

UARG also expressed concern regarding the time taken by review agencies to decide whether to grant construction date extensions, citing a case where an applicant felt forced to initiate construction simply to protect the validity of the permit because no response to the request for an extension had been received. Although the new policy described above of providing extensions to virtually all good faith applications should resolve this problem, EPA shares the concern of UARG that such "forced construction" be prevented. Therefore, today's policy will also incorporate the following approach in handling such requests:

(1) A source has an obligation to provide sufficient time for an agency to review requests for extension of a commencement of construction date. Therefore, such requests (including adequate documentation) should be submitted to the review agency at least six months prior to the date on which the permit would become invalid (the scheduled commencement of construction date plus 18 months).

(2) EPA will make every effort to respond to such requests within three months of the date the request for an extension is submitted.

(3) If a request was submitted in accordance with paragraph (1) above, and EPA has not responded within the three-month time period indicated in paragraph (2) above, then the permit invalidation date will be considered extended automatically in such a manner that an applicant will always have at least three months between the date on which EPA does respond and the

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new permit invalidation date. The three months provides the applicant time to either commence construction or take other action. This policy does not apply if the applicant does not meet the obligation expressed in paragraph (1); in such cases, there is no automatic extension of the invalidation date.

For example, assume a permit was issued for a large project with an anticipated commencement of construction date of 2/1/86. The date the permit would become invalid (unless construction had commenced) is 18 months after this date: 8/1/87. On 1/30/86, the source applies for an 18-month extension, meeting the six-months-in-advance source obligation. If EPA agrees to the extension, then the extension is for 18 months from either the invalidation date (8/1/87) or the date EPA responded, whichever is later. If EPA disapproved any extension, the invalidation date is either 8/1/87 or three months from the date of EPA's response, whichever is later.

VII. PROTECTION OF SHORT-TERM AMBIENT STANDARDS

It has been the practice of many review agencies to presume that any emissions limit comprises a "not-to-be-exceeded" continuous emissions limit, whether that limit is included in the permit (e.g., "SO_2 emissions shall not exceed 670 pounds per hour"), referenced in the permit specifically (e.g., "this source is subject to Regulation 6, Section IV.A.2.b.(ii), for fossil fuel-fired steam generators"), or referenced generally (e.g., "In addition to the specific conditions contained herein, source is subject to all applicable rules and regulations..."). That this assumption is widely held is evident in the number of cases where the review agency (and applicant) uses an emissions limit to determine 3-hour and 24-hour ambient air impacts, but does not specify the averaging time for the emissions limit. The New Source Performance Standards (NSPS) have reinforced this assumption of a continuous emissions limit through the prescribed reference test methods,

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which generally average three or more samples taken over periods of time ranging from one to three hours. Thus, use of NSPS limits or NSPS test methods has been considered sufficient indication of the intent of the review agency to establish not-to-be-exceeded continuous emissions limits.

A divergence between the NSPS emissions rate averaging time for fossil fuel-fired steam generating units and the PSD emissions rate averaging time requirements for these same units is affecting this assumed interrelationship. Protection of the PSD SO_2 increments requires emission limits with averaging times no longer than the averaging times for the increment. Thus, compliance with a 3-hour SO_2 increment requires an emissions limit averaging time of 3 hours or less. For example, assume that a continuous emissions limit is established for a source at a level that would result in a 3-hour ambient impact almost identical to the ambient impact increment allowed; the emission limit prevents "peak" emission rates that could result in exceedances of the increment. An emissions limit with a 6-hour averaging time would not necessarily provide this protection; a 3-hour "peak" could be offset by a 3-hour "low" to meet the 6-hour average emission limit, but the ambient impact during the 3-hour "peak" would exceed the 3-hour increment.

On October 21, 1983 (48 FR 48960), EPA proposed new SO_2 compliance, emissions measurement, and reporting requirements for sources subject to New Source Performance Standards (NSPS) under 40 CFR 60 Subpart D (fossil fuel-fired steam generators larger than 250 million btu per hour heat input). This proposal would require SO_2 compliance testing against the existing numerical NSPS limits of 1.2 and 0.8 pounds SO_2 per million btu for coal and oil, respectively, but requires compliance demonstrations on a continuous basis through the use of continuous emission monitors (CEM) or fuel sulfur analysis (FSA). Sulfur dioxide emissions would be calculated on a rolling 30-day average basis instead of a short-term (approximately 3-hour) stack

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1984. Although a rolling 30-day average NSPS (Subpart Da) had been promulgated on June 11, 1979, for new electric utility boilers (44 FR 33580), the October 21, 1983, action would apply after the fact to nearly 500 operating Subpart D units for which the initial permits relied to some degree on the presumption that compliance with the NSPS would be achieved on a continuous short-term (3-hour and 24-hour) basis rather than on a continuous 30-day rolling average basis. Many reviewing agencies have determined air quality impacts by modeling the NSPS limit (1.2 or 0.8 pound SO_2 per million btu) as the maximum short-term emission rate for most Subpart D and many Subpart Da sources, but did not specify such short-term analyses or continuous compliance procedures in their permit conditions.

An emission level which averages 1.2 pound SO_2 per million btu over a period of 30 days can on a short-term basis be higher than that limit as long as the 30-day emissions average at or below 1.2 pounds SO_2 per million btu. For example, 20 days at 1.3 pounds SO_2 per million btu and 10 days at 1.0 pounds per million btu will average 1.1 pounds SO_2 per million btu and meet the 30-day average NSPS, but will exceed 1.2 pounds SO_2 per million btu for 10 of the 30 days. This is not intended to imply that a rolling 30-day average makes possible extremely large variations in emissions rates; it does not. The 10 days of 1.3 pounds SO_2 per million btu, for example, had to also be compensated for by the 20 days preceding this higher 10-day rate, since this is a rolling average. However, policy is required to avoid confusion by both sources and review agencies regarding what short-term and long-term emission limits must be met by sources affected by these NSPS revisions.

Since the most important role of PSD permits is to prevent significant deterioration, EPA's policy regarding permits affected by this and other NSPS revisions is based on the effect of these actions on the ambient air. The NSPS action was based on both technical and cost considerations, but the

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revisions of permits for any PSD sources, whether related to NSPS revisions or not, are based on PSD goals and air quality considerations.

A. Subpart D Sources

EPA's policy regarding PSD permits for Subpart D sources affected by the October 21, 1983, NSPS proposed revision is this:

(1) If there are any SO_2 emission limits (e.g., pounds SO_2 per hour, pounds SO_2 per megawatt, etc.) in the permit, these limitations represent BACT and must be met by the source unless and until such limits are altered by a permit change using the procedures specified in today's policy. Any permit emission limit is considered a limit which must be complied with continuously unless specified otherwise.

(2) PSD permit emission averaging times are considered short-term averages, even for the Subpart D NSPS limits, as long as it can reasonably be presumed that at the time of permit issuance the emissions limits were considered short-term emission limits (e.g., by use of such limit in modeling 3-hour or 24-hour ambient impacts). That limit remains a short-term limit (regardless of the regulatory revisions to the NSPS) unless and until the permit is changed to specifically indicate otherwise. In fact, a short-term emission limit may not always be included as part of the permit (although good permit processing practices encourage the inclusion of all applicable conditions and limitations); the limits used in demonstration of short-term ambient air impacts comprise corresponding short-term emissions limits.

(3) If the only SO_2 emission limits associated with the permit are specifically stated to be long-term (longer than the 3-hour and 24-hour averaging times) and no short-term SO_2 ambient air impacts were determined, the PSD permit is incomplete, the 3-hour and 24-hour increments and NAAQS must be protected, and an analysis is needed to provide such assurance. In this case, the review agency (without waiting for a request from the

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source) must reassess short-term impacts for all sources on the basis of maximum anticipated short-term emissions. If the legal authority exists for a review agency to initiate revision of an incomplete PSD permit, the agency should do so, specifying short-term limits. If a request for a permit revision must be initiated by the applicant, the agency should not only include short-term limits at the first opportunity, but also encourage the source to apply for a revision. At the least, any new levels of increment and NAAQS consumption resulting from a lack of enforceable short-term emission limits must be taken into account in future PSD permit analyses. If increment or NAAQS exceedances are predicted by the new analysis, the review agency must act to prevent such exceedances. The review agency must also establish a policy providing short-term limits on PSD permits to protect short-term increments and NAAQS.

With the possible exception of those sources falling under paragraph (3) above, owners and operators of sources with PSD permits wishing to take advantage of the relief from sulfur variability offered by the rolling 30-day average NSPS must apply for a PSD permit change and obtain a revised permit if exceedance of the NSPS or BACT emission level on a short-term (including never-to-be-exceeded and 3- or 24-hour) basis is anticipated. To be granted, these permit change requests must meet two criteria:

(1) The source must demonstrate that any BACT level of compliance embodied in the permit (including BACT limits with shorter averaging times as well as more stringent limits) is either (a) no longer feasible on either a technological or economic basis, or (b) will still be ensured by the use of the longer term average.

(2) The source must demonstrate that neither the NAAQS nor the increments for SO_2 would be exceeded (as demonstrated by dispersion modeling) by any revised short-term emission limits contained in either permits or the SIP.

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During the processing of such requests, the review agency must take the opportunity to provide specific emission limits or other permit conditions which protect all applicable NAAQS and PSD increments. Although it is EPA's policy that the emissions limits used to determine compliance with short-term increments and NAAQS are enforceable even if such limits are not specified in the permit itself, EPA strongly encourages the inclusion of all applicable emissions limits, operating parameters, fuel specifications, averaging times, compliance methods, and other requirements in the permit. Such action will both decrease uncertainty regarding the limitations a source must meet and reinforce the legal basis of such limitations. The limitations, to be fully effective, must specify averaging times corresponding to one or more short time periods consistent with the limiting PSD increment or NAAQS (e.g., pounds SO_2 per hour). A limitation such as pounds SO_2 per million btu heat input is an excellent control technology limitation, but either the heat input (boiler load) or the emissions per unit of time must also be limited to provide ambient air impact protection.

B. Subpart Da Sources

On June 11, 1979 (44 FR 33580), EPA promulgated new requirements for electric utility boilers (Subpart Da sources). These new requirements, actually in effect since September 18, 1978 (43 FR 52154), specified a rolling 30-day average NSPS for SO_2 for new Subpart Da sources. PSD permits issued subsequent to these dates, although intended to protect short-term as well as long-term increments and standards, may specify in the permit only the rolling 30-day average NSPS as an SO_2 emission limitation. This situation differs from that of Subpart D sources in that the NSPS for Subpart Da sources was not applied retroactively to sources already permitted; the Subpart Da permits were issued by review agencies with full knowledge that the SO_2 NSPS was a long-term (rolling 30-day average) limitation. EPA

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cannot presume that agencies considered the revised Subpart Da NSPS to be a "never-to-be-exceeded" short-term emission limitation as was assumed for the Subpart D sources.

As a result, EPA's policy regarding PSD permits for Subpart Da sources is this:

(1) If the PSD permit contains (or incorporates by reference) short-term SO_2 emissions limits, those limits must also (in addition to the Subpart Da NSPS) be met by the source and presumably represent BACT. The emission limit averaging times, even if not specifically stated (e.g., pounds per hour), are considered short-term averages as long as it can reasonably be presumed that they were considered as such (e.g., by use of such limit in modeling 3-hour or 24-hour ambient impacts). These emissions limits then could be enforceable short-term limits which adequately protect the 3-hour and 24-hour increments and NAAQS.

(2) If the PSD permit does not contain (or incorporate by reference) short-term SO_2 emission limits adequate to protect short-term increments and NAAQS, the review agency responsible for PSD permits must take the following actions within six months of the date of publication of this policy in the FEDERAL REGISTER.

(a) Reassess short-term impacts for all such sources on the basis of maximum anticipated short-term emissions and take these new increment consumption levels into account in future PSD permit analyses.

(b) If increment exceedances are predicted by the new analysis, develop a revision to the SIP to prevent such exceedances.

(c) Develop and implement a policy or regulation requiring short-term limits in PSD permits that adequately protect short-term increments.

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A report to EPA on the actions taken and the sources and areas affected by these actions must be submitted by the responsible review agency within 8 months of publication of this policy in the FEDERAL REGISTER.

C. Maximum Anticipated Short-Term Emissions

Normally, ambient air impacts during permit processing are based on maximum allowable emissions since the source is not yet operating. Then, when the source begins operating, impacts are based on actual representative emissions. In these Subpart D and Da NSPS cases, however, not only is the source likely to already be in operation (which calls for use of actual emissions), but also there may not be any specified short-term emission limitation (so that no allowable emission limits are specified). Since these sources have been issued PSD permits (if the PSD permit has not yet been issued, there is still opportunity to include in the permit short-term emission limits, thus avoiding this problem). Information on fuel-sulfur variability should be available. For example, the 24-hour average fuel samples or 24-hour CEM averages required by the NSPS for calculating rolling 30-day averages can be used directly to determine the variation in 24-hour SO_2 emission levels that can occur with the specific fuel being used by a specific source. Standard statistical techniques can determine the 3 sigma upper bound on the values and this 3 sigma value can be used as the maximum anticipated 24-hour emissions level.

In addition, the range of anticipated 3-hour emission levels can be derived from the 24-hour averages, a series of 30-day averages, and the annual average. From this range of 3-hour values, an equivalent 3 sigma maximum anticipated 3-hour emission level can be derived.

It should be noted that these short-term "maximum anticipated" emission levels are not enforceable (unless incorporated--specifically or by reference--into the applicable regulation or permit). They are instead a statistical

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estimate of the actual short-term emissions anticipated at a source based on the characteristics of the fuel that source is using. As such, they constitute an estimate of actual short-term emissions that can be used to assess short-term ambient air impacts in lieu of specific limitations.

D. Compliance with Short-Term Emission Limitations

In an effort to balance the cost of gathering data and the need for data to determine compliance with short-term emissions limits, EPA in today's policy is placing most of the emphasis on 24-hour average emissions data. There are two reasons for this:

(1) The NSPS for Subpart D and Da sources require that collection of data be based on 24-hour time periods. The average of 30 of these 24-hour average emissions rates is the enforceable limit, but the emissions rates are available and the monitoring equipment in place as a result of the NSPS requirement. At most, today's policy will require only that data be collected and reported as individual 24-hour averages in addition to the rolling 30-day average.

(2) For many of these sources, the fuel is handled in such quantities that even if data on emissions are available almost immediately, little or nothing could be done. For example, a low sulfur coal-fired boiler bunker may hold an 8 (or more) hour supply of coal; even if a CEM is in use (rather than fuel sampling), the knowledge that a 3-hour average limit has just been exceeded does little good, there is another 5 (or more) hour supply of coal in the bunker which has to be burned before any corrective steps (such as blending in a lower sulfur coal) take effect. Fuel sampling analysis (FSA) increases even further the time required to respond because it takes longer to obtain the sampling results.

From the above, it follows that the best approach to compliance with a 3-hour average emissions limit is to project, based on sampling data

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representing either the sulfur content of the fuel or sulfur dioxide emissions, the maximum anticipated 3-hour average emissions rate. As long as the projected rate is less than the allowable short-term emissions limit, the source would be considered in compliance with the 3-hour emission limit, with one exception: if 3-hour average emission rate data are available (e.g., from a CEM or stack testing) and show exceedance of the 3-hour average allowable limit, then the 3-hour data can provide the basis for a noncompliance determination.

Thus, today's policy is that for PSD emissions limit compliance purposes, Subpart D and Da sources need gather only 24-hour average emissions data, using a method (CEM or FSA) specified by the appropriate NSPS. The 24-hour averages must, however, be reported individually rather than as rolling 30-day averages, and a statistical analysis must be conducted initially, then annually (unless waived in writing by the review agency) and whenever the fuel sulfur content (in terms of pounds of SO_2 per million btu) may have changed as evidenced by (1) use of fuel from a different source, or (2) evidence of a change in the average sulfur content of the fuel or sulfur dioxide emissions rate of the source.

Sources subject to the rolling 30-day average SO_2 NSPS must submit their initial report to EPA by (6 months from the date this policy is proposed in the FEDERAL REGISTER). The initial report shall include sufficient 24-hour average emissions rate data to demonstrate (1) compliance with any 24-hour emission limitation, and (2) that 24-hour SO_2 increment exceedances are not being caused or contributed to by the source. In addition, the report shall include a statistical analysis (of specific sampling data) showing the maximum anticipated 3-hour average SO_2 emissions rate expected to occur. Subsequent reports of 24-hour average SO_2 emission rates are to be submitted with the NSPS emissions data.

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VIII. AMBIENT IMPACT EQUIVALENTS

Proposed changes to permits can affect the ambient air impacts of a source without changing the level of emissions from the source. For example, a shorter stack could increase ground level ambient impacts; so could relocation of a planned emissions unit closer to the source's restricted access boundary. Proposed changes of this type must also be taken into account, and today's policy proposes doing so by establishing the concept of equivalent ambient impacts.

When a change is proposed which would result in changes in the source's ambient impacts, today's policy proposes the following (unless some other aspect of the change requires more extensive documentation or review):

(1) Decreases in ambient air impacts are processed as administrative changes.

(2) Increases in ambient air impacts are subjected to appropriate dispersion modeling to determine the equivalent emissions increase from the prechange source or emissions unit which would produce the same impact as the proposed change. The equivalent emissions level is used to determine whether the proposed change is minor or significant.

In many cases, ambient impacts, once modeled, are proportional to emissions increases and decreases; if, for example, emissions double, the ambient impact doubles. For such cases, the equivalent emissions increase can be determined by ratio:

$$E = E_0 (I_n / I_0) - E_0$$

where: E = "equivalent" emissions rate change, grams per second

E_0 = original (prechange) emissions rate, grams per second

I_n = postchange ambient impact, micrograms per cubic meter

I_0 = prechange ambient impact, micrograms per cubic meter

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I_n and I_0, must be based on the same averaging time and must represent the maximum ambient air impact increase resulting from the proposed change.

If there is no proportional relationship between emissions and ambient impacts, dispersion modeling using different emissions rates may be necessary to determine equivalents. Any such complex cases should be handled by appropriate modeling experts.

IX. CONCLUSION

We believe that today's proposed policy statement addresses the classification and processing of the types of change requests most often referred to EPA for consultation. Because of the wide range of activity subject to proposed source changes, the Agency especially solicits comment from those with experience in this area regarding whether additional issues or topics should be included. Similarly, EPA seeks comment regarding the potential effectiveness of the general approach developed for processing proposed changes.

_____

Administrator

EPA7APC013344

BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:	)	
	)	ORDER RESPONDING TO
UNITED STATES STEEL	)	PETITIONER'S
CORPORATION – GRANITE CITY	)	REQUEST THAT THE
WORKS	)	ADMINISTRATOR
	)	OBJECT TO ISSUANCE OF STATE
CAAPP Permit No. 96030056	)	OPERATING PERMIT
Proposed by the Illinois	)	
Environmental Protection Agency	)	Petition Number V -2011-2
	)	

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

ORDER GRANTING IN PART AND DENYING IN PART PETITION FOR OBJECTION TO PERMIT

INTRODUCTION

On May 2, 2011, pursuant to its authority under the Illinois Clean Air Act Permitting Program (CAAPP), the Illinois Environmental Protection Act, 415 ILCS 5/39.5, title V of the Clean Air Act (Act), 42 U.S.C. §§ 7661-7661f, and the United States Environmental Protection Agency's (EPA) implementing regulations in 40 C.F.R. Part 70 (Part 70), the Illinois Environmental Protection Agency (IEPA) issued a title V operating permit to United States Steel Corporation – Granite City Works (USGW). Located in Granite City, Madison County, Illinois, USGW manufactures iron and steel products. USGW's manufacturing processes involve raw material processing and preparation, coke production, coke oven gas by-products recovery, iron production, steel production, and steel finishing.

On August 16, 2011, the Interdisciplinary Environmental Clinic at the Washington University School of Law submitted to the EPA on behalf of the American Bottom Conservancy (the Petitioner) a petition requesting that EPA object to issuance of the USGW title V permit pursuant to section 505(b)(2) of the Act and 40 C.F.R. § 70.8(d). The Petitioner alleges that (1) the permit's use of emission factors fails to provide periodic monitoring designed to ensure compliance with permit limits and lacks practical enforceability; (2) several permit limits lack adequate periodic monitoring requirements to ensure compliance with the limits; (3) the permit fails to respond to EPA's Order dated January 21, 2011, with respect to excess emissions associated with startup, breakdown, and malfunctions; and (4) the permit fails to respond to EPA's Order to include applicable requirements from the related construction permit for a new

Illinois Attorney General's Office //

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LEGAL COUNSEL
MEETING SIGN-IN SHEET

DATE 2/9/2012

SUBJECT US Steel

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R009493

EPA-450/3-82-005b

Revised Standards for Basic Oxygen Process Furnaces - Background Information for Promulgated Standards

Emission Standards and Engineering Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

December 1985

REFERENCE DOCUMENT 1
BACKGROUND INFORMATION
DOCUMENT FOR REVISED NSPS

EPA - DIVISION OF RECORDS MANAGEMENT
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This report has been reviewed by the Emission Standards and Engineering Division of the Office of Air Quality Plannir and Standards, EPA, and approved for publication. Mention of trade names or commercial products is not intended to consi tute endorsement or recommendation for use. Copies of this report are available through the Library Services Office (MD-35 U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; or, for a fee, from the National Techr cal Information Services, 5285 Port Royal Road, Springfield, Virginia 22161.

Publication No. EPA-450/3-82-005b

See p. 3-33

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ENVIRONMENTAL PROTECTION AGENCY

Background Information
Final Environmental Impact Statement
Revised Standards of Performance
for Basic Oxygen Process Furnaces

Prepared by:

Jack R. Farmer — 12/2/85 (Date)

Jack R. Farmer
Director, Emission Standards and Engineering Division
U. S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

1. The promulgated standards of performance would limit secondary emissions of particulate matter from new, modified, and reconstructed basic oxygen process steelmaking facilities. The final standards implement Section 111 of the Clean Air Act (42 U.S.C. 7411) and are based on the Administrator's determination that the previously promulgated standards for BOPF's no longer reflect application of the best demonstrated technology (BDT) for these facilities.

2. Copies of this document have been sent to the following Federal Departments: Office of Management and Budget; Labor, Health and Human Services, Defense, Transportation, Agriculture, Commerce, Interior, and Energy; the National Science Foundation; the Council on Environmental Quality; members of the State and Territorial Air Pollution Control Adminstrators; the Association of Local Air Pollution Control Officials; EPA Regional Administrators; and other interested parties.

3. For additional information contact:

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   U. S. Environmental Protection Agency
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4. Copies of this document may be obtained from:

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   Research Triangle Park, North Carolina 27711

   National Technical Information Service
   5285 Port Royal Road
   Springfield, Virginia 22161

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1. SUMMARY

On January 20, 1983, the U.S. Environmental Protection Agency (EPA) proposed standards of performance for basic oxygen process furnaces (BOPF's) under authority of Section 111 of the Clean Air Act (48 FR 2658). Public comments were requested on the proposal in the Federal Register. A total of five sets of public comments were received. Four commenters were industry representatives; also commenting was one private environmental engineering firm. The comments that were submitted, along with responses to these comments, are summarized in this document. The summary of comments and responses serves as the basis for revisions made to the standards between proposal and promulgation.

1.1 SUMMARY OF CHANGES SINCE PROPOSAL

The proposed rules for BOPF's were contained in two Subparts of 40 CFR Part 60--Subparts Na and N. The following two sections describe the proposed and final rules.

1.1.1 Subpart Na Rules

As proposed, Subpart Na applied to secondary emissions from top-blown and bottom-blown BOPF's and to hot metal transfer and skimming stations. Visible emissions from the BOPF shop roof monitor or other building openings were limited to no more than 10 percent opacity during the operation of any top-blown BOPF, except that an opacity greater than 10 percent but less than 20 percent could occur once per steel production cycle. Visible emissions from the BOPF shop roof monitor or other building openings were limited to no more than 30 percent opacity during the operation of any bottom-blown BOPF, except that an opacity greater than 30 percent but less than 60 percent could occur twice per steel production cycle. Mass emissions of particulate

matter exiting a control device were limited to no more than 23 mg/dscm (0.010 gr/dscf). The opacity of visible emissions exiting the control device was limited to no more than 5 percent. Compliance with the proposed visible emission standards was determined by Reference Method 9 through 3-minute averages. Compliance with the proposed mass standard for the collection device was determined with the use of Reference Method 5.

A roof-mounted electrostatic precipitator (RMESP) used to control secondary emissions from an affected facility was exempted from the mass and opacity standards for secondary emission control devices. A device used to control both primary and secondary emissions also was exempted from the secondary emission control device mass and opacity standards.

A number of changes have been made to Subpart Na since proposal. The most significant change is in the applicability of the final standards resulting from the withdrawal of the roof monitor opacity standard for bottom-blown BOPF's. The rationale for this change is discussed in Chapter 2, Section 2.4, entitled "Numerical Emission Limits."

The final rules apply to secondary emissions of particulate matter from top-blown BOPF's and hot metal transfer and skimming stations used with bottom-blown or top-blown BOPF's that have been constructed, modified, or reconstructed after January 20, 1983. Visible emissions from shop roof monitors (or other building openings) may not exhibit more than 10 percent opacity during the steel production cycle of a top-blown BOPF and during hot metal transfer or skimming for a bottom-blown BOPF, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle. Visible emissions from the shop roof monitor during the bottom-blown furnace cycle (i.e., the steel production cycle excluding hot metal transfer and skimming) are not subject to the roof monitor opacity standard. Mass emissions from a secondary emission collection device are limited to 23 mg/dscm (0.010 gr/dscf). Control device opacity is limited to 5 percent. These emission limits also apply to top-blown

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BOPF's and to hot metal transfer stations or skimming stations used with a bottom-blown or a top-blown BOPF. Under the final rules, fume suppression systems are exempt from the mass and opacity limits for the secondary emission collection device, as is any device used to control primary and secondary emissions. RMESP's are not exempt from the final mass and opacity standards for secondary emission collection devices.

Numerous clarifying changes also have been made to §60.141a, which includes definitions for terms used in the secondary emission standards. For example, the definition of "hot metal transfer" was expanded to include the transfer of molten iron from the torpedo car to the charging ladle, or from the torpedo car to an intermediate vessel and from the intermediate vessel to the charging ladle. Definitions proposed for "primary emissions" and "secondary emissions" also were expanded and a new definition for "primary emission control system" was added, as were definitions for new technologies, such as fume suppression systems. The definition of "startup" was deleted from the final rule because the General Provisions of 40 CFR Part 60 now include a definition for this term. Additionally, the definition of "steel production cycle" was expanded to include preheating (when used) and vessel turnup, as well as vessel turndown, during sampling operations.

The monitoring requirements for the secondary emission control system were also modified. As proposed, §60.143a required the use of a monitoring device that continuously records the various exhaust ventilation rates through the secondary emission control system for each phase of each steel production cycle. The final rule specifies that the owner or operator install, calibrate, operate, and maintain a monitoring device that continually measures and records for each steel production cycle the various exhaust ventilation rates or levels of exhaust ventilation through each duct of the secondary emission control system for each phase of each steel production cycle. The final monitoring provisions also include a requirement for the semiannual reporting of monitoring measurements over any 3-hour period that

averages more than 10 percent below the average levels maintained during the most recent performance test for demonstrating compliance with the mass standard for secondary emission collection devices. A similar provision also was added to require semiannual reporting if a scrubber primary emission control device is used for secondary emission collection. Operating requirements were also added to §60.143a for the use of strip chart recorders. The rationale for these changes is discussed in Chapter 2, Section 2.7, entitled "Equipment, Design, and Operating Specifications."

Several clarifying changes were made to §60.144a regarding test methods and procedures. First, §60.144a(b)(1), which provided for the aggregation of visible emission observations from multiple exit points, was deleted from the final rule. A new provision was added that provides instructions for comparing the velocity readings obtained by Reference Method 2 to the step changes recorded by a device that monitors the level of exhaust ventilation. The sampling requirements for secondary emissions by Reference Method 5 were also modified. The proposed rule specified that the sampling for each run is to continue for a sufficient number of steel production cycles to ensure a total sample volume of at least 2.27 dscm (80 dscf) for each run. The final rule increases the requirement for total sample volume to 5.67 dscm (200 dscf). A new provision was also added that allows shorter sampling times and smaller sample volumes, subject to approval by the Administrator, when necessitated by process variables or other factors. This revision is discussed in Chapter 2, Section 2.5, entitled "Emission Testing and Monitoring."

Many of the compliance provisions proposed under §60.145a were expanded or clarified. Sections 60.145a(a) and (b) were clarified specifically to allow an owner or operator of a BOPF shop that normally operates two furnaces with overlapping cycles to shut down one furnace during compliance tests for both mass and visible emissions. A new provision also was added that requires the owner or operator to operate the secondary emission control system for the furnace being tested at exhaust ventilation rates (or levels) through each duct of the system

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that are appropriate for single-furnace operation. Following the compliance test, the owner or operator must operate the system so that exhaust ventilation rates (or levels) through each duct of the secondary system are no lower than 90 percent of the exhaust ventilation rates (or levels) established for each duct during the most recent compliance test. The rationale for this change is discussed in Chapter 2, Section 2.7, entitled "Equipment, Design, and Operating Specifications."

Section 60.145a was also clarified to define specifically the period for hot metal transfer or skimming visible emission observations. For both hot metal transfer and skimming, visible emission observations begin with the start of the operation and terminate 3 minutes after completion of the operation. The final rules also require that for visible emission compliance tests, all visible emission observations are to be identified and recorded in conjunction with the starting times and stopping times of regulated operations in the steel production cycle. The final rules require the use of 3-minute averages for visible emission observations by Reference Method 9.

Section 60.145a also was expanded to include instructions for determining compliance with the 5-percent opacity standard and the 0.010-gr/dscf concentration standard for the secondary emission collection device. To determine compliance with the opacity standard, the owner or operator would construct consecutive 3-minute averages for each steel production cycle. Compliance would be achieved if no 3-minute average exceeded 5 percent. To determine compliance with the mass standard, the owner or operator would determine the concentration of particulate matter in exhaust gases exiting the secondary emission collection device, according to Reference Method 5. Compliance would be achieved if the measured value did not exceed 23 mg/dscm (0.010 gr/dscf). Additionally, instructions for determining compliance with the proposed roof monitor opacity standard for bottom-blown furnaces were deleted from the final rules.

1.1.2 Subpart N Amendments

Subpart N contains standards of performance that regulate primary emissions of particulate matter from BOPF's constructed, reconstructed,

or modified after June 11, 1973. On January 20, 1983, minor amendments were proposed for Subpart N BOPF's constructed, reconstructed, or modified between June 11, 1973, and January 20, 1983. These proposed amendments did not revise the existing emission limit of 50 mg/dscm (0.022 gr/dscf) for mass emissions of particulate matter from the primary emission control device or the existing opacity limit for visible emissions exiting the primary emission control device. The existing standard limits visible emissions exiting the primary emission control device to an opacity of less than 10 percent, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle. Additionally, no changes were proposed to the existing monitoring or reporting requirements. The proposed amendments did revise the test method instructions for sampling of mass emissions by Reference Method 5. The existing standard required a sampling rate of at least 0.9 dscm/hr (0.53 dscf/min); the proposed amendments required a minimum sample volume of at least 0.9 dscm (32 dscf). It should be noted that the minimum sample volume of 9.9 dscm (32 dscf) proposed under subparagraph (b)(1) was the result of a Federal Register misprint; a minimum sample volume of 0.9 dscm (32 dscf) was intended. With the exception of the sample volume requirement, no other changes to the test methods and procedures for determining compliance with the mass or visible emission standards were proposed for these Subpart N BOPF's.

The proposed amendments also expanded the definition of a "basic oxygen furnace" to exclude specifically open hearth, blast, or reverberatory furnaces. No other definitional changes applicable to Subpart N BOPF's were proposed.

A number of changes have been made since proposal to the final standards for these Subpart N BOPF's. The proposed minimum sample volume requirement has been increased to at least 1.5 dscm (53 dscf). This revision is discussed in Chapter 2, Section 2.6, entitled "Emission Testing and Monitoring." With the exception of this increased sample volume requirement, no changes have been made to the existing test methods and procedures for determining compliance with the mass and opacity limits for primary emission control device by these Subpart N BOPF's.

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Since proposal on January 20, 1983, EPA has become aware of a difference in furnace cycle time between top-blown and bottom-blown furnaces that may impact measured emission concentrations for those facilities regulated under Subpart N. Bottom-blown furnaces in general have shorter oxygen blowing periods than top-blown furnaces. The testing provisions for those BOPF's constructed, reconstructed, or modified after June 11, 1973, but on or before January 20, 1983, allow testing from the beginning of the oxygen blow, or scrap preheat if practiced, until just prior to tapping. The bulk of the particulate emissions occur during the oxygen blow, however. With a shorter oxygen blowing period and roughly the same length nonblowing period as top-blown furnaces, the bottom-blown furnaces are allowed a greater proportion of test time during nonblowing periods, thus tending to dilute the measured particulate concentration more than is allowed for top-blown furnaces. To remedy this inequity due to furnace cycle differences, EPA intends to propose revised sample period requirements and mass standards as may be appropriate for top-blown and bottom-blown furnaces under Subpart N as part of the 4-year NSPS review cycle.

No changes were proposed to the monitoring requirements specified in §60.143 of the existing standards. The final rules would continue these requirements with certain minor changes. Under §60.143(b)(2), a monitoring device is required for the continuous measurement of the water supply pressure to the control equipment, and the pressure sensor or tap must be located close to the water discharge point. The existing standards then state that the Administrator may be consulted for approval of alternative locations for the pressure sensor or tap. Under the final rules, alternative locations for the pressure sensor or tap must be approved in advance by the Administrator. Also, the word "continuous" was changed to "continually" to avoid confusion with continuous monitoring system requirements specified under the General Provisions of 40 CFR Part 60. Section 60.143 of the existing standards also requires quarterly reports of all monitoring measurements over any 3-hour period that averages more than 10 percent below the average

levels maintained during the most recent performance test for demonstrating compliance with the mass standards. The final standards reduce the reporting frequency from quarterly to semiannually.

No changes to the definition for a BOPF have been made since proposal. However, §60.141 of the final rules includes a revised definition of "steel production cycle" for Subpart N BOPF's and a new definition for "primary emissions." For Subpart N BOPF's (i.e., constructed, reconstructed, or modified after June 11, 1973, but on or before January 20, 1983), the existing definition of "steel production cycle" has been expanded to include sampling (vessel turndown and turnup) operations. "Primary emissions" means particulate matter emissions from the BOPF generated during the steel production cycle and captured by the primary emission control system. Also, the definition of "startup" was deleted from §60.141 because a definition is now included in the General Provisions of 40 CFR Part 60.

Also on January 20, 1983, amendments to Subpart N were proposed to regulate BOPF's constructed, reconstructed, or modified after January 20, 1983. These proposed standards adjusted the mass emissions limits and the test methods and procedures for determining compliance. For BOPF's with a closed hood primary emission control system, the proposed amendments limited mass emissions of particulate matter to no more than 68 mg/dscm (0.030 gr/dscf), as measured for the primary oxygen blow. For BOPF's with an open hood primary emission control system, mass emissions of particulate matter were limited to no more than 50 mg/dscm (0.022 gr/dscf), as measured for the primary oxygen blow. The proposed amendments to the test methods and procedures for sampling of mass emissions by Reference Method 5 specified that sampling for each run must continue for an integral number of primary oxygen blows with a total duration of at least 60 minutes. A minimum sample volume requirement of 0.9 dscm (32 dscf) also was proposed.

No changes were proposed to the existing opacity standard for primary emission control devices. Under the proposed amendments, visible emissions from control devices for open or closed hood primary control systems were limited to no more than 10 percent opacity, except that an opacity greater than 10 percent but less than 20 percent

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could occur per steel production cycle. No changes to the test methods and procedures for determining compliance with the opacity limit were proposed.

A proposed definition for "primary oxygen blow" also was added to §60.141. The proposed definition defined "primary oxygen blow" as the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel or through tuyeres in the bottom or the bottom and sides of the vessel. Reblows were excluded from the proposed definition, as was the introduction of nitrogen through tuyeres in the bottom or bottom and sides of the vessel.

The final Subpart N standards for BOPF's constructed, reconstructed, or modified after January 20, 1983, continue the proposed requirements with few exceptions. No changes to the adjusted limits for mass emissions from open or closed hood primary control systems have been made since proposal, although a new operational requirement has been added. During and after any compliance test, the owner or operator must operate the gas cleaning device during any reblow in a manner identical to operation during the primary oxygen blow. The final rules require these BOPF's to determine compliance with the adjusted mass emission limits by sampling during the primary oxygen blow. No changes to the proposed definition of "primary oxygen blow" have been made since proposal. Except for an increased sample volume requirement, no changes to the Reference Method 5 test methods and procedures for determining compliance with adjusted mass emission limits have been made since proposal. The proposed minimum sample volume requirement of 0.9 dscm (32 dscf) has been increased to at least 1.5 dscm (53 dscf). This change is discussed in Chapter 2, Section 2.6, entitled "Emission Testing and Monitoring." As proposed, shorter sampling times and smaller sample volumes are permitted when necessitated by process variables or other factors, subject to approval by the Administrator.

No changes have been made to the visible emission limit applied to these BOPF's. As proposed, visible emissions from control devices for open or closed hood primary control systems are limited to no more

than 10 percent opacity except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle. Under the final rules, compliance with the visible emission standard is determined according to the provisions of the existing primary standard. However, the definition of "steel production cycle" for these BOPF's has been revised since proposal to include specifically sampling (vessel turndown and turnup) and deslagging operations.

BOPF's constructed, reconstructed, or modified after January 20, 1983 also are subject to the amended monitoring and reporting requirements. As discussed previously, §60.143 has been clarified to require advance approval by the Administrator for alternative locations for the monitoring device pressure sensor or tap. The final standards also reduce the frequency of reporting requirements from quarterly to semiannually.

1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

1.2.1 Alternatives to Promulgated Action

The regulatory alternatives are discussed in Chapter 6 of the background information document (BID) for the proposed standards. These regulatory alternatives reflect the different levels of emission control from which one is selected that represents best demonstrated technology (BDT), considering costs, nonair quality health, and environmental and economic impacts for secondary emission control of BOPF's. Regulatory Alternative II, the alternative selected as the basis of the proposed secondary emission standards, was revised to account for withdrawal of the roof monitor opacity standard for bottom-blown furnaces. As revised, Regulatory Alternative II includes BDT controls for top-blown furnaces and for hot metal transfer stations and skimming stations used with bottom-blown or top-blown furnaces.

1.2.2 Environmental Impacts of Promulgated Action

The regulatory alternatives and their environmental impacts are discussed in Chapters 6 and 7 of the BID for the proposed standards. The environmental impacts remain unchanged since proposal. Withdrawal of the proposed roof monitor opacity standard for secondary emissions

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from bottom-blown furnaces would not affect the environmental impacts because impacts for the period 1981 through 1986 were based on estimates of increased capacity projected for top-blown furnaces.

Comments received from the Office of Water indicate that the gas cooling and conditioning system used with an electrostatic precipitator (ESP) must be designed as a total evaporation system because the steel industry effluent regulation (40 CFR 420, May 27, 1982) specifies no discharge from these systems. Text from the BID for the proposed standards also has been revised to include a further discussion of the water pollution impact of Regulatory Alternative III if a wet or semiwet ESP were used in lieu of other control systems. A detailed discussion of these revisions may be found as Item IV-B-7 in Docket No. A-79-6. With the changes noted in this docket submission, the analysis of environmental impacts in Volume 1 of the BID is now considered the final environmental impact statement (EIS) for the promulgated standards.

1 2.3 Energy and Economic Impacts of Promulgated Actions

Energy and economic impacts are discussed in Chapters 7, 8, and 9 of the BID for the proposed standards. These estimated nationwide impacts have remained unchanged since proposal.

Further analysis of secondary emission control technologies indicates that the cost effectiveness of the control technologies that can be used to comply with the standards ranges from $1,665 to $3,727 per ton of particulate matter removed for furnace emissions and from $1,755 to $3,100 per ton of particulate matter removed for hot metal transfer stations. In addition, new BOPF's may be able to employ lower cost, innovative hot metal transfer controls. However, the aggregated cost effectiveness of $2,245 per ton for secondary emission controls has not been revised since proposal.

1.2.4 Other Considerations

1.2.4.1 Irreversible and Irretrievable Commitment of Resources. None of the regulatory alternatives examined would result in the irreversible or irretrievable commitment of resources in that a tradeoff is made between short-term environmental gains at the expense of long-term environmental losses or vice versa.

The final regulations are standards of performance and therefore do not require the use of any particular control technology with which to achieve compliance. The regulatory alternative selected as the basis of the standards (Regulatory Alternative II) would allow the continued use of both types of primary control systems (open and closed hood) currently favored by the industry. In addition, the standards would not preclude the use of any other technology capable of achieving the emission limits and would encourage the use of innovative technology such as fume suppression systems.

1.2.4.2 Environmental and Energy Impacts of Delayed Standards. Delay of promulgated secondary emission standards for this source category was not considered a regulatory alternative because adequately demonstrated control technology exists upon which the final standards can be based. Also, construction, modification, or reconstruction of three BOPF shops is estimated to commence during the 5-year period following proposal of the standards. Nationwide uncontrolled secondary and controlled primary emissions of particulate matter at these shops would total about 3,221 Mg/yr (3,551 ton/yr) in the absence of the proposed standards. These emissions would be in addition to the uncontrolled secondary emissions from existing shops.

1.2.4.3 Urban and Community Impacts. The promulgated standards will have a beneficial urban and community impact. Reduction in particulate matter will reduce health risks for workers and the communities surrounding new BOPF steelmaking facilities and improve the overall environmental quality.

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2. SUMMARY OF PUBLIC COMMENTS

A total of five letters commenting on the proposed standards and the background information document (BID) were received. A public hearing was not requested during the prescribed period; consequently, no public hearing was held. A list of the commenters, their affiliations, and the U.S. Environmental Protection Agency (EPA) docket numbers assigned to their correspondence is given in Table 2-1.

For the purpose of orderly presentation, the comments have been categorized under the following topics:

1. Emission Data
2. Affected Facilities
3. Best Demonstrated Technology
4. Numerical Emission Limits
5. Visible Emission Standards
6. Emission Testing and Monitoring
7. Equipment Design and Operating Specifications

The comments, the issues they address, and EPA's responses are discussed in the following sections of this chapter.

2.1 EMISSION DATA

2.1.1 Comment: (IV-D-2) One commenter suggested that particulate matter emission factor reports for tests of basic oxygen process furnace (BOPF) hot metal charging and tapping at Republic Steel Corporation, Kaiser Steel Company, and Inland Steel Company be included in the data analysis of Volume I of the BID. He also believed that a report on particulate mass and particle size measurements for the hot metal desulfurization plant at Kaiser Steel Company should have been included.

TABLE 2-1. LIST OF COMMENTERS ON PROPOSED STANDARDS FOR THE BOPF NEW SOURCE PERFORMANCE STANDARD (NSPS) REVISION

Docket item number[a]	Commenter and affiliation
IV-D-1	E. F. Young, Jr. American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036 Date: March 15, 1983
IV-D-2	Jim Steiner Pape and Steiner Environmental Services 5801 Norris Road Bakersfield, CA 93308 Date: April 4, 1983
IV-D-3	D. A. Woodring Republic Steel Corporation P.O. Box 6778 Cleveland, OH 44101 Date: April 4, 1983
IV-D-4	David M. Anderson Bethlehem Steel Corporation Bethlehem, PA 18016 Date: April 4, 1983
IV-D-5	Frank P. Partee Compliance and Liaison Department Ford Motor Company One Parklane Boulevard Dearborn, Michigan 48126 Date: April 13, 1983

[a]The docket number for this project is A-79-6. Dockets are on file at EPA Headquarters in Washington, DC, and at the Office of Air Quality Planning and Standards (OAQPS) in Durham, NC.

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Response: Not all of the reports named by the commenter had been finalized and distributed at the time emission data were being analyzed. Emission factor data used in the BID were taken from "Particulate Emission Factors Applicable to the Iron & Steel Industry" (EPA-450/4-79-028), which contains material similar to that in the emission factor reports named by the commenter (II-A-46). This earlier report was the source for revised emission factors published in "Supplement Number 11 for Compilation of Air Pollutant Emission Factors, Third Edition," AP-42, published by EPA, October 1980. Information in the test reports named by the commenter and not used in this review of the BOPF standard will be evaluated during the next 4-year review of the BOPF standard. The selection of emission factors used in the development of the standards is further discussed in the response to comment 2.2.3.

2.1.2 Comment: (IV-D-2) One commenter suggested that the teeming emission factor of 35 g/Mg (0.07 lb/ton) of steel is based on unleaded heats and that leaded heats have an emission factor of 0.81 lb/ton, 72 percent of which is of inhalable particle size. He also recommended that secondary emissions from teeming be included in the proposed rulemaking.

Response: The commenter is correct in suggesting that an unleaded heat emission factor was used to assess teeming emissions. While the leaded heat emission factor is considerably larger, available information suggests that leaded heats comprise only a small portion of the total number of BOPF heats. In the absence of specific information to the contrary, a determination was made that the emission factor for unleaded heats would be more representative of normal industry practice. The rationale for not controlling teeming at present is discussed in the response to comment 2.2.4.

2.2 AFFECTED FACILITIES

2.2.1 Comment: (IV-D-1 and IV-D-4) Two commenters questioned the proposed definitions of the BOPF vessel, hot metal transfer station, and skimming station as separate, affected facilities. The commenters believe that construction, modification, or reconstruction of a hot

metal transfer or skimming station could subject an existing BOPF shop to the proposed secondary emission opacity standard. They also pointed out that because opacity readings are taken at shop openings, vents, and monitors (where they could be intermingled with emissions from unregulated operations in the shop), enforcement officials could require compliance from the entire existing shop.

Response: The choice of the affected facility for this standard is based on interpretation of Section 111 of the Act and judicial construction of its meaning. Under Section 111, the NSPS must apply to "new sources." "Source" is defined as "any building, structure, facility, or installation which emits or may emit any air pollutant" [111(a)(3)]. Most industrial plants, however, consist of numerous pieces or groups of equipment that emit air pollutants and that might be viewed as "sources." The term "affected facility" is used, therefore, to designate the equipment, within a particular kind of plant, which is chosen as the "source" covered by a given standard.

When the affected facility is chosen, a decision must be made concerning which pieces or groups of equipment are the appropriate units for separate emission standards in the particular industrial context involved. This decision is made by examining the situation in light of the terms and purpose of Section 111. One major consideration in this examination is that the use of a narrower definition results in bringing replacement equipment under the NSPS sooner; if, for example, an entire plant were designated as the affected facility, no part of the plant would be covered by the standard unless the plant as a whole is "modified." If, on the other hand, each piece of equipment is designated as the affected facility, as each piece is replaced, the replacement piece will be a new source subject to the standard. Because the purpose of Section 111 is to minimize emissions by application of the best demonstrated control technology (considering cost, other health and environmental effects, and energy requirements) at all new and modified sources, the presumption is that a narrower designation of the affected facility is proper. This designation ensures that new emission sources within plants will be brought under

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the coverage of the standard as they are installed. It was for this reason that the emission sources were defined as separate, affected facilities.

As explained in 48 FR 2658, the proposed standards of performance for secondary emissions would apply only to a BOPF, hot metal transfer station, or skimming station that commenced construction, modification, or reconstruction after January 20, 1983. (Note that the final rules apply only to top-blown BOPF's and to hot metal transfer stations or skimming stations used for bottom-blown or top-blown BOPF's.) It should be noted that although a plant may contain both affected facilities and existing, nonaffected facilities, the modification or reconstruction of an existing, nonaffected facility would not subject any other existing nonaffected facility to the requirements of the proposed regulation. Only the facility constructed, modified, or reconstructed would become subject to the standards of performance. For example, the addition of a new furnace to an existing shop would subject only the new furnace to the secondary emission standards; an existing hot metal transfer or skimming station would not be affected unless it was also modified or reconstructed. The effects of new construction, modifications, and reconstructions on affected and nonaffected facilities are discussed further in Chapter 5 of the BID for the proposed standards.

The proposed standards also recognize that, at times, visible emissions from the shop roof monitor (or other building openings) may occur from unaffected facilities or unregulated ancilliary operations. For this reason, the final rules allow the owner or operator to operate only one furnace during compliance testing for mass and visible emission limits. The owner or operator also may choose to suspend all unaffected shop operations during the test. The final regulation also requires that all visible emissions be identified in conjunction with the starting and stopping times of regulated process operations. Consequently, the use of a process observer is encouraged. A process observer inside the shop during the testing can reduce substantially the possibility that emissions from unaffected facilities or operations

are included in the opacity observations. These provisions are adequate to ensure that emissions from other operations or facilities are not adversely incorporated in the opacity observations.

2.2.2 Comment: (IV-D-4) One commenter requested clarification of the definitions for the affected facilities. This commenter indicated a potential discrepancy between §60.140a(a) of the regulation, which cites the affected facilities, and §60.142a(a), which contains the proposed secondary emission limits. The proposed emission limits appear to apply only to BOPF secondary emissions (i.e., emissions escaping the BOPF primary control system). Consequently, the proposed emission limits would not apply to hot metal transfer and skimming stations.

Response: Under §60.140a(a), the BOPF, hot metal transfer station, and skimming station are designated as the affected facilities subject to the proposed secondary emissions standards. Section 60.142a specifies the proposed emission limits for secondary emissions from affected facilities. The hot metal transfer station and the skimming station, as affected facilities, are subject to the proposed standards for particulate matter under §60.142a.

The proposed standards define secondary emissions as "particulate emissions that escape capture from the BOPF primary control system." Hot metal transfer and skimming operations do not generally occur in proximity to the furnace. Consequently, emissions from these operations are not captured by the BOPF primary control system. Because these emissions escape capture by the furnace control system, they are considered secondary emissions. Therefore, the proposed standards for secondary particulate matter apply to secondary emissions from the furnace, in combination with "secondary" emissions from hot metal transfer and skimming operations. The final rule clarifies the definition of "secondary emissions" by specifically including emissions from hot metal transfer and skimming. Also included in the final definition are particulate matter emissions that escape from openings in the primary emission control system, such as from lance hole openings, gaps or tears in the ductwork of the primary emission control system,

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or leaks in hoods. Similar clarifying changes were also made to the definition of "primary emissions," and new definitions for "primary emission control system" and "secondary emission control system" also were added to the final rule.

2.2.3 Comment: (IV-D-4) One commenter questioned the selection of affected facilities, based on "over-stated" emission factors and, in one case, lack of supporting data. He pointed out that the emission factors for uncontrolled secondary emissions of particulate matter from hot metal transfer and BOPF charging are considerably higher than are emission factors used in two more recent reports, "Particulate Emission Factors Applicable to the Iron and Steel Industry" (EPA-450/4-79-028) and "Fugitive Dust Emission Factor Update for AP-42" (Draft). The commenter also stated that uncontrolled emissions from hot metal transfer and charging emissions from top-blown vessels are insignificant compared to BOPF primary (oxygen blowing) emissions. In addition, the commenter questioned the legal justification for controlling skimming emissions when no data were available regarding the magnitude of these emissions and when no attempt was made to quantify these emissions.

Response: The BOPF, hot metal transfer station, and skimming station were selected for regulation in the proposed rules because adequately demonstrated control technology exists, considering costs, upon which the proposed standards can be based, and because these facilities account for about 1,355 ton/yr of uncontrolled secondary emissions of particulate matter for a typical BOPF shop operating two 272-Mg (300-ton) top-blown furnaces.

The emission factors used to estimate uncontrolled secondary emissions were the most current factors available at the time of the data analysis. It should be noted that AP-42 (Supplement 11) provided one set of emission factors for selected operations. However, a review of these emission factors revealed that they were based on tests for bottom-blown vessels. The source of these AP-42 emission factors was the 1979 EPA report, "Particulate Emission Factors Applicable to the Iron and Steel Industry" (EPA-450/4-79-028). Because this

latter report also included the best emission factors currently available for top-blown furnaces, these top-blown furnace emission factors were used in the data analysis.

Uncontrolled secondary emissions from hot metal transfer at a typical shop are estimated at 286 ton/yr for top-blown furnaces, based on an emission factor of 0.19 lb/ton hot metal poured. Controls (local hooding ducted to a baghouse) are available for the hot metal transfer station at a reasonable cost per ton of emission reduction. For these reasons, the hot metal transfer station was selected for control as an affected facility.

The skimming operation in new plants is generally performed at the hot metal transfer station, or immediately adjacent to it, following the hot metal transfer operation. No emission factor for skimming had been reported in AP-42 or in "Particulate Emission Factors Applicable to the Iron and Steel Industry" at the time of the data analysis. However, visible emissions from this operation have been observed at two plants based on Reference Method 22 (II-A-50, II-A-51). Because these emissions can be controlled by the same capture and collection system as used for hot metal transfer emissions, at no significant additional cost, the skimming station also was selected as an affected facility.

The vast majority of BOPF secondary emissions are attributable to the various operations comprising the steel production cycle of the BOPF vessel. These operations include scrap charging, hot metal charging, blowing, turndown, and tapping. No emission factors were available at the time of the data analysis to quantify secondary emissions from scrap charging, the primary blow, or vessel turndown. However, visible emissions from these operations have been observed at the roof monitors of several shops through Reference Method 22 (II-A-50, II-A-52, II-A-53, and II-A-54).

Emission factors are available to estimate secondary emissions from hot metal charging and tapping. Based on the highest quality emission factor for top-blown furnaces provided in "Particulate Emission Factors Applicable to the Iron and Steel Industry" (0.4 lb/ton of hot

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metal poured), secondary emissions from hot metal charging are estimated at 603 ton/yr for a typical shop. Secondary tapping emissions are estimated at 466 ton/yr for top-blown furnaces at a typical shop, based on the emission factor of 0.291 lb/ton of steel as reported in "Particulate Emission Factors Applicable to the Iron and Steel Industry."

It is true that uncontrolled secondary emissions from hot metal transfer and charging in top-blown vessels are only about 3.5 percent of BOPF primary (oxygen blowing) emissions. The emission factor for the blow, 28.6 lb/ton, can be compared to an emission factor of about 1 lb/ton for the combined effect of uncontrolled emissions from hot metal transfer and charging. However, uncontrolled secondary emissions from these operations combined total about 1,355 ton/yr at a typical shop. These are significant emissions for a typical shop and are considered even more significant on a nationwide basis. Uncontrolled secondary emissions of particulate matter from these operations constitute a major emission source, even when considered separate operations. Data are available with which to quantify these emissions and controls are available at a reasonable cost with which to reduce these emissions. Consequently, these operations were selected for regulation based on their own merits.

Uncontrolled secondary emissions emanating from furnace operations during the steel production cycle constitute the bulk of the secondary emissions from the BOPF steelmaking process. Emission factors are available to quantify secondary emissions from charging and tapping--the operations wherein emissions are most likely to escape capture by the primary hood. For top-blown furnaces, secondary emissions from charging and tapping combined total about 1,069 ton/yr. Controls are available for these emissions at a reasonable cost. These controls will also capture and collect secondary emissions from some other furnace operations at no additional cost. For these reasons, the BOPF was selected as an affected facility under the proposed standards, as were the hot metal transfer station and skimming station.

The affected facilities identified in the proposed rules have been revised since proposal. Under the final rules, the affected

facilities are the top-blown BOPF and hot-metal transfer and skimming stations used for a bottom-blown or a top-blown BOPF. The rationale for this change is discussed in response to comment 2.4.4.

2.2.4 Comment: (IV-D-2) One commenter disagreed that the cost of controlling ancillary operations not subject to the proposed standards would be highly disproportionate to the amount of particulate collected. The commenter indicated that teeming and hot metal desulfurization produce significant quantities of particulates compared to regulated secondary emission sources and that the same control technology (local hooding ducted to a baghouse) is also applicable to these unregulated ancillary operations. These ancillary operations may be located in proximity to the hot metal transfer station, allowing the use of one common control system. The commenter provided uncontrolled emission factors for hot metal desulfurization, based on a total of 10 recent tests on torpedo cars at Kaiser Steel. He further questioned the estimate for the quantity of emissions resulting from these unregulated ancillary operations (8 percent of identified fugitive emissions from BOPF shops). This commenter recommended that tests be performed to quantify emissions from these ancillary operations and that the control of these unregulated ancillary operations be considered under the proposed rulemaking.

Response: As explained at 48 FR 2660 and 2661, certain ancillary operations were not selected for regulation under the proposed secondary emission standards. These operations include hot metal desulfurization, dekishing, teeming, slag handling, ladle maintenance, and flux handling.

Prior to proposal of the secondary emission standards, no Reference Method 9 visible emission data were available with which to characterize emissions from hot metal desulfurization operations, although visible emissions were observed at one plant according to Reference Method 22 procedures (II-A-51, II-B-51, II-B-52, and II-B-54). Consequently, visible emission testing by Reference Method 9 was conducted at a second plant. Mass emission test data also were collected at this plant, but the results of the mass emission testing have been received only recently and currently are undergoing review. It should be noted

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that the emission factors supplied by the commenter were based on this same mass test. However, preliminary review has indicated that additional test data are required to portray emissions from this operation accurately, because hot metal desulfurization methods vary widely from plant to plant and may not be applied to all types of metal produced. For these reasons, this operation was not selected for control under the proposed standards at present. Rather than delay promulgation of the proposed standards to incorporate an evaluation of hot metal desulfurization, control of these emissions will be considered during the next 4-year review of the primary and secondary emissions standards.

Remaining ancillary operations not directly associated with the BOPF vessel (other than hot metal transfer and skimming) include teeming, dekishing, slag handling, ladle maintenance, and flux handling. Except for teeming, no emission factors are available to quantify uncontrolled particulate matter emissions from these operations, although low-level visible emissions from these operations have been observed. Based on a review of the estimate contained in the preamble (that ancillary operations contribute about 8 percent of total BOPF fugitive emissions at a typical shop), it is agreed that particulate emissions from these sources may be greater than previously estimated. However, the lack of quantitative emission data, coupled with the absence of good demonstrated control technology, prevented the selection of these operations for control at present. Should additional data become available, these operations will also be evaluated during the next 4-year review of the primary and secondary standards.

For teeming operations, AP-42 (Supplement 11) reported an emission factor of 0.07 lb/ton of steel, applicable to both top- and bottom-blown furnaces. Based on this emission factor, uncontrolled secondary emissions of a typical shop are estimated at 112 ton/yr. Even though these emissions are not insignificant, observations of visible emissions did not indicate measurable levels at BOPF shop roof monitors. Although controls are used for teeming of leaded steel, leaded steel represents a relatively small percentage of total steel production. Application of these controls on the scale required to fit teeming of all steel produced needs further study before a decision to regulate can be

made. Furthermore, many BOPF shops are installing continuous casting facilities. The general trend is toward this energy and labor saving production step that will reduce the amount of steel teemed (IV-J-1). For the above reasons, teeming was not selected as an emission source for regulation at present. However, this operation also will be reviewed and considered for control during the next 4-year review of the primary and secondary standards.

2.3 BEST DEMONSTRATED TECHNOLOGY (BDT)

2.3.1 Comment: (IV-D-2) One commenter disagreed with the preamble statement (p. 2661) that certain operating practices (e.g., clean scrap, slow pouring, careful positioning of the hot metal ladle, and proper furnace tilt angle) have been demonstrated only for top-blown furnaces. He stated that during testing of the Republic Steel bottom-blown furnace (Q-BOP), these practices were used and appeared to generate few or no fugitive emissions that escaped the secondary control system. This control was achieved despite the improper operating condition of the control system (one fan on primary hood and one on secondary hood, rather than two on secondary) during the test. Consequently, roof monitor opacity reached a maximum of 15 percent but averaged less than 10 percent over the period of hot metal addition. However, according to the commenter, these conditions were not achieved consistently during the test program.

Response: As the commenter pointed out, periods existed during which the indicated operating practices were accompanied by few or no fugitive emissions that escaped the secondary control systems. As he also pointed out, these conditions were not achieved consistently. In our engineering judgment, this lack of consistency indicates that the operating practices mentioned by the commenter are not demonstrated for bottom-blown furnaces. Therefore, the operating practices were not included as an element of BDT upon which the proposed standard for Q-BOP's was based. This lack of consistency was a contributing factor to our conclusion that the Republic Steel System does not truly represent BDT for bottom-blown controls. The rationale for withdrawal of the proposed Q-BOP standard is discussed further in response to comment 2.4.4.

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2.3.2 Comment: (IV-D-2) One commenter questioned the conclusion that performance of roof-mounted electrostatic precipitators (RMESP's) may be equivalent to or better than BDT for secondary emission collection when no data were available to assess RMESP performance. The commenter also questioned why a Japanese RMESP was not evaluated to support the proposed standards. This commenter pointed out that a baghouse can handle secondary emissions containing hard-to-precipitate kish particles and significant amounts of fine particulate emitted in large bursts more efficiently than can an RMESP. Although the commenter supported the possible RMESP waiver for innovative technology, he suggested that the conclusion that the RMESP may be equivalent to (or better than) BDT at a lower cost should be verified.

Response: Section 111(j) of the Clean Air Act provides that an owner or operator of an affected facility may request a waiver from one or more requirements of the standards to encourage the use of the innovative control system. Findings that the technology has not been demonstrated adequately and that it has either a substantial likelihood of achieving greater emission reduction than required by the NSPS or of achieving equivalent emission reduction at lower cost (including energy and nonair environmental costs) are necessary for an owner or operator to obtain an innovative technology waiver for other requirements of the standard. Once a waiver has been issued, its terms must include: (1) assurance that the source emissions will not prevent attainment and maintenance of national ambient air quality standards (NAAQS's); (2) assurance that the technology will function properly; (3) a time limit for testing the technology not to exceed 7 years from issuance, 4 years from startup, or until the technology proves unworkable; and (4) a restriction to that portion of the source on which the technology is used. The commenter is correct in noting that no data were available to quantify the performance, costs, and other impacts associated with the use of RMESP's. However, as indicated in the proposed rulemaking, there were qualitative indications that RMESP's have the potential to be at least as efficient as, and more cost effective than, capture

hoods ducted to a particulate collection device, which is the technology on which the numerical standard is based. Some of this qualitative information was obtained from RMESP's in Japan. Unfortunately, the Japanese companies using the RMESP's would not permit the quantitative evaluation of their control technologies.

The final rule in Subpart Na applying to visible emission opacity from roof monitors represents the minimum level of control for secondary emissions needed to comply and was based on data taken from plants with best demonstrated conventional technology. Because there may be an emission flow volume difference between the discharge of an RMESP and the discharge of the more conventional BDT secondary systems, it is not clear that RMESPs are necessarily equivalent to best technology. Therefore, during any required case-by-case reviews, RMESP design will also be considered.

Under the terms negotiated for any waiver granted, provisions would be included to ensure that any RMESP installed to comply with the NSPS would be designed and operated properly. Data collected during the term of the waiver would be used to verify RMESP performance and costs. Should the performance and costs be demonstrated as equivalent to or better than BDT, the inclusion of provisions specific to RMESP's would be considered during the next 4-year review of Subpart Na.

2.3.3 Comment: (IV-D-1 and IV-D-3) Two commenters pointed out that, while the proposed standards do not require the use of a specific technology to meet the proposed emission limits, a steel producer could experience difficulties in permit approval if the producer desired to implement a technology not examined or discussed in the preamble or BID for the proposed or promulgated rule. In this regard, both commenters pointed to fume suppression, a relatively new technology, which could provide the potential for eliminating or reducing the need for particulate capture techniques. One commenter stated that the cost to implement and operate this technology can be substantially less than other control alternatives, with fume suppression providing an equivalent performance. Accordingly, the commenters recommended that this technology be examined as a viable alternative control technique.

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Response: Before responding to the commenter's point, it is important to note that permit approval is not required for NSPS's. Any permit that would be required would be for State or local agencies. It is agreed that in such cases the source may need to provide a basis for concluding that compliance is probable. Data regarding fume suppression were not available when Volume I of the BID was being prepared. Since proposal, however, new information and data have been obtained to support further the conclusion that fume suppression systems may provide, at a lower cost, performance equivalent to that of other control alternatives (IV-B-4). Because the standards of performance for hot metal transfer stations are expressed as numerical emission limits, an owner or operator may choose to install a fume suppression system to control hot metal transfer emissions so long as it can achieve compliance with the numerical limit.

Suppression techniques reduce iron oxide fuming above molten metal or slag baths by inhibiting oxidation of the iron at the surface of the bath. Oxidation is inhibited by blanketing the bath surface with flame, steam, wet sand, or wet slag. To date, these techniques have been applied experimentally to: (1) blast furnace iron tapping, (2) blast furnace slag tapping, (3) open hearth tapping, (4) electric furnace tapping, (5) hot metal transfer, (6) BOPF charging, (7) BOPF tapping, and (8) BOPF lance hole emissions.

Preliminary data quantifying the performance of flame suppression on a BOPF hot metal transfer station at U.S. Steel's Gary plant indicate that opacity is reduced significantly with the use of flame suppression. These data are provided in Table 2-2. Thus, while these techniques are not yet demonstrated for other portions of the BOPF production cycle, it appears that flame suppression (one of the several fume suppression techniques) is capable of achieving emission reduction at least equal to requirements of the proposed regulation during hot metal transfer.

Moreover, because flame suppression eliminates the need for capture and control devices, emission reductions may be achieved at costs significantly below those of the BDT on which the standards are

TABLE 2-2. HOT METAL TRANSFER FLAME SUPPRESSION EVALUATION

	Percentage of total hot metal transfers observed			
	No. 1 BOPF shop		No. 2 BOPF shop	
Number of 15-second readings >20 percent opacity observed per hot metal transfer	Without flame suppression[a]	With flame suppression[b]	Without flame suppression[c]	With flame suppression[d]
0	54.3	96.0	68.3	89.2
1 to 5	11.4	4.0	15.1	5.6
6 to 10	14.3	0	8.6	5.2
11 to 15	11.4	0	4.3	0
16 to 20	5.7	0	2.6	0
>20	2.9	0	1.1	0

[a]Based on 70 hot metal transfers observed.
[b]Based on 50 hot metal transfers observed.
[c]Based on 65 hot metal transfers observed.
[d]Based on 85 hot metal transfers observed.

based. The cost effectiveness of fume suppression applied to hot metal transfer emissions is estimated at $633/ton of particulate matter removed. Depending on the control scenario applied, this can be compared to a cost effectiveness of $1,755/ton for a baghouse collecting furnace secondary and hot metal transfer emissions and $3,104-ton for a baghouse collecting only hot metal transfer emissions.

As described in the response to comment 2.3.2, for the purposes of this NSPS, an innovative technology waiver may be granted to an owner or operator desiring to install a fume suppression system to meet the standards.

Under the negotiated terms of an innovative technology waiver, the owner or operator would be granted an extended time period to meet the visible emission standard. Fume suppression systems are exempt from the mass and opacity emission limits for secondary emission control devices because use of the fume suppression technique eliminates

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the need for other capture and collection equipment. Provisions would be included in any waiver agreement to ensure that a fume suppression system installed to meet the NSPS would be designed and operated properly. Data collected during the term of the waiver would be used to document the performance and costs of fume suppression for particulate emission control. Should the performance and costs be equivalent to or better than BDT, the inclusion of provisions specific to fume suppression systems may be considered during the next 4-year review of Subpart Na.

The final standards also contain a definition for fume suppression systems. A fume suppression system is defined as "the equipment comprising any system used to inhibit the generation of emissions from steelmaking facilities by means of an inert gas, flame, or steam blanket applied to the surface of molten iron or steel."

2.3.4 Comment: (IV-D-2) One commenter questioned the estimated capture efficiency of 90 percent or more for auxiliary hooding and the application of this estimated capture efficiency to bottom-blown furnaces. He referred to tests conducted on the Republic Steel Q-BOP, stating that: (1) this furnace did not have an auxiliary hood for tapping, and the secondary control system demonstrated much less than 90 percent capture for tapping emissions; (2) at least seven mechanical failure incidents occurred during the test (bell damper problems); and (3) a capture effectiveness of 90 percent or more was demonstrated on occasion (emphasis added by commenter) for hot metal addition emissions. This commenter indicated that the preamble incorrectly implied (p. 2661) that 90 percent capture had been demonstrated on a continual basis at the time of the test program.

Response: The commenter's concern that 90 percent capture is not continually attained rests on his observations during testing at the Republic Steel Q-BOP. He correctly points out that the Republic facility has no tapping hood.

The last two sentences of the Federal Register notice paragraph to which the commenter refers are, "An enclosure with hoods located over the charging and tapping areas may achieve a capture effectiveness of 90 percent or better. This control system has been demonstrated

for both top and bottom blown furnaces" (emphasis added). The first sentence is meant to imply that there is a possibility rather than a probability of 90 percent capture given sufficient hooding. Because the Republic facility has no tapping hood, a capture efficiency of less than 90 percent would be expected. The last sentence of the paragraph is meant as a summarizing sentence for the entire paragraph rather than as a continuation of the preceding sentence. The selection of the Republic system as BDT for bottom-blown furnaces is further discussed in the response to comment 2.4.4.

2.3.5 Comment: (IV-D-2) One commenter, in referring to the preamble discussion of the capture efficiency of building evacuation systems (p. 2661), asked if the system discussed (the roof monitor evacuation system with baghouse controls at the No. 2 BOPF shop of Inland Steel, East Chicago) handles only a portion of the total shop emissions (i.e., those generated by the most recent furnace installation) or if it handles emissions from the entire building.

Response: The capture system in question is a partial building evacuation system applied only to the furnace charging aisle. A curtain wall is installed between the charging aisle and the furnace aisle to prevent substantial movement of charging emissions to the furnace aisle. The system is used in conjunction with local hoods within the furnace enclosure. Visual observation shows that the evacuation rate for this partial building evacuation system (130 acms or 275,000 acfm) is less than is required to prevent leakage from the enclosed portion of the building even with the assistance of the local hoods. For this reason, the Inland facility was not considered BDT for secondary emission control.

2.4 NUMERICAL EMISSION LIMITS

2.4.1 Comment (IV-D-2) One commenter asserted that the proposed mass emission standard for secondary emission collection devices (0.010 gr/dscf) did not reflect the performance of baghouses, which was selected as BDT for this application. The commenter argued that a properly designed, operated, and maintained baghouse controlling emissions from hot metal transfer, skimming, and other operations can achieve an outlet emission rate of 0.005 gr/dscf.

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Response: The numerical emission limit of 0.010 gr/dscf proposed for secondary emission collection devices is based on the data available at proposal. The data base for the emission limit, as proposed, includes data from hot metal transfer, partial building evacuation for BOPF's, and full-cycle data for electric arc furnaces (EAF's). Other operations that generate secondary BOPF emissions are not included in the data base. While the commenter correctly states that certain operations can be controlled to achieve an emission rate of 0.005 gr/dscf, control of all pertinent operations has not been demonstrated adequately at that level.

The data supporting the proposed standard do not support a lower limit. It is agreed that new data, coupled with the transfer of technology from EAF's, might support the lower limit recommended by the commenter. However, without the benefit of public comment and because it is not clear whether other data reflect technology different from the data on which the 0.010-gr/dscf limit is based, the final rules do not revise the standard for secondary emission collection devices. Revising the standard to reflect the higher performance level will be considered during the next 4-year review of Subparts N and Na.

2.4.2 Comment: (IV-D-2) One commenter believes the numerical emission limit for the proposed revision to the existing particulate standard for a closed hood furnace primary control device outlet should not be raised to 68 mg/dscm (0.030 gr/dscf). The commenter stated that two of three plants tested emitted particulates at or below the current standard of 50 mg/dscm (0.022 gr/dscf) and one plant was found to be just above the standard at 55 mg/dscm (0.024 gr/dscf). The commenter asked why the proposed standard was raised to 68 mg/dscm (0.030 gr/dscm) when the majority of the plants tested (two out of three) met the existing standard.

Response: Selection of numerical emission limits must take into account variability of control system performance and performance measurements. Without accounting for this variability, the plants using BDT, even those used as the basis for the standard, could frequently be found to be violating the standard. One means of taking

this variability into account is to use a statistical analysis approach. Statistical analysis was used to aid in the selection of the proposed revised standard, 68 mg/dscm (0.030 gr/dscf). The means and standard deviations of the three test averages were computed for comparison, after which an upper 95-percent prediction limit was computed based on the standard deviation computed for the 15 individual test runs. The numerical emission limit selected, 68 mg/dscm, was just above the upper 95-percent prediction limit, 66 mg/dscm. Although the proposed numerical limit is less stringent than the original, it nevertheless requires application of BDT.

Data presented in Table 4-12 of the BID suggest that a lower concentration limit for open hood furnaces may be possible. These data show performance levels better than performance measured during testing to support the existing NSPS limit of 50 mg/dscm (0.022 gr/dscf). Determination of the equipment design, operating criteria, and process variables responsible for producing lower emission concentrations from the open hood furnaces will be examined during the next 4-year NSPS review for consideration of a change in the concentration limit.

2.4.3 Comment: (IV-D-1) One commenter pointed to unique problems with Q-BOP's (bottom-blown furnaces) when certain grades of metallurgical steel are made. Oxygen blowing as the vessel is turned down is required for these types of steel, which results in emissions even greater than during nitrogen blowing during typical vessel turndown. For this reason, the commenter recommended that this issue be addressed and that increased opacity limits for Q-BOP's be allowed when metallurgical grades of steel that require oxygen blowing during vessel turndown are made.

Response: The issue raised by the commenter, although not specifically mentioned in the BID, was addressed during testing of the Republic Steel Q-BOP system. Metallurgical steels with oxygen blowing during turndown were made during some of the heats made during the test periods. The opacity readings from these heats have been summarized in the BID and have been considered part of the data base used to propose the opacity limit for bottom-blown vessels. The impact of oxygen blowing during turndown was adequately considered during analysis

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of this data base. The Republic system as the basis of the proposed Q-BOP standard is further discussed in the response to the following comment.

2.4.4 Comment: (IV-D-2) One commenter criticized the selection of the proposed opacity limits for Q-BOP (bottom-blown) vessels. This commenter stated that the proposed 60-percent opacity limit does not reflect BDT because the Republic Steel Q-BOP system (upon which the proposed emission limit is based) is inadequate for the following reasons: (1) failure of the system to achieve 90 percent capture effectiveness consistently during the testing program because of secondary emission control system mechanical (bell damper) failures; (2) poor design; and (3) poor maintenance. Rather, he recommended a bottom-blown regulatory alternative consisting of an enclosure with local hot metal addition (HMA) and tapping hoods exhausted to a baghouse (or equivalent device) that can handle 600,000 acfm or the gas volumes handled by the Bethlehem and J&L plants.

Response: The opacity limit proposed for bottom-blown vessels was consistent with data for bottom-blown furnaces that were available at proposal. The effect of the commenter's recommendation would be the establishment of an emission limit at a level that has not been observed in practice for bottom-blown furnaces. It is agreed that the performance of controls on other sources, such as top-blown furnaces, suggests that better performance should be achievable for bottom-blown furnaces and raises doubt as to whether the proposed limits reflect the performance of BDT. The commenter also correctly implied that capture and control of emissions from these vessels have not been demonstrated at a level consistent with top-blown vessels. A more stringent limit based on transfer of technology was not considered warranted in the case of bottom-blown vessels because of the wide range of conditions under which the vessels operate and the correspondingly wide range of emissions from the vessels (see the preceding comment and response as an example).

Based on this comment and further review, it has been determined that better control will likely become available before the next 4-year review of the primary and secondary standards, and that the

proposed opacity standard, if promulgated, would probably not reflect BDT. In particular, it should be noted that revised State opacity regulations adopted pursuant to the requirements of 40 CFR Part 52 are much more stringent than the proposed standard. Because of these findings, the proposed roof-monitor opacity limit for bottom-blown vessels is being withdrawn from the final rules.

The requirement for limiting the opacity of visible emissions produced by hot metal transfer and skimming in bottom-blown furnace shops, however, is being retained. There are no significant process differences between hot metal transfer and skimming in bottom-blown furnace shops as opposed to top-blown furnace shops. Likewise, equipment used to perform these processes is not necessarily different in bottom-blown versus top-blown shops. Therefore, there is no reason to believe that any significant difference should exist in emission potential, either controlled or uncontrolled. For the above reasons, the roof monitor opacity limit for hot metal transfer and skimming in top-blown furnace shops is extended to apply to hot metal transfer and skimming in bottom-blown furnace shops. The provisions of Subpart Na, §60.145a, allow the owner or operator of an affected facility to suspend shop operations not subject to Subpart Na during compliance testing. These provisions are a means of avoiding interference from bottom-blown furnace emissions during compliance testing of hot metal transfer and skimming operations. By similar reasoning, the proposed concentration and opacity standards for secondary emission collection devices in bottom-blown furnace shops also are retained.

2.5 VISIBLE EMISSION STANDARDS

2.5.1 Comment: (IV-D-3, IV-D-4) Two commenters opposed a provision of the proposed standards [at §60.144a(b)(3)] that changes the way Method 9 visible emission data from BOPF shops are analyzed. The commenters noted that Method 9 requires an opacity value to consist of the average of 24 consecutive visible emission observations taken at 15-second intervals and that the proposed standards alter this requirement to produce an opacity value based on an average of 12 consecutive visible emission observations.

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Both commenters contended that the public was not afforded sufficient opportunity to comment on the proposed changes. One commenter concluded that the changes constitute ad hoc rulemaking and noted that such procedures have been invalidated by Donner Hanna Coke Corp. v. Costle, 464 F. Supp. 1295 (W.D.N.Y. 1979). The commenter believes that "The 'Donner Hanna' Court decision clearly demonstrates that the test method used to evaluate compliance with a regulation is as important as the regulation itself. Merely specifying the test method is not enough when the accuracy and precision of the method are unknown in the prescribed application."

The commenters also believe that the proposed 3-minute average contradicts previously articulated policy about how Method 9 should be used. In support of this, one commenter noted that "In previous instances, EPA has suggested that there is no known basis for altering the procedures and methodology established under Method 9. For example, on November 24, 1982, while reconsidering the Illinois State implementation plan (SIP), the Administrator stated:

> 'There is no means, using Method 9, to account for plumes less than 6 minutes in duration (noncontinuous). There is also no means, using the averaging techniques of Method 9, to account for exemption periods other than 6 minutes or for aggregation of any duration. (47 FR 5300, 5302).'"

The second commenter noted that "In the past, EPA has recognized that [Method 9] cannot be used for intermittent non-stack sources."

Response: Examining first the question of whether the public has had opportunity to comment on the proposed changes, we conclude that both the general public and steelmaking facilities with BOPF's have had ample opportunity to participate in and comment on the proposed changes. Prior to proposal, representatives of public interest groups and steel companies were provided several opportunities to comment on the 3-minute average. For example, the 3-minute average was discussed at the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) meetings of December 2-3, 1980, and September 22-23, 1981 (II-C-24, II-E-23). The 3-minute average was also discussed at two meetings held with representatives of the American Iron and Steel Institute (AISI) November 12, 1980 (II-E-15), and September 17, 1981

(II-E-25). Review drafts were specifically provided to AISI for distribution to member companies September 4, 1981 (II-C-40), and November 12, 1981 (II-C-42). In no case were written comments provided by industry representatives or other interested parties prior to proposal. At proposal, the preamble to the regulations discussed testing and data reduction procedures used to establish the visible emission standards and the procedures that would be followed to determine compliance (48 FR 2662). Comments received on these procedures are being taken into account in this rulemaking.

In addition to the information provided in the forums noted above, an analysis of the effects of the proposed changes on the scientific reliability of Method 9 was included in the docket that accompanied the proposed rule (II-B-92). The information in this analysis demonstrates that the precision and accuracy of the proposed changes to the Method 9 data reduction procedure for visible emission observations of BOPF's are equivalent to the precision and accuracy in the current Method. (This analysis is discussed in detail in the response to comment 2.5.2.) Moreover, no new data or information on the visible emission standards that contradicts the findings of our analysis was included with the public comments. Therefore, the public has been provided sufficient opportunity to comment on the proposed performance testing and data analysis procedures.

We note that in citing the Illinois SIP reconsideration, the commenter suggested that statements about the use of Method 9 in its present form should limit how the Method might be modified. This suggestion, however, is without merit. Rather, the validity of modifications to standards and test methods (and the relationship between these) set forth in 40 CFR 60 must be evaluated and must be supported on their own merits.

As to the question of whether Reference Method 9 can be used for intermittent nonstack sources, it should be noted that since its promulgation December 23, 1971 (36 FR 24895), Method 9 has been amended to observe visible emissions from both control device exhaust stacks and nonstack sources (39 FR 39872, November 12, 1974). (See, for example, Subparts AA and BB.) Indeed, the Method, at paragraph 2.1,

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specifically includes procedures to be used in determining visible emissions from nonstack sources such as roof monitors. Often, both control devices and nonstack sources such as roof monitors intermittently emit plumes of varying opacity; i.e., visible emissions vary with process or control device operation and are observed only during part of the time the emission source is operating. Reference Method 9 can be applied accurately to both categories of emission points by following the procedures of paragraph 2.1 and by recording visible emission observations of zero percent opacity when no visible emissions are evident.

The passage from Method 9 cited by the Court in Donner Hanna does not state that Method 9 is inappropriate for characterizing visible emissions from all points of intermittent emissions:

> EPA recognizes that certain types of opacity violations that are intermittent in nature require a different approach in applying the opacity standards. . . . (39 FR 39873)

The passage cited by the Court indicates that Method 9 (with the 6-minute averaging technique) may not characterize the performance of capture or control technologies adequately in certain cases. This can be illustrated by the hypothetical example of a source that exhibits zero opacity for 23 out of 24 readings and 25 percent on the 24th reading. On a 6-minute average basis, the opacity would be calculated as 1 percent. On a 15-second basis, opacity would simply be 23 periods of zero and 1 period of 25 percent. It is obvious that this latter method of presenting the visible emission data is much more descriptive of the emission characteristics in this case than is the 6-minute 1-percent opacity average. In the broader context, this hypothetical example illustrates how shorter averaging periods more accurately reflect the character of short-duration plumes. (It also shows how general opacity standards that are commonly used in SIP's do not account for plumes of short duration.) For this reason, a shorter averaging time and a higher numerical visible emission standard were proposed for BOPF's. A 6-minute averaging period could have been selected to analyze BOPF visible emission data. If this option had

been selected and implemented, the numerical level of the standard would have been about one-half the numerical level proposed in conjunction with the 3-minute averaging period. However, BOPF secondary emissions are typically of short duration, and a 3-minute averaging period more closely characterizes the performance of the capture systems used to control the emissions than a 6-minute averaging period.

Finally, it is agreed that the test method used to determine compliance with a standard is very important in establishing the stringency or effect of a standard. For this reason, the basis for the standard, including not only the data base but also both the test method used to develop the data base and the test method used for compliance, must be considered in establishing a standard. This is discussed further in response to comment 2.5.2.

In conclusion, it is noteworthy that this proposed rulemaking does not affect Method 9 data reduction procedures or application of Method 9 to all sources regulated in 40 CFR Part 60. Rather, it only establishes procedures for BOPF's that commence construction, modification, or reconstruction after January 20, 1983. Use of a 3-minute average was proposed in paragraph 2.5, "Test Methods and Procedures" in Subpart Na, rather than as amendments to Reference Method 9. This was done because 3-minute average opacity values are considered appropriate for and are intended to be applicable only for BOPF shop emissions. In this way, Method 9 as it applies to other sources is not affected by this rulemaking. This approach is consistent with the intended use of the test methods in Appendix A (40 CFR Part 60). The intent is detailed in the introduction to Appendix A, which states, in part:

> Within each standard of performance, a section titled 'Test Methods and Procedures' is provided to (1) identify the test methods applicable to the facility subject to the respective standard and (2) identify any special instructions or conditions to be followed when applying a method to the respective facility. Such instructions . . . are to be used either in addition to, or as a substitute for, procedures in a reference method.

Therefore, it is appropriate to alter--after analysis and public comment--the data reduction procedures for BOPF visible emission observations within the provisions of Subpart Na.

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2.5.2 Comment: (IV-D-1, IV-D-3, IV-D-4, and IV-D-5) Several commenters questioned the scientific reliability of the proposed 3-minute averages for Reference Method 9 opacity computations of visible emissions from BOPF's. The commenters contended that the modified averaging procedure will produce average opacity values that are less accurate and more subject to error than the 6-minute opacity values. The commenters stated that the proposed secondary standards require the improper use of Reference Method 9 for observing roof monitor visible emissions because the method was promulgated originally for observation of stacks, with specified data reduction procedures for 6-minute averages. The commenters stated that quantitative conclusions regarding the accuracy of the method were valid only for emissions from stacks. One commenter also maintained that modifications to Method 9 should be thoroughly evaluated to determine the accuracy and precision of any deviations and recommended that Method 9, unmodified, be used for the proposed regulation or that the proposed roof monitor opacity standard be deleted until an appropriate method is developed. One commenter further asserted that the proposed changes are not supported by any analysis of the effects of the changes on the scientific reliability of Method 9.

Response: We share the commenters' concerns that knowledge of the precision and accuracy of a test method--and consideration of these factors for the public record--is important in developing and enforcing standards. Prior to responding to these concerns, it is appropriate to review the general procedure followed to establish a standard of performance and to understand the role of the test method to establish and determine compliance with the standard. Typically, a standard is expressed as a numerical emission limit that quantifies the performance of BDT for emission control. A data base is gathered to establish an emission limit that is achievable for the emission source being regulated. The data base is obtained with either an existing or new test method that has been devised for the pollutant and source being regulated. If the method used to develop the data base differs from the method that would be used to determine compliance,

the mathematical relationship between these methods must be known. In either case, the test method is proposed and promulgated according to the procedures outlined in §307(d) of the Clean Air Act as amended and is found either in Appendix A or in the subparts of 40 CFR Part 60. In the proposed and final standards, the accuracy and precision of the test method are documented and considered carefully.

When the visible emission standards were developed for BOPF's, a large number of visible emission observations were gathered according to the procedures of Reference Method 9. These data, which consist of more than 100 hours of observations, indicate that plumes from the roof monitors of BOPF shops are of short duration and that the performance of BDT for controlling these emissions is best characterized with an average opacity value based on a shorter, 3-minute averaging period instead of the 6-minute averaging period specified in the data reduction procedures contained in paragraph 2.5 of the reference method.

Therefore, a visible emission standard was proposed that would be based on the BOPF visible emission data base and on average opacity values calculated from 12 consecutive 15-second visible emission observations recorded by following the procedures of Reference Method 9. The proposed and final performance test procedures are also based on observing and recording visible emissions with Reference Method 9 and on calculating a 3-minute opacity average from the visible emission data.

Before 3-minute rather than 6-minute averages were proposed, the question of whether 3-minute averages are less accurate or precise than 6-minute averages was addressed. (Note that the accuracy and precision of 6-minute averages have been established and are not an issue here.) This involved analyzing and comparing the frequency of occurrence of differences between Method 9 observations (observer mean) and mean values calculated from transmissometer readings (instrument mean) for both 3- and 6-minute averaging periods. This analysis, which was included in the docket prior to proposal (II-B-92), is based on a July 1976 report that also was included in the docket prior to proposal (II-A-22). The results of this analysis are summarized in Table 2-3.

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TABLE 2-3. OBSERVER ERROR FOR 3-MINUTE AND 6-MINUTE OPACITY AVERAGING[a] (percent of total observations)

Source	3-minute average, Opacity range, %			6-minute average, Opacity range, %		
	0 - 5	5 - 10	10 - 15	0 - 5	5 - 10	10 - 15
Smoke generator, black smoke	36.5	1.9	0.0	35.3	0.8	0.0
Smoke generator, white smoke	36.0	8.0	0.3	31.8	7.1	0.0
Riverbend Steam Station	41.7	5.2	1.0	43.8	4.2	1.0

[a]Observer error is defined as deviation of observed average opacity from reference (transmissometer) average opacity.

SOURCE: "Examining the Properties of Qualified Observer Opacity Readings Averaged over Intervals of Less than Six Minutes," Research Triangle Institute, July 1976 (II-A-22).

The results are reported as the percentage of the total number of measurements that fall within a particular range of observer error. For example, 36.5 percent of the total number of 3-minute averages calculated for the smoke generator black smoke had an observer error of between 0 and 5 percent opacity. Note that only positive errors are reported in the table. Examination of this table reveals that the distribution of errors for 3-minute averaging is about the same as for 6-minute averaging (e.g., for generator black smoke, 36.5 percent of the calculated 3-minute averages had an observer error of 0 to 5 percent opacity as compared to 35.3 percent of the calculated 6-minute averages). Thus, the average opacities calculated on a 3-minute basis are no more subject to error than the average opacities calculated on a 6-minute basis.

With regard to the applicability of Method 9 to plumes from both stacks and roof monitors, a review of opacity theory demonstrates that quantitative conclusions about the accuracy and precision are equally valid for each.

The major factors influencing plume opacity are: particle characteristics (particle size distribution, particle density, and refractive index), particulate concentration, the background against which the emissions are viewed, the observer's position relative to the sun, and the light path length through the emission plume. Particle characteristics and particulate concentration are determined by the process operation and the emission control technology. In the steel industry, plumes are released at elevated points such as stacks and roof monitors. As a result, the background for reading the opacity of visible emissions is the same for both types of sources, generally consisting of sky, horizon, or other structures. Thus, the ability to read opacity of visible emissions from roof monitors compared to the ability to read visible emissions from stacks is not influenced by background.

While the geometry of stacks and roof monitors does differ, Reference Method 9 explicitly accounts for opacity readings from roof monitors. Stacks are generally circular and, as a result, the path length through the plume is essentially the same in all directions. Roof monitors tend to be rectangular with a long and short dimension. The light path length through the plume is different depending on whether the observer sights along the long dimension or the short dimension. When the opacity of visible emissions from roof monitors is read, paragraph 2.1 of Reference Method 9 specifically requires that observations be taken approximately perpendicular to the long dimension of the roof monitor (i.e., across the short dimension of the plume), which ensures that observed opacity is minimized. When the visible emission standards for BOPF's were developed, visible emission observations were taken from existing furnace shops with typical roof monitor designs. We have no data or other information that indicates that future roof monitor designs would be modified to cause plume path length, and thus observed opacity, to increase. Thus, the effect of path length on opacity was taken into account during development of the standards, and paragraph 2.1 of Reference Method 9 ensures that compliance with the standards is determined by reading plumes across the shorter path length.

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The position of the visible emission observer with respect to the sun and the plume does affect perceived opacity due to the light-scattering effects of plumes. However, this light-scattering interference is nullified as the observer is positioned with his back to the sun as described in paragraph 2.1 of the Reference Method. This paragraph provides explicit instructions that position the observer with respect to both stacks and rectangular openings such as roof monitors. Thus, the effect of position on opacity is taken into account during development of visible emission standards.

The ability to read the opacity of visible emissions, therefore, does not depend on whether these emissions are released from stacks or roof monitors. Reference Method 9 is as applicable to plumes from roof monitors as it is to plumes from stacks.

After proposal of Subpart Na, statistical analyses of visible emission observations recently taken from roof monitors and stacks were performed to validate this conclusion further. These analyses are summarized in a memorandum entitled "Opacity Error for Different Averaging Times" (IV-B-6), which reports the results of statistical analyses of visible emissions from fugitive emission sources. The fugitive emission data were obtained mostly from iron and steel sources with BOPF shops and roof monitors being major contributors to the data base.

One statistical analysis examined the precision of observations of the opacity of a fugitive emission plume made simultaneously by two visible emission observers. For average opacity values calculated with a 6-minute averaging period, the standard deviation was 2.1 percent opacity with 93 percent of the runs having a difference between observer readings less than or equal to 7.5 percent opacity. For average opacity values calculated with a 3-minute averaging period, the standard deviation was essentially the same--2.4 percent opacity with 92 percent of the runs having a difference between observer readings less than or equal to 7.5 percent opacity. This analysis of visible emission observations of fugitive emissions therefore supports the conclusion that between-observer precision is the same for average opacity values calculated with 3- and 6-minute averaging periods.

Table 2-4, taken from the same memorandum, can be used to compare the between-observer precision of fugitive emission observations with that of stack emission observations. The stack standard deviations range from 4.3 to 9.8 percent for 3- and 6-minute averages compared to the 2.1 percent and 2.4 percent reported above for the fugitive sources. Thus, it is concluded that the variability between observers in reading opacity from roof monitors is similar to that between observers reading opacity from stacks.

TABLE 2-4. STANDARD DEVIATION OF ERROR (BETWEEN-OBSERVER PRECISION) FOR DIFFERENT AVERAGING TIMES (BY LOCATION AND SMOKE COLOR)

Averaging time	Error standard deviation (percent opacity)						
	Riverbend[a]	Florida 1[b]		Florida 2[c]		RTP[d]	
	White	Black	White	Black	White	Black	White
6 minutes	5.0	6.7	6.5	9.3	6.4	4.3	5.9
3 minutes	5.1	6.8	6.8	9.8	7.0	4.7	6.2

[a]Fossil-fuel-fired electric utility.

[b]Smoke generator--continuous plume.

[c]Smoke generator--slowly changing plume.

[d]Smoke generator--rapidly changing plume.

SOURCE: "Memorandum, P. Piserchia and J. Crowder, Research Triangle Institute, to K. Foster and B. Burton, EPA:SSCD, September 8, 1983, Opacity Error for Different Averaging Times. (IV-B-6).

In summary then, analyses performed both before and after proposal of the visible emission standard demonstrate the scientific reliability of the 3-minute averageing technique. These analyses show that average opacities calculated on a 3-minute basis are no more subject to error than opacities calculated on a 6-minute basis. Therefore, the 3-minute averaging technique is retained in the final standards.

2.5.3 Comment: (IV-D-1 and IV-D-4) Two commenters recommended the inclusion of alternative mass emission limits in the proposed standard

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for roof monitors as allowed under 40 CFR 60.11(e). One commenter stated that a recently published procedure would allow measurement of mass particulate emissions from roof monitors. It was recommended that if process fugitive emissions fail to meet visible emission limits, the source should be allowed, as an alternative, to comply with measured mass emission rate estimates on which the visible emission limit is based. However, the second commenter pointed out that the option available under 40 CFR 60.11(e) is not available to BOPF shop roof emissions because the standards do not contain mass emission limits or a means for allowing the exemption.

This commenter believes that the need for such an exemption is recognized by the EPA:

> In the preamble of the proposal (p. 2666), EPA states that "Because of wide differences in operating procedures, such as the length of the steel production cycle, control technologies, vessel capacities, and other operating parameters between BOPF shops, a single emission rate that is uniformly applicable to the industry or a specific type of vessel is not practicable." This same difference applies to visible emissions and highlights the need for alternative limits.

Response: Measurements of mass emission rates from roof monitors have been performed and reported in published technical literature on several occasions. However, research to verify the accuracy and precision of a test method based on this concept would be necessary and costly. In contrast, as discussed in the response to comment 2.5.2, the use of Reference Method 9 to determine the opacity of fugitive particulate matter emissions is accurate, reliable, and relatively simple for ensuring not only the installation of BDT, but also the proper operation and maintenance of BDT.

Turning now to the comment about alternative opacity provisions of §60.11(e), the commenter is correct in noting that they do not apply to visible emission standards for BOPF's. In this instance and similar instances in other NSPS's, the standard of performance is expressed in terms of opacity without an accompanying mass emission standard. In these instances, the visible emission standard is adequate to ensure that BDT is installed and properly operated and maintained.

Section 60.11(e) applies to, and was intended to cover, situations where both mass and visible emission standards are needed to characterize the performance of BDT. In these situations, the mass emission standards are, in effect, the primary standards used to quantify the performance of BDT. The visible emission standards in these situations are established to provide a timely and inexpensive procedure to ensure that BDT is properly operated and maintained. Thus, in these situations, visible emission standards are established at a numerical level that is no more stringent than their associated mass emission standards. Section 60.11(e) was established to achieve this intent by providing a means through which a source may obtain a higher ad hoc visible emission standard when the source demonstrates compliance with the mass emission standard but is not in compliance with the visible emission standard.

In summary, the visible emission standards for BOPF's are adequate to reflect performance of BDT. Thus, for these standards--as with other single performance standards (e.g., SO_2, NO_x)--there is no basis for allowing case-by-case relaxations of the standards.

2.5.4 Comment: (IV-D-2) One commenter suggested that visible emission data presented under "Emission Testing" for Bethlehem Steel Corporation, Kaiser Steel Company, and J&L Steel Corporation may be misleadingly high because of the contributions from ancillary operations.

Response: The purpose of the roof monitor visible emissions standard is to ensure proper operation and maintenance of devices used to capture fugitive emissions from charging, tapping, hot metal transfer, hot metal skimming, and furnace operations. The data collected in support of the proposed standards were based on combined emissions escaping capture from the above sources and ancillary operations such as ladle repair, skull burning, and teeming that occurred randomly during the test program. However, the contribution of these ancillary operation emissions to observed roof monitor opacity was minimal. The reason that visible emissions from nonaffected facilities were included is that it is difficult during normal shop operations to isolate the affected facilities from nonaffected facilities. However, the intention

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is not to regulate existing facilities by this means. This is evident from the provisions of §60.145a of the final rules, which permit shop operations not subject to Subpart Na to be suspended during compliance testing (for both mass and visible emissions).

As noted in the proposed rulemaking (p. 2668), Method 9 readings were taken for top-blown furnaces during the operation of these unaffected facilities. Because the visible emission standard is based on these data, compliance can be demonstrated while these operations continue. This permits compliance testing without the disruption of normal shop operations. However, the regulation does permit the shutdown of unaffected operations so that compliance can be based only on emissions from affected operations.

2.6 EMISSION TESTING AND MONITORING

2.6.1 Comment: (IV-D-4) One commenter stated that the reduced testing time for top-blown BOPF primary emissions is a strong disincentive for owners to modernize existing top-blown BOPF equipment because, then, the existing gas-cleaning device may also have to be improved. The commenter also noted that effects of primary gas-cleaning system operating parameter modification on secondary emissions were not addressed. The commenter recommended that the primary emission standard for top-blown BOPF's specified in §60.144(b)(2) be limited to newly constructed furnaces and that the effects of primary gas-cleaning system changes on secondary emissions be addressed.

Response: The intent is not to discourage the modernization of existing BOPF equipment. Modernization taking the form of modifications not increasing total particulate emissions and not exceeding the reconstruction fixed capital cost limitation of 40 CFR 60.15 may be made without subjecting the facility to the requirements of §60.144(b)(2); 40 CFR 60.14(e) also lists some physical or operational changes that are not considered modifications, irrespective of any changes in the emission rates. Beyond this, however, the intent of Section 111 is to require new, modified, or reconstructed facilities to apply BDT.

The commenter's assertion that changes in the primary control system operating parameters may affect secondary emissions is correct.

Fugitive emissions from furnace operations, not captured by the primary hood, may increase or decrease depending on the changes in primary control device operating parameters. However, the modification or reconstruction that makes the facility subject to §60.144(b)(2) also causes the facility to be subject to Subpart Na for control of secondary emissions. Compliance with both provisions of the regulation may be achieved in a number of ways, some of which do not require changes in the primary system operating parameters that would adversely affect secondary furnace emissions. It is up to the owner or operator of the facility to select the most economical means of achieving compliance for the particular situation.

2.6.2 Comment: (IV-D-2) One commenter cited §60.144(b)(1) of the primary standard, which states, "A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately prior to tapping." The commenter believes a contradiction exists between this section and a statement under "Review of the Primary Standard" that says reblows would not be considered part of the primary oxygen blow under the proposed revision. He also indicated that the minimum sample volume of 32 dscf for §§60.144(b)(1) and (2) proposed for the primary standard (Subpart N) is too small and recommended a minimum volume of 60 dscf.

Response: The paragraph on page 2669 of the Federal Register proposal notice referring to reblows not being considered part of the primary oxygen blow refers to the proposed revisions to existing Subpart N for primary emissions from BOPF's. It is the intent that the revisions discussed under "Review of the Primary Standard," which require mass testing only during the primary blow, apply only to facilities that commence construction, modifications, or reconstruction after January 20, 1983, as stated in §60.144(b)(2). Affected facilities commencing construction, modifications, or reconstruction on or before January 20, 1983, must sample in accordance with the provisions as described in §60.144(b)(1), which require testing during the steel production cycle, including reblows. Therefore, no contradiction exists.

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As a result of a review of the proposed minimum sample volume specified in §60.144(b)(1) and 60.144(b)(2) of the primary standard, the required minimum sample volume has been increased from 0.9 dscm (32 dscf) to 1.5 dscm (53 dscf). The minimum sample volume was revised to provide an allowance for a 50-mg particulate catch on the sampling train filter, taking into account collection of particulate matter in the nozzle and on the walls of the sampling probe. This increase in minimum sample volume is needed to maintain test precision. The minimum sample volume was not increased to 60 dscf because 1.5 dscm (53 dscf) was judged to be sufficient to provide the 50-mg particulate catch without unnecessarily increasing the test length and the cost of performance testing. These revised sample volume requirements are applicable to facilities constructed, modified, or reconstructed after January 20, 1983, and to existing affected facilities subject to Subpart N (i.e., those BOPF's constructed, modified, or reconstructed after June 11, 1973, but on or before January 20, 1983). As proposed, shorter sampling times and smaller sample volumes would be allowed, subject to approval by the Administrator, when necessitated by process variables or other factors.

2.6.3 Comment: (IV-D-2) One commenter suggested that performance tests for secondary mass emission limitations should be performed only during portions of the production cycle that include a specific secondary emission activity; e.g., hot metal charging. The commenter stated that inclusion of other low-emitting portions of the production cycle, such as scrap charge, dilutes the sample. To accommodate his suggested change, the commenter recommended the use of a high-volume Method 5 sampler to compensate for the difficulty of obtaining sufficient sample from operations of such short durations. If high-volume Method 5 samplers are not required, the commenter recommended that the minimum sampling volume be increased from 80 dscf to 160 dscf to minimize sample recovery errors and to maintain reasonable precision from test to test.

Response: The possibility of sampling the secondary emission controls system only during the occurrence of high-emission operations,

such as hot metal charging, tapping, and hot metal transfer, was considered during the development of the proposed standard. However, most of the test data available on particulate concentrations at the outlet from fabric filters serving secondary emission sources were not obtained in this manner, but rather by sampling over both high- and low-emitting portions of the cycle.

Because the secondary emission operations of hot metal transfer and skimming may occur independently of furnace operations and be ducted to the same secondary control device, limiting emission testing to just the typically high-emitting secondary operations unnecessarily complicates the performance tests. For both of these reasons, sampling was proposed over the entire steel production cycle. Because it is believed that sampling over the entire steel production cycle is appropriate, no further consideration was given to the use of high-volume Method 5 sampling trains. However, the minimum required sampling volume for each sample run has been increased from 2.27 dscm (80 dscf) to 5.67 dscm (200 dscf). This change has been made to ensure that adequate particulate matter is sampled to maintain test precision. A new provision was also added to the final rules, which allows shorter sampling times and lower sample volumes when necessitated by process variables or other factors, subject to approval by the Administrator.

In regard to Method 5, it should be recognized that a new Method 5d was proposed recently for use with positive-pressure baghouses (48 FR 37354, August 17, 1983). Although the final standards cannot require the use of Method 5d until the Method is promulgated, owners and operators of positive-pressure baghouses may choose to take advantage of §60.13(i) of the NSPS General Provisions, which allows the use of alternative test methods.

2.6.4 Comment: (IV-D-2) One commenter stated that if it is agreed that emissions from the secondary control device should be sampled only during high-emitting portions of the production cycle, EPA Reference Method 2 should be revised. The basis for this comment is that velocity readings provided by noncontinuous sampling would not yield accurate flow rate data. The commenter believes that accurate flow

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rate data, while not essential to the proposed concentration standard, will be necessary to calculate emission rates for State or local agency standards. The commenter also recommended a continuous flow rate monitoring device to assist in determination of mass emission rates.

Response: For the reasons stated in the response to the previous comment, disagreement exists concerning the commenter's view that secondary emission sampling should be conducted only during high-emitting portions of the steel production cycle. It is believed that velocity readings obtained continuously during Method 5 sampling will provide an adequate basis for estimating the mass emission rate from the secondary control device over the entire production cycle. The proposed regulation would not preclude State or local agencies from adopting their own requirements for flow rate measurements needed to determine compliance with their emission standards.

The monitoring provisions of §60.143a require the owner or operator to install a monitoring device or devices to continually monitor and record the various rates or levels of exhaust ventilation through each duct of the secondary emission control system for each phase of each steel production cycle. The monitoring and recording of ventilation rates or levels will ensure proper operation and maintenance of the secondary emission capture system. Other revisions made to the monitoring requirements since proposal are discussed in the response to comment 2.7.3. The commenter's suggestion that the continuous flow rate monitor can be used to determine volumetric flow rate during a stack test and subsequent calculation of mass emission rate may be useful to State or local agencies with mass emission rates rather than concentration standards.

2.6.5 Comment: (IV-D-2) One commenter agreed that process monitoring should be required during all compliance testing but believed a list of process variables and control device variables that could affect the results of a test should be included for use during testing.

Response: We agree that such a list would be helpful to monitor the process and control device operations properly during performance

testing. However, the variety of emission control system designs and the variation of process equipment and operations in plants make the development of a universally applicable and comprehensive list a difficult task. Furthermore, the use of a universally applicable list suggests that information may be requested from a plant that will not be useful in its specific case, therefore increasing the associated testing burden for the owner or operator of this facility. For these reasons, it was decided not to publish a list of recommended or required process and control device variables to be monitored.

2.6.6 Comment: (IV-D-2) One commenter suggested that the steel production cycle should not be used to characterize BOPF secondary visible emissions from hot metal charging, tapping, hot metal transfer, and skimming. The commenter suggested using those individual operations as the basis for characterization. He stated that this would provide more realistic data on the effectiveness of controls for these specific operations, rather than the visible emission effects of unregulated ancillary operations.

Response: In the initial analyses of roof monitor visible emission test data, the characterization of the data on the individual operation basis was considered, as suggested by the commenters. Other approaches to characterizing the data were considered as well. Use of the steel production cycle as the basis for characterization was selected for two reasons. One reason was that the secondary emission control systems may be used to control emissions from several secondary sources, especially in newer plants when closed hood primary control systems are selected. With such a secondary system, several secondary process operations may occur simultaneously, sometimes related to two furnace vessels, hampering the effort to obtain visible emission data for separate secondary emission processes. The second reason was that roof monitor visible emissions lag behind the actual process operation that generates them. Determining when to cease observations because all emissions from the particular secondary operations have left the roof monitor is difficult. The fact that five potential secondary emission sources exist, including puffing emissions escaping the

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primary hood, compounds this problem. Using the steel production cycle to characterize these secondary emissions minimizes or eliminates the above difficulties.

The commenter's point about the effect of unregulated ancillary operations on observed secondary visible emissons from regulated sources is addressed in the response to comment 2.5.4.

2.7 EQUIPMENT, DESIGN, AND OPERATING SPECIFICATIONS

2.7.1 Comment: (IV-D-2) One commenter agreed with the preamble (p. 2661) that the use of operating practices conducive to lesser fume generation is very important in reducing secondary emissions. These practices include the use of clean scrap, slow pouring techniques, careful positioning of the hot metal ladle, and proper furnace tilt angle. However, this commenter questioned why these practices are not required by the proposed standards to ensure successful secondary emissions control.

Response: Section 111(h)(1) of the Clean Air Act provides that, "If in the judgment of the Administrator, it is not feasible to prescribe or enforce a standard of performance, he may instead promulgate a design, equipment, work practice, or operational standard, or combination thereof, which reflects the best technological system of continuous emission reduction that (considering the cost of achieving such emission reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated . . . ."

The phrase "not feasible to prescribe or enforce" means "any situation in which the Administrator determines that (A) a pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or (B) the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations" [111(h)(1)-(2)].

As explained at 48 FR 2658, the proposed standards of performance were based on BDT for BOPF's and hot metal transfer and skimming

stations. For secondary emissions from a top-blown furnace, the open hood primary emission control system that also controls secondary emissions was selected as BDT. For hot metal transfer and skimming stations, local hooding ducted to a baghouse was selected as BDT.

For each affected facility, particulate matter can be captured via the primary or secondary hood. Measurement methodology (Reference Method 5) is available to ascertain the concentration of particulate matter at the outlet of the collection device. Because it is feasible to prescribe and enforce a standard of performance for this source category, an emission limit format was selected for BOPF collection devices in lieu of specifying work practice or equipment, design, and operational requirements. Opacity limits are also included as a supplement to the concentration limits because visible emissions act as a good indicator of the secondary emission control system performance and as an indicator of proper operation and maintenance of the device.

While it is true that the application of these practices is conducive to lesser fume generation, the total impact of these practices on resulting emission reductions for all types of BOPF's is not clear. Many of the work practices were observed at the J&L/Aliquippa and Bethlehem/Bethlehem shops, both of which use a primary hood to control secondary emissions from top-blown furnaces. Application of these practices appeared beneficial in secondary emission control for these systems. However, it is not clear that these practices resulted in a significant impact on secondary emission control at the top-blown/closed hood system at Kaiser/Fontana.

Because the impact of these practices on the secondary control system for each type of furnace or control system cannot be fully quantified in terms of the resulting emission reductions, the standard does not require their application to supplement the secondary emission control afforded by the application of BDT. Consequently, the implementation of these practices may not be necessary to achieve the emission limits, whether concentration or opacity. This should not imply that any good operating practices consistent with minimizing emissions should not be applied to the extent practicable, as required

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under §60.11(d). For example, these practices may have a significant impact for open hood primary systems used to control secondary emissions; and although the degree of impact on other types of systems is unclear, the application of these practices is encouraged for each BOPF facility, whether or not subject to the standards of performance.

2.7.2 Comment: (IV-D-2) One commenter agreed with the preamble (p. 2661) that a separate capture and collection system is necessary for a closed hood primary system controlling secondary emissions from the furnace in order for the closed hood system to achieve a control efficiency similar to that of the open hood system. The proposed capture system for closed hood systems consists of a furnace enclosure evacuated by auxiliary hooding ducted to a high-efficiency collection device, such as a baghouse. The commenter recommended that minimum guidelines for hood size and extensions and for fan evacuation capacity be established, based on data from existing systems that meet the proposed standards.

Response: As explained in the response to comment 2.7.1, a numerical emission limit was selected as the format of the standard in lieu of work practices or equipment, design, and operating specifications. This approach offers certain advantages compared to equipment and design specifications (e.g., hood size and fan evacuation capacity) because any equipment capable of meeting the emission limits can be used to achieve compliance. In addition, the operating parameters of the equipment can be tailored to meet the needs of the particular facility. Designs and operating specifications for secondary emission control systems are expected to vary according to the type of vessel and the differences in operating parameters and procedures among existing shops. For example, shop structure could influence the size or location of auxiliary hooding. Also, fan evacuation capacity specifications may vary, depending on the amount of dilution air entrained into the system. Because of the differences in design and operating parameters among BOPF shops, the establishment of equipment and design specifications based on data from existing shops could limit the flexibility needed by BOPF owners and operators, particularly

in retrofit situations. For these reasons, equipment, design, or operational requirements are not included in the promulgated standards.

2.7.3 Comment: (IV-D-2) This commenter agreed that the exhaust ventilation rate is an important monitoring parameter to determine if the secondary capture system is operating effectively. However, he suggested that a baghouse pressure drop monitoring device also be considered. The addition of this device would ensure that the baghouse is being properly cleaned and is working at the design air-to-cloth ratio for the effective removal of captured emissions.

Response: As explained at 48 FR 2667, Clean Air Act requirements relating to the operation and maintenance of a source are generally included in new source standards of performance in the form of monitoring requirements. The operating parameters selected for monitoring requirements should be related to the performance of the emission control system and should be parameters that can be monitored without an unreasonable burden on the owner or operator.

Both exhaust ventilation rate and baghouse pressure drop are considered good indicators of the effectiveness of the secondary emission control system. However, a drop in exhaust ventilation rate is the better indicator of the control system performance, while baghouse pressure drop is the better indicator of the performance of the collection device. Exhaust ventilation rate or level was selected as the monitoring parameter because it provides a better indicator of overall secondary emission control system performance.

In regard to the secondary emission collection device, however, the opacity limit of 5 percent serves to supplement the monitoring requirement for exhaust ventilation rate or level. The opacity limit is also a good indicator of the effectiveness of the secondary emission collection device because degredation in baghouse performance will result in increased opacity. The monitoring of exhaust ventilation rate or level, coupled with the opacity limit, would provide a good indication of both the control system performance and the effectiveness of the collection device. Consequently, it appears unnecessary to require the continual monitoring and recording of both exhaust

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ventilation rate and baghouse pressure drop. Also, most new baghouse systems are equipped with pressure drop indicators. Although these indicators do not provide a continual record, they are considered sufficient to signal potential operating or maintenance needs for a baghouse before increased opacity results.

Review of the requirement for monitoring of exhaust ventilation rate as the secondary emissions monitoring parameter resulted in an examination of new monitoring systems for application to BOPF's. New, inexpensive systems are now available that allow the owner or operator to measure and record changes in the level of exhaust ventilation through the system. The cost of the entire monitoring and recording system is estimated at less than $2,000, with backpurge, for each installation. For this reason, the final regulation was modified to require the monitoring and recording of the various exhaust rates or the monitoring and recording of the exhaust levels through each duct of the system.

The compliance provisions were also expanded in the final rules to require that during compliance testing of a single furnace at a shop that normally operates two furnaces with overlapping cycles, the owner or operator must maintain an exhaust ventilation rate or level in each duct of the secondary emission control system that is appropriate for single-furnace operation. After the compliance test, the owner or operator must maintain for each duct exhaust ventilation rates or levels that are no lower than 90 percent of the values established during the most recent compliance test. Monitoring records indicating lower rates (or levels) through the ducts may indicate improper operation or maintenance of the system. The owner or operator must also report, on a semiannual basis, all measurements over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent compliance test for determining compliance with the mass standard for secondary emission collection devices. A similar provision requiring semiannual reporting also was added to the final standards for monitoring results of scrubber pressure drop. This requirement would apply if a scrubber primary emission control device were used to collect secondary emissions.

Other revisions to the monitoring requirements since proposal include the use of the term "continual" monitoring rather than "continuous" monitoring to avoid confusion with the type of continuous monitoring system defined under §60.2 of NSPS General Provisions. Also, a new provision was added to the final standards that requires the owner or operator to place the monitoring device (or devices) at capture points for the secondary emission control system; alternative locations for the monitoring device(s) must be approved in advance by the Administrator. The final standards also include a provision for the use of a strip chart recorder, the most common form of recordkeeping. This provision would require that if a strip chart recorder is used, it must be operated at a minimum chart speed of 3.8 cm/hr (1.5 in./hr).

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TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA-450/3-82-005b	2.
3. RECIPIENT'S ACCESSION NO.	
4. TITLE AND SUBTITLE: Revised Standards for Basic Oxygen Process Furnaces--Background Information for Promulgated Standards	5. REPORT DATE: December 1985
	6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Environmental Protection Agency, Office of Air Quality Planning and Standards, Emission Standards and Engineering Division, Research Triangle Park, North Carolina 27711	10. PROGRAM ELEMENT NO.
	11. CONTRACT/GRANT NO: 68-02-3056
12. SPONSORING AGENCY NAME AND ADDRESS: DAA for Air Quality Planning and Standards, Office of Air, Noise, and Radiation, United States Environmental Protection Agency, Research Triangle Park, NC 27711	13. TYPE OF REPORT AND PERIOD COVERED: Final
	14. SPONSORING AGENCY CODE: EPA/200/04
15. SUPPLEMENTARY NOTES	

16. ABSTRACT

A New Source Performance Standard for secondary emissions of particulate matter from basic oxygen process furnace (BOPF) steelmaking shops is being promulgated under authority of Section 111 of the Clean Air Act. This final action is applicable to secondary emissions from any top-blown BOPF and to any hot metal transfer station or skimming station used for a bottom-blown or top-blown BOPF, for which construction, reconstruction, or modification commenced after January 20, 1983. The purpose of the final standard is to minimize BOPF secondary particulate emissions to the level attainable with the best demonstrated technology. Amendments to the existing BOPF primary standard (40 CFR 60.140, Subpart N) are also being promulgated. These amendments to Subpart N apply to primary emissions from BOPF's constructed, reconstructed, or modified after June 11, 1983, and for BOPF's constructed, reconstructed, or modified after January 20, 1983.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Pollution Control Standards of Performance Basic Oxygen Process Furnaces Opacity Particulates	Air Pollution Control	13 B

18. DISTRIBUTION STATEMENT: Unlimited	19. SECURITY CLASS (This Report): Unclassified	21. NO. OF PAGES: 65
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Illinois EPA FOIA Exemption Reference Sheet

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Agency ID: 170000125683 Media File Type AIR
Bureau ID: 119813AAI
Site Name: US Steel Granite City
Site Address1: 1951 State St
Site Address2: Granite City Div
Site City: Granite City State: IL Zip: 62040-

This record has been determined to be partially or wholly exempt from public disclosure

Exemption Type:

Exempt in Whole

Exempt Doc #: 128 **Document Date:** 1 /25/1996 **Staff:** JRM

Document Description: DRAFT PERMIT PACKET

Category ID: 03L **Category Description:** AIR PERMIT - OPERATING

Permit ID:

Exempt Type: Exempt in Whole

Date of Determination: 8 /23/2013

b. Prior to issuance of this revised permit, a draft of the~~is~~ revised permit underwent ~~has undergone~~ a public ~~notice and~~ comment period, including ~~and~~ a public hearing ~~was held~~.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOF's) shall not exceed 11,000 net tons per day, averaged over any calendar month, and;

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF ~~ESP~~ stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(23).

8. The opacity of Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis, pursuant to 35 IAC 212.446(c).

(Former Conditions 9 through 17 have been removed from this revised permit.)

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~~9a. The Permittee shall determine the opacity from the openings BOF shop on at least a weekly basis. Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.~~

~~b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.~~

~~c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9 including the requirement that readings be taken by a certified observer.~~

~~d. These determinations shall be recorded in a log book, which at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three minute rolling average basis.~~

~~10. The Permittee shall follow the BOF operating procedures and requirements specified in attachment A. These requirements are designed to ensure proper operation of the BOF control system. These procedures shall be posted in the BOF pulpit (a.k.a., control room).~~

~~11. Flame suppression shall be used and maintained during the entire tapping process.~~

~~12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency of the charging and primary hoods:~~

~~i. Set point requirements while only a single BOF vessel is in operation;~~

~~A. Minimum set point during charging process: 550,000 cfm;~~

~~B. Minimum set point during refining process: 650,000 cfm;~~

~~C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);~~

~~b. i. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the minimum set point shall be 700,000 cfm.~~

~~iii. Overlapping operations of the BOF vessels is allowed under the following conditions:~~

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. Sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other vessel in order to satisfy condition (A) above.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

E. Condition B and C above shall be part of the Standard Operating Procedure (SOP) of the BOF vessels.

c. The BOF capture system shall be operated at the above minimum set points until and unless the Agency approves a lower minimum set point based on a demonstration that a better level of particulate matter control will occur, except for purposes of emissions testing as related to the set point.

d. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use.

e. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

f. The stack gas flow meter shall be calibrated on at least a quarterly basis.

13a. The Permittee shall operate and maintain the waste gas suction monitor system that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the static pressure in the main downcomer duct of the ESP emissions capture and transport system.

b. The waste gas suction monitoring system shall be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated and maintained to ensure accurate and useful data.

d. The Permittee shall continuously record the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

14a. The Permittee shall visually inspect at least monthly all visible BOF vessel enclosures, hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which includes the following:

a. Operating time of the BOF;

b. Operating time of the capture systems and performance parameters, including air flow and fan amperage through the fan motors, gas temperature at inlet to ESP, damper settings, and steam injection rate;

c. Operating time of the ESP and performance parameters, including voltage and amperage of each transformer/rectifier set, number of sections in use;

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~~d. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.~~

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

~~Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.~~

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year;

b. Blast Furnace Gas (BFG) usage: 30,800 million ft^3 per month and 185,030 million ft^3 per year;

c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1). rule

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in conditions 2(b) and 6(b).

C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual

production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

(Former Condition 33 has been removed from this revised permit.)

~~33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.~~

~~b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit.~~

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{mmft}^3 \text{ BFG per month} = \frac{(4.585277 \text{ NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month.} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

(Former Condition 33 has been removed from this revised permit.)

~~33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.~~

~~b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit.~~

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{mmft}^3 \text{ BFG per month} = \frac{(4.585277 \text{ NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month.} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

Visual observations of opacity to determine compliance with standards of opacity otherwise required by this permit shall be in accordance with applicable procedures

If not specified by applicable rules,

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft^3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source as of January 15, 1996, and supersede such conditions in cases where a conflict exists.

38a. The following tests shall be performed by no later than August 6, 1997 to demonstrate compliance with the conditions of this permit.

i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

ATTACHMENT A

(Former Attachment A has been removed in this revised permit.)

~~PROCEDURES TO ENSURE PROPER OPERATION OF BOF ESP CONTROL SYSTEM:~~

~~1. The emissions control operator shall:~~

~~a. Check on a regular basis and report to the emissions control foreman or melter:~~

~~i. Any ESP fields down;~~

~~ii. Any ESP fields in which the meter readings are showing no current or a fault;~~

~~b. Check on a regular basis that doors on all hopper screws are closed;~~

~~c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.~~

~~2. The melter shall:~~

~~a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;~~

~~b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;~~

~~c. Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:~~

~~i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;~~

~~ii. Check the stack gas pulpit set point for proper setting;~~

~~iii. Call the emissions control operator who shall perform the following steps;~~

~~A. Check the PVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;~~

~~B. Check to ensure that doors on all hopper screws are closed;~~

~~d. Check oxygen blow rates and adjust, if necessary;~~

~~e. Check hot metal chemistry;~~

~~f. A log shall be maintained of the above checks and any actions taken as a result.~~

~~3. The emission control foreman shall:~~

~~a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;~~

~~b. Check on a regular basis the draft rate set points;~~

~~c. Check on a regular basis primary and secondary damper settings;~~

~~d. Check on a regular basis ESP operation, including the following:~~

~~i. Fields down;~~

~~ii. Fields indicating sparks and unable to reset;~~

~~iii. Hopper screw doors are closed;~~

~~e. Check on a regular basis blow rates;~~

~~f. Check on a regular basis spray water system operation;~~

~~g. Check on a regular basis steam injection rate;~~

~~h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;~~

~~i. Contact the area manger for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;~~

~~j. Notify the emissions control operator and melter when isolation work begins;~~

~~k. A log shall be maintained of the above checks and any actions taken as a result.~~

~~4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:~~

~~a. Use controlled pouring of the hot metal into the BOF vessel;~~

~~b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;~~

~~c. Use the most beneficial furnace tilt angle;~~

~~d. These procedures shall be posted in the crane operator booth.~~

Illinois EPA
Document Index Form

R009540

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Bureau ID: 119813AAI **Illinois EPA ID: 170000125683**

Location Name: US Steel Granite City

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Comment:

EMISSION CALCULATIONS

The new baghouse is subject to a limit of 0.005 gr/dscf per the ***MOU- Section (2)(b)(i).***. This limit is slightly more stringent than the NESHAP limit of 0.0052 grains/dscf for new sources. The baghouse design flow rate is 900,000 acfm and 745,200 dscfm. Its potential annual PM emissions are calculated as:

1. 0.005gr/dscf x 745,200 dscfm x 60 min/hr x 8760 hr/yr x 1 lb/7000 gr x 1 t/2000 lb= **139.9** tpy

Summary of Projected Changes in Overall PM Emissions (Tons/Year)

Emission Point	Past	Future	Change
Roof	176.67	30.0	-146.69
ESP	262.8	235.50	-27.30
Baghouse	-	139.90	139.90
Total	439.47	405.37	-34.11

This assessment is presented not as a demonstration of the specific emission rates that may be measured at an exhaust point. The actual uncontrolled emission factors are estimates of averages for similar sources. The assumed building control rate and the estimated capture efficiencies are estimates that are likely to vary over time based on a number of operational variables. In any case, no short term degradation in control, control and abatement efficiencies will result from this project. From a relative point of view, however, this is a reasonable evaluation for the expected emission reductions of filterable PM. There will also be a similar beneficial reduction in PM_{10} and $PM_{2.5}$ emissions, on a pro rata basis, considering the improved capture and control provided by this project.

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From: Jason K Braxton [JKBraxton@uss.com]
Sent: Thursday, August 04, 2011 9:46 AM
To: Romaine, Chris
Cc: Jill A Foust; Smith, Kevin L.
Subject: U. S. Steel Granite City-Charging and Tapping Baghouse redline permit
Attachments: U S Steel-baghouse system 8-4-11-redlined.doc; Charging and tapping Emissions 8-04-11.xls

Chris,

Please find in the following attachments:

-A redlined version of the permit with additional comments to address highlighted questions in the attachments
-A spreadsheet containing the emissions estimates for particulate after baghouse installation.

Please contact Jill Foust or myself if you have any questions or need additional information.

Thanks.

Jason K. Braxton
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
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Permitted Production Limits				
Iron	3,165,000	tons/yr	9,808	tons/month
Steel	3,580,000	tons/yr	11,000	tons/month
steel/iron ratio	1.13			

Uncontrolled PM emissions

AP-42 Emission Factors		
Charging	0.6	lb/ton iron
Refining	28.5	lb/ton steel
Tapping	0.92	lb/ton steel

Operation	*Control Equipment Capture Efficiency %	Uncaptured Fugitive %	**Roof capture %	Roof monitor %
Charging- Baghouse	97.10%	2.90%	70.0%	0.87%
Refining- ESP	99.90%	0.10%	70.0%	0.03%
Tapping- Baghouse	98.70%	1.30%	70.0%	0.39%

* Capture efficiencies provided by USS engineering
** Assumes 70% capture at the roof

Future Roof Emissions (Total PM)			Tons/yr
Charging	0.00461	lb/ton steel	8.3
Refining	0.00855	lb/ton steel	15.3
Tapping	0.00359	lb/ton steel	6.4
Total	**0.01675**	**lb/ton steel**	**30.0**

Current Roof Emissions (Total PM)			Tons/yr
Roof (charging,refining, tapping)	0.0987	lb/ton steel	176.67

Emission Reduction at the Roof	-146.69	Tons/yr

Control equipment design criteria

Control Equipment	Flow Rate (ACFM)	* Flow Rate (SCFM)	Grain Loading(gr/dscf)	Grain loading Basis
ESP	870,000	627,270	0.01	MOU (2)(c)(ii); 35-IAC-212.446(a) and 212.458(b)(7)
Baghouse	900,000	745,200	0.005	MOU (2)(b)(i); 35-IAC-212.446(a)

* Multiplier for converting SCFM from ACFM is about 0.721 for the ESP and 0.828 for the new Baghouse from the engineering calculations
*If the baghouse and ESP runs year round at max flow, SCFM will actually be more like 627,000 SCFM at the ESP and 745,000 SCFM for the year at the Baghouse from the engineering calculations

$PM_{filterable}$ Applicable Limit Table

Control Equipment	Emission Factor		Annual limit		Regulatory limit
ESP stack*	0.16	lb/ton steel	286.4	tons/yr	Current emission factor in CAAP and 95010001 permits
ESP stack **	60	lbs/hr	262.8	tons/yr	Annual limit in CAAP and 95010001 production increase permits 35 IAC 212.458 (b)(23)
ESP stack **	0.225	lb/ton steel	402.75	tons/yr	60 lb/hr limit used in CAAP and 95010001 permits (more restrive) 35 IAC 212.458 (b)(23)
ESP stack* **	**0.01**	**gr/dscf**	**235.50**	**tons/yr**	**MOU (2)(c)(ii);**
Baghouse Stack	**0.005**	**gr/dscf**	139.9	**tons/yr**	**MOU (2)(b)(i);**

* 0.16 lb/ton is average of 3 stack tests in 1989,90, and 93
** Lowest applicable limit of 60 lbs/hr or 0.225 lbs/ton steel per 35-IAC-212.446(a) and 21.212.458(b)(23)
*** Grain loading per MOU (2)(c)(ii)

Controlled PM (Stack emissions) Future					
ESP stack	0.01	gr/dscf	235.50	tons/yr	Most Stringent-MOU (2)(c)(ii).
Baghouse	0.005	gr/dscf	139.9	tons/yr	Most Stringent-MOU (2)(b)(i).
		Total	**375.38**	tons/yr	

Emission Reduction From Control Equipment			
Control Equipment	Past (Tons/yr)	Future (tons/yr)	Change in emissions (tons/yr)
ESP	262.8	235.50	-27.30
Baghouse	0.00	139.9	139.9

Total Project Change in emissions			
Control Equipment	Past (Tons/yr)	Future (tons/yr)	Change in emissions (tons/yr)
Roof	176.67	30.0	-146.69
ESP	262.8	235.50	-27.30
Baghouse	0.00	139.9	139.9
Total	439.47	405.37	**-34.11**

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the air pollution controls for charging and tapping become a separate system isolated from the ESP operations.

A spark box will be provided to combine the flow from all the system ductwork and to reduce sparks to prevent damage to the filter bags. After the spark box, the collected emissions will travel to the baghouse. The baghouse is expected to consist of ten (10) to twelve (12) compartments rated for a design volume of 900,000 acfm with one compartment down for maintenance and one down for cleaning during normal operations.

Particulate matter is collected on the outside surface of the filter bags; periodically a compartment will be isolated for cleaning. During cleaning a high pressure pulse of air will be forced into the bags causing the dust that is collected on the surface of the bags to be ejected from the bags and fall into the compartment hopper where it is then removed by a rotary valve and discharged into a large tote bag that will be located under each compartment. The cleaned gases will exit from each compartment and enter into a common header. From this common header the flow of the cleaned gases will be induced by the fans into the stack.

The flow from each hood will be controlled by dampers equipped with actuators. The position of these dampers will be determined based on the secondary emission control system furnace operating mode. The furnace operating mode will also be used to control the total flow through the system via either fan inlet damper position or fan motor speed.

3.0 Emission Estimates

The proposed baghouse project is designed to reduce emissions of filterable particulate matter and will result in both, better capture and better control, of tapping and charging emissions. The project will not result in an increase in production or any other change in method of operation of the BOF besides utilization of the new baghouse. Therefore, a decrease in filterable particulate matter is the only change in emissions that will result by implementation of this project.

Capture

Based on the design of the new system, modeling estimates that the overall capture of emissions from charging will increase from 95% to 97%, and the overall capture of emissions from tapping, with the new tapping hood, will increase from 70% to 97%. Currently, the charging and tapping emissions that are not captured at the BOF vessels either settle within the building or are emitted from the roof monitors. It is estimated that approximately 70% of the un-captured particulate matter (PM) emissions are controlled by the building. The use of a baghouse will provide an estimated control efficiency of 97% and meet a filterable particulate grain loading of 0.005 grains per dry standard cubic feet of gas exhausted at the new baghouse stack, as compared with the estimated control efficiency of 95% and higher grain loading of 0.01 grains per dry standard cubic feet for the ESP.

Control

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The average uncontrolled filterable PM (filterable) emissions from charging and tapping the BOF vessel, based on AP-42, Table 12.5-1, are 0.6 lbs. per ton of metal charged (average) and 0.92 lbs/ton of steel produced (average) respectively. The ratio of steel produced to iron charged is approximately 1.15:1.0. As such, the overall average combined filterable PM emission rate for charging and tapping is:

$$\frac{0.6 \text{ lbs PM/ ton iron charged (average)}}{1.15 \text{ ton steel/ton iron}} + 0.92 \text{ lbs PM/ ton steel produced (average)} = 1.44 \text{ lbs PM/ ton Steel}$$

Based on the capture and control estimates stated above the average controlled emission rate from charging and tapping are estimated as follows for the current ESP control system. While the rates below are based upon averages used to determine expected net emission decreases from implementation of the project, in addition no short term (e.g., hourly) increases from current operations will occur, as relative, similar short term decreases are also projected:

Average Controlled Charging Emissions from the ESP:

0.6 lbs PM/ ton iron charged x (0.95) x (1-0.95) = 0.0285 lbs PM/ ton iron Charged

$$\frac{0.0285 \text{ lbs/ton iron charged}}{1.15 \text{ ton steel/ton iron}} = 0.0248 \text{ lbs PM/ton steel}$$

Average Uncontrolled Charging Emissions from the roof monitor:

0.6 lbs PM/ ton iron charged x (1-0.95)(1-0.7)] = 0.0090 lbs PM/ ton iron Charged

$$\frac{0.0090 \text{ lbs/ton iron charged}}{1.15 \text{ ton steel/ton iron}} = 0.00783 \text{ lbs PM/ton steel}$$

Average Controlled Tapping Emissions from the ESP:

0.92 lbs PM/ ton steel x [(0.70) x (1-0.95)] = 0.0322 lbs PM/ ton steel

Average Uncontrolled Tapping Emissions from the roof monitor:

0.92 lbs PM/ ton iron charged x (1-0.70)(1-0.70)] = 0.0828 lbs PM/ ton steel

The total average filterable PM emissions with current ESP controls:

= 0.0248 + 0.00783 + 0.0322 + 0.0828 = 0.1476 lbs PM/ton steel (average)

The proposed baghouse with improved capture will result in the following average PM filterable emission rates from charging and tapping:

Average Controlled Charging Emissions from the new baghouse:

0.6 lbs PM/ ton iron charged x [(0.97) x (1-0.97)] = 0.0175 lbs PM/ ton iron Charged

$$\frac{\text{0.0175 lbs/ton iron charged}}{\text{1.15 ton steel/ton iron}} = \text{0.0152 lbs PM/ton steel}$$

Average Uncontrolled Charging Emissions from the roof monitor:

0.6 lbs PM/ ton iron charged x (1-0.97)(1-0.7)] = 0.0054 lbs PM/ ton iron Charged

$$\frac{\text{0.0054 lbs/ton iron charged}}{\text{1.15 ton steel/ton iron}} = \text{0.00470 lbs PM/ton steel}$$

Average Controlled Tapping Emissions from the new baghouse:

$$\text{0.92 lbs PM/ ton steel} \times \frac{[(0.97) \times (1-0.97)]}{} = \text{0.0268 lbs PM/ ton steel}$$

Average Uncontrolled Tapping Emissions from the roof monitor:

0.92 lbs PM/ ton iron charged x (1-0.97)(1-0.70)] = 0.00828 lbs PM/ ton steel

The average filterable PM emissions with new baghouse controls:

= 0.0152 + 0.00470 + 0.0268 + 0.00828 = 0.0549 lbs PM/ton steel

Based on the assessment presented above there will be a 63% reduction in filterable PM emissions generated by hot metal charging and tapping as a result of proposed new baghouse control system per the following calculation:

$$\frac{\text{0.1476 lbs PM /ton steel - 0.0549 lbs PM /ton steel}}{\text{0.1476 lbs PM/ ton Steel}} = 0.628 = 63\%$$

This assessment is presented not as a demonstration of the specific emission rates that may be measured at an exhaust point. The actual uncontrolled emission factors are estimates of averages for similar sources. The assumed building control rate and the estimated capture efficiencies are estimates that are likely to vary over time based on a number of operational variables. In any case no short term reductions in building control rates or capture efficiencies will result by implementation of the project. From a relative point of view, however, this is a reasonable estimate of the expected emission reductions of filterable PM. There will also be a similar beneficial reduction in PM_{10} and $PM_{2.5}$ emissions, pro rata, based on the improved capture and control system.

The proposed filterable $PM/PM_{10}/PM_{2.5}$ emission limit for the exhaust from the new baghouse is 0.005 gr/dscf (per the MOU), which is equivalent to an hourly limit of:

$$\frac{0.005 \text{ gr/dscf} \times 900{,}000 \text{ dscfm} \times 60 \text{ min/hour}}{7000 \text{ gr/lb}} = 38.6 \text{ lbs/hour}$$

4.0 Regulatory Analysis

The BOF Charging and Tapping Operations are subject to Federal Rule, 40 CFR Part 63, Subpart FFFFF: National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities. These regulations include requirements that emissions from the operation are limited to 0.01 gr/dscf and opacity is limited to 20% (3-minute average). The baghouse is required to have a bag leak detector. In addition, the Facilitiy's Operation and Maintenacne Plan will require updating to incorporate the new controls.

The BOF Charging and Tapping Operations are also subject to the following state rules:

- ***35 212.123, Visible Emission Limitations for All Other Emission Units*** which limits opacity to 30%. The emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period, the emission unit is located within a 1000 ft radius from the center point of any similar emission unit, and that the higher opacity value shall be limited to 3 times in any 24 hour period.

- ***35 IAC 212.322 , Process Emission Units For Which Construction Or Modification Commenced Prior To April 14, 1972*** which limits PM emissions based on the following equation:

  $E = C + A(P)^B$

  where:

  P = process weight rate; and
  E = allowable emission rate; and
  A = 55.0
  B = 0.11; and
  C = -40.0

- ***35 212.446, Basic Oxygen Furnaces*** requires that charging, refining and tapping. particulate matter emissions from all basic oxygen furnaces (BOF) be collected and ducted to pollution control equipment. Emissions from basic oxygen furnace operations during the entire cycle (operations from the beginning of the charging process through the end of the tapping process) shall not exceed the allowable emission rate specified by 212.322.

5.0 Project Schedule

95 21 0001

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BOF CREDIT OPTIONS -10/17/95

OPTION 1: SELECTED OPTION AS OF 10/17/95.
Premise: Using AP-42 Uncontrolled factors at source, reducing by assumed capture efficiencies, assuming various future increases in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.

Annual production incr. reduced to 3,580,000 tons steel/yr.
Note that this also lowers the increase in emissions from the project, hence the amount of credit needed is reduced.
In this case netting exercise credit needed drops to;
(3,580,000/3,759,000)(266) = **253.3** tons steel
3,321,500 iron goes to 3,162,930
Uncontrolled, at source, PM emission factors per AP-42 and AIRS:

- charge = 0.6 lbs PM/ton hot metal at BOF
- refine = 28.5 lbs PM/ton steel at BOF
- tap = 0.92 lbs PM/ton steel at BOF

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,162,930, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	41.4	9.45	0.03431	90
refine	230.4	52.61	0.19095	99
tap	74.4	16.98	0.06164	90
total:	346.2	79.04	0.2869	
Future Potential				
charge	31.8	7.26	0.017765	95
refine	34.2	7.80	0.019095	99.9
tap*	52.4	11.97	0.029279	95
total:	118.4	27.03	0.066139	

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CREDIT = 227.8
Credit can be adjusted higher depending on the level of capture efficiency the Agency can justify for the hoods. Increase in capture due to BOF control improvements and

$0.6164 \times .95 \left(\frac{1-.95}{1-.90}\right) = 0.29279$

operating procedures which the Agency will make enforceable in the permit.

*Adjusted factor for tapping to give credit for reduction of tapping emissions due to use of fume suppression during each tap. Estimate 5% less emissions generated, which is reasonable in consideration of observations made by FOS - Jeff Benbenek and since NSPS suggest that fume suppression control could be equivalent to hood capture w/ baghouse. Factor changed to (.92)(1-.05) = 0.874

Pros;
- These appear to be the best factors available for each individual process due to fact that can directly correlate the AP-42 factors to test results;
    i. charging and tapping factor are taken directly from test results which have an emission factor reliability rating of A (although appears that uncaptured emissions are not accounted for in these factors since they appear to be a direct measurement of captured emissions);
    ii. refining factor appears to be nearly a weighted average of 3 tests of various emission factor reliability ratings (24.2 rating=A, 37 rating=B, and 30 rating=D).
- Emission estimates are still lower than what would be determined if used USEPA or Indiana methods.
- Estimates of charging and tapping hood capture efficiencies are consistent with historical assumptions and seem reasonable.
- Also consistent with historical hood capture efficiencies assumed for Acme.
- Allows insight into emissions from each individual process.

Cons;
- Have to estimate hood capture efficiencies.
- **Difficult to quantify and justify the percent increase in capture for hoods to the improvements at the BOF.**
- Higher hood capture efficiencies are assumed than that given for Acme, however, this is probably a better capture system and will have permit conditions and procedures to ensure that high level of capture is maintained.
- Assumed 99% historic hood capture efficiency for refining when indications are that have previously assume 99.9%.

OPTION 2:
Premise; using actual measured value of PM at roof monitor per test and assuming 70% improvement of capture system efficiency.

BOF roof monitor - 0.34 lbs PM/ton steel, per test.

- BOF roof monitor = (0.34)(0.67) = 0.2278 lbs PM-10/ton steel

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,759,500

PM-10 from BOF roof monitor:

historic actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ ton steel)	assumed hood capture eff.
charge				no assump.
refine				needed
tap				
total	274.9	62.8	0.2278	
future potential				
charge				70% improve-
refine				ment to capture
tap				for each
total	128.5	29.33	0.06834	

Credit = 146.4

Pros;
- Don't need to make assumptions for hood capture efficiencies.
- Factor is justifiable. Can directly correlate the factor to test results. Factor is the derived from a direct measurement of roof monitor emissions with an emission factor reliability rating of B. Note that all other known tests on roof monitors have yielded factors of 0.28, 0.3, and 0.147 lbs/ton with reliability rating of C for each. Therefore, the factor chosen for use provides the most reliable estimate of emissions.

Cons;
- Difficult to correlate and justify 70% improvement in capture to changes at GCD.
- Does not allow insight into emissions from individual processes.

OPTION 3:
Premise; using AP-42 factor for roof monitor emissions and assuming 70% improvement of capture system efficiency.

AP-42 factor: BOF roof monitor (all sources) - 0.5 lbs PM/ton steel.

- BOF roof monitor = (0.5)(0.67) = 0.335 lbs PM-10/ton steel

However, this factor does not appear appropriate for use at GCD due to the following 2 reasons;

1. Factor is for all sources under the BOF roof, which should include the following uncaptured emissions: BOF charge/refine/tap, hot metal transfer, desulfurization and slagging.
Emissions from hot metal transfer, desulfurization, and slagging operations at GCD are assumed by the Agency to be 100% captured and therefore do not contribute to the roof monitor emissions.
Therefore this emission factor would overestimate monitor emissions since the contribution to the factor from hot metal transfer, desulfurization and slagging are not subtracted out to obtain a factor which represents only those emissions which are exiting out the roof, i.e., from the BOF. Hence the factor should be lower. Unable to determine how much.

2. Appears to be a flaw in the reasoning used to obtain the factor of 0.5. That is, if they simply took, as the test results indicate;
0.34 (measured at roof) + 016 (captured charging) = 0.5 from monitor
Refer to test previously referenced in option 2.
The determination method appears to imply that charging emissions are not captured and that all are emitted at roof monitor, which is not the case at GCD which has a charging hood. Therefore, factor should be 0.34 (as is used in option 3) not 0.5.

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,759,500

PM-10 from BOF roof monitor:

historic actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ ton steel)	assumed hood capture eff.
charge				no assump. needed
refine				
tap				
total	404.2	92.3	0.335	
future potential				
charge				70% improve-
refine				ment to capture
tap				for each
total	188.0	42.9	0.10	

credit = 216.2

Pros;
- emission determinations are consistent with AP-42.
- estimates are lower than those which would occur using Indiana and USEPA methods.

Cons;
- factor not justifiable.
- difficult to quantify and justify a 70% percent increase in capture for hoods to the improvements at the BOF (example of 70% increase would be going from 90% capture efficiency to 97% on charge and tap, and 99.0% to 99.7% on refine).

OPTION 4:
Premise: Using AP-42 at building monitor factors for charge and tap, AIRS uncontrolled PM-10 factor for BOF refine, reducing by assumed capture efficiency, assuming various increase in capture efficiencies, giving 5% reduction in generation of tap emissions due to fume suppression, and lowering request for increase in production and annualizing.

Lower request for annual production increase to 3,580,000 tons steel/yr, credit needed drops to;
(3,580,000/3,759,000)(266) = **253.3** tons

Uncontrolled PM emission factors per AP-42:
- charge = 0.142 lbs PM/ton hot metal - at building monitor
- tap = 0.29 lbs PM/ton steel - at building monitor

Uncontrolled PM factor per AIRS:
- refine = 13.1 lbs PM-10/ton steel - at BOF

Production in tons/yr;
historic production: iron = 2,059,557, steel = 2,413,406
future production: iron = 3,321,500, steel = 3,580,000

PM-10 from BOF roof:

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	9.8	2.24	0.00812	90
refine	158.1	36.09	0.131	99
tap	23.5	5.35	0.0194	90
total:	191.4	43.68	0.15852	

OR

If assume that these factors represent uncaptured charging and tapping emissions at the roof monitor - then don't reduce by hood capture since hood capture already accounted for, which the comment on the test Table suggests. Comment is ambiguous.

Historic Actual	annual (tons/yr)	hourly (lbs/hr)	emission rate (lbs/ton steel)	assumed hood capture eff.
charge	98.0	22.37	0.08119	not needed
refine	158.1	36.09	0.131	99
tap	234.5	53.53	0.1943	not needed
total:	490.6	111.99	0.40649	

Future Potential	
charge	
refine	99.7
tap*	
total:	

Pros;
- Uses AP-42 and AIRS factors.
- Charging and Tapping estimates consistent with historical estimates.

Cons;
- The factors for charging and tapping have a lower reliability rating (B as compared to A) and do not appear as accurate as factors used in option 1.

- Factors used for charging and tapping appear to provide the least reliable estimate of emissions at roof due to the following:
The tests on which the charge and tap roof monitor factors were based used an in-stack filter to measure emissions captured by a primary hood during each process. An estimate of uncaptured was then made assuming a hood capture efficiency of 93% for tapping and 78% for charging. They then assume that all uncaptured emissions were emitted out the roof - which is the emissions the factor supposedly represents. These factors then are only as good as the assumed capture efficiencies and insert another assumption into an already assumption saturated estimate. In conclusion, using these factors will not give as good an estimate of roof emissions as the other options and hence it should not be used.
Also, GCD has a hood dedicated to charging, therefore this factor is not representative of situation at GCD, i.e., these are emissions with a primary hood capturing both charge and tap.
- BOF factor of 13.1 is inconsistent with available data in that it appears to use PM-10 fraction of 46% (i.e., 28.5 x .46 = 13.1) which is the AP-42 fraction for charging, however, the emissions rate is that for refining.

Notes:
- Most representative factor for charging may be: uncontrolled - 0.16 lbs PM/ton steel, since this was measured in a charging hood which is consistent with GCD capture system.
- No definitive way to estimate historic and future BOF roof emissions.
- Options 1 and 2 appear to be the most justifiable.

Common assumptions for all options:
- 67% of PM is PM-10 which is value presented in AP-42 Table 7.5-2 for top blown furnace. LTV Steel study supports conclusion that large particles will be emitted from roof, hence measured PM of tests is not necessarily mostly composed of PM-10, as was previously estimated.
- all PM-10 not captured by hoods is emitted through roof.

Table 12.5-2 (cont.).

Source	EMISSION FACTOR RATING	Particle Size (μm)[a]	Cumulative Mass % ≤ Stated Size	Cumulative Mass Emission Factor	
				kg/Mg	lb/ton
Basic oxygen furnace BOF					
Top blown furnace melting and refining controlled by closed hood and vented to scrubber	C	0.5	34	0.0012	0.0023
		1.0	55	0.0019	0.0037
		2.5	65	0.0022	0.0044
		5.0	66	0.0022	0.0045
		10	67	0.0023	0.0046
		15	72[c]	0.0024	0.0049
		—[d]	100	0.0034	0.0068
BOF charging at source[k]	E	0.5	8[e]	0.02	0.05
		1.0	12	0.04	0.07
		2.5	22	0.07	0.13
		5.0	35	0.10	0.21
		10	46	0.14	0.28
		15	56	0.17	0.34
		—[d]	100	0.3	0.6
Controlled by baghouse	D	0.5	3	9.0×10^{-6}	1.8×10^{-5}
		1.0	10	3.0×10^{-5}	6.0×10^{-5}
		2.5	22	6.6×10^{-5}	0.0001
		5.0	31	9.3×10^{-5}	0.0002
		10	45	0.0001	0.0003
		15	60	0.0002	0.0004
		—[d]	100	0.0003	0.0006

99.9%

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Table 12.5-2 (cont.).

Source	EMISSION FACTOR RATING	Particle Size (μm)[a]	Cumulative Mass % ≤ Stated Size	Cumulative Mass Emission Factor	
				kg/Mg	lb/ton
BOF tapping at source[k]	E	0.5	—[j]	—[j]	—[j]
		1.0	11	0.05	0.10
		2.5	37	0.17	0.34
		5.0	43	0.20	0.40
		10	45	0.21	0.41
		15	50	0.23	0.46
		—[d]	100	0.46	0.92
BOF tapping					
Controlled by baghouse	D	0.5	4	5.2×10^{-5}	0.0001
		1.0	7	0.0001	0.0002
		2.5	16	0.0002	0.0004
		5.0	22	0.0003	0.0006
		10	30	0.0004	0.0008
		15	40	0.0005	0.0010
		—[d]	100	0.0013	0.0026
Q-BOP melting and refining controlled by scrubber	D	0.5	45	0.013	0.025
		1.0	52	0.015	0.029
		2.5	56	0.016	0.031
		5.0	58	0.016	0.032
		10	68	0.019	0.038
		15	85[e]	0.024	0.048
		—[d]	100	0.028	0.056

0.0004 / 0.92

99.88%

0.0026 / 0.92

≅ 99.72%

Illinois EPA
Document Index Form

R009557

Batch ID: A000962

Doc ID: 2169905

Bureau ID: 119813AAI **Illinois EPA ID:** 170000125683

Location Name: US Steel Granite City

Category: 03M

Document Date: 12/17/2012

Permit ID: 95010001

Doc ID:

Batch ID:

IEPA ID:

Interest ID:

Cat ID:

Date:

Permit ID:

Permit Log:

Keyword:

Comment:

Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

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MAY - 4 2012
ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR
STATE OF ILLINOIS

April 30, 2012

CERTIFIED MAIL NO. 7011 1150 0001 0452 9533
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Illinois Environmental Protection Agency
Division of Air Pollution Control
Air Quality Section (#39)
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Dear Sir or Madam:

Enclosed please find the Annual Emission Report for January 1 – December 31, 2011 from Granite City Works, United States Steel Corporation.

Please note, the following source in the AER contain lead emissions calculated on a weight % basis: Battery Oven Doors, Battery Oven Pushing, Coal Crushing, Coal Pulvering, Caster Mold, Spray Chamber, Blast Furnace Casthouse, Blast Furnace Charging, Blast Furnace Fugitive, Blast Furnace Ironspout, Deslagging Station and Material Handling, Argon Stir, LM, Tripper Conv, Syn Slag, Baghouse Filling and Removal, Binfloor Flux Conveyor/Transfer, Blast Furnace Flare #1, Blast Furnace Flare #2, BOF Additive System, Dust Catcher, Hot Metal Slag Skimming, Slab Ripper, and Slab Scarfing.

Should you have any questions regarding this report, please direct them to my office or that of Michael McLean at (618) 451-3451.

Sincerely,

Richard Veitch

Richard Veitch
General Manager
Granite City Works
United States Steel Corporation

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Enclosure

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DAPC - ANNUAL EMISSIONS REPORT - 2011

PROCESS DATA

ID INFORMATION				GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033 BOF0033P	BOF (2-Vessels) ESP	30300914		72080043	8/1972			27	24	27	22

TYPICAL OPERATION - UNITS: TONS THROUGHPUT								
Hours / Day	Day / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
24.00	7	52	8,760.00	294.31	7,063.44	2,578,170.00	588,623	No

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
24	7	13

Hours / Season	Start Time	End Time
2,208	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
314.28	628,562	No

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100 %

CAPTURING STACKS

ID	Efficiency (%)

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Carbon Monoxide	1	8.99300	2,646.74461	2,826.32721
Lead	5	0.28680	0.28680	0.28680
Nitrogen Oxides	5	0.03890	11.44872	12.22552
Particulate Matter	5	0.02200	6.47486	6.91418
Particulate Matter less than 10 Microns in Diameter	1	0.02200	6.47486	6.91418
Particulate Matter less than 2.5 Microns in Diameter	1	0.02200	6.47486	6.91418
Volatile Organic Compounds	5	0.00600	1.76587	1.88568

6/2009 - Stack test

R009559

PROCESS DATA

ID INFORMATION				GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034 BOF0034P	BOF (2-Vessels) Roof Monitor	30300917		72080043	8/1972			27	24	27	22

TYPICAL OPERATION - UNITS: TONS THROUGHPUT								
Hours / Day	Day / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
24.00	7	52	8,760.00	294.31	7,063.44	2,578,170.00	588,623	No

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Lead	5	0.00387	0.00387	0.00387
Particulate Matter	5	0.02961	8.71457	9.30585
Particulate Matter less than 10 Microns in Diameter	5	0.01984	5.83973	6.23596
Particulate Matter less than 2.5 Microns in Diameter	5	0.01925	5.66550	6.04991

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
24	7	13

Hours / Season	Start Time	End Time
2,208	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
314.28	628,562	No

CAPTURING CONTROLS

ID Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100 %

R009560

Report Generated Date (3/5/02)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

119813AAI GRANITE CITY DIVISION OF NATIONAL STEEL CORPORATION

DAPC - ANNUAL [illegible]IONS REPORT - 2002

OWNER:

FACILITY PHONE:

- SOURCE DATA -

R009561

SOURCE

IDS AND LOCATION

FINDS: ILD980606917
AIRS: 17-119-0153
FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

[redacted]

LONGITUDE: 90:08:42.0000
LATITUDE: 38:41:55.0000
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DESCRIPTION:
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MEASUREMENT:

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BUREAU OF AIR
STATE OF ILLINOIS

SOURCE ADDRESS

GRANITE CITY DIVISION OF
NATIONAL STEEL CORPORATION
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT: Michael D. Gibbons
PHONE: (618) 451-3241
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Contact: Michael D. Gibbons
Phone: (618) 451-3241
FAX: (618) 451-3707

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20TH & STATE STREET
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FAX: (618) 451-3707

Contact: Michael D. Gibbons
Phone: (618) 451-3241
FAX: (618) 451-3707

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M.D. Gibbons
AUTHORIZED SIGNATURE

4/25/03
DATE

Michael D. Gibbons, Vice President/General Manager
TYPED OR PRINTED NAME AND TITLE

(618) 451-3241
TELEPHONE NUMBER

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RELEASABLE
AUG 23 2013
REVIEWER JRM

R0005562

PROCESS DATA

ID INFORMATION

IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA

GENERAL INFORMATION

Permit Number	Began Operation	Ceased Operation	Identical Points
72080043	08/1972		1

PERCENT THROUGHPUTS

Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
25	23	25	~~26~~ 27

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	308	7,392	2,698,188	616,025	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
309.80	619,606	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,769.95487	2,786.05828
LEAD	5	0.28680	0.28680	0.28680
NITROGEN OXIDES	5	0.03890	11.98168	12.05134
PARTICULATE MATTER	5	0.14680	45.21621	45.47908
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	45.21621	45.47908
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.84807	1.85882

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

PROCESS DATA

R009563

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	25	23	25	~~26~~ 27

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	308	7,392	2,698,188	616,025	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	30.40082	30.57756
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	20.37194	20.49037

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
309.80	619,606	No

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

119813AAI - GRANITE CITY DIVISION OF

NATIONAL STEEL

R009564

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value

CAPTURING CONTROLS

ID	Efficiency (%)
-	-

CAPTURING STACKS

ID	Efficiency
BOF0045S	100 %

Report Gener(Date 4/20/04 ILLINOIS ENVIRONMEN(PROTECTION AGENCY Page 1

DAPC - ANNUAL EMISSIONS REPORT - 2003

119813AAI - United States Steel Corp. - Granite City Works

R0009565

OWNER:

FACILITY PHONE:

- SOURCE DATA -

SOURCE IDS AND LOCATION

FINDS: ILD980606917
AIRS: 17-119-0153
FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

[redacted]

LONGITUDE: 90:08:42.0000
LATITUDE: 38:41:55.0000
YEAR OF DATUM:
SCALE:
DESCRIPTION:
ACCURACY:
MEASUREMENT:

SOURCE ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE: EXT:
FAX:

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Contact:
Phone:
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20TH & STATE STREET
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Merle R. Stein 02.
AUTHORIZED SIGNATURE

May 17, 2004
DATE

Merle R. Stein
General Manager
TYPED OR PRINTED NAME AND TITLE

(618)451-3241
TELEPHONE NUMBER

GCS ENVIRONMENTAL Fax:6184514020 May 17 2004 8:24 P.02

119813AAI - United States Steel Corp.
Granite City Works

R009566

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	14	5	41	40

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	5,424	314	7,530	1,701,682	627,464	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
317.04	634,080	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,821.39127	2,851.13942
LEAD	5	0.19340	0.19340	0.19340
NITROGEN OXIDES	5	0.03890	12.20417	12.33285
PARTICULATE MATTER	5	0.14680	46.05585	46.54145
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	46.05585	46.54145
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.38042	1.39498
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.88239	1.90224

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

119813AAI - United States Steel Corp.
Granite City Works

R0009567

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	14	5	41	40

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	5,424	314	7,530	1,701,682	627,464	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
317.04	634,080	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	30.96534	31.29183
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	20.75023	20.96902
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	7.12203	7.19712

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

119813AAI - United States Steel Corp.
Granite City Works

R009568

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS		CAPTURING STACKS	
ID	Efficiency (%)	ID	Efficiency
-	-	BOF0045S	100 %

DAPC - ANNUAL EMISSIONS REPORT - 2004

119813AAI - United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

R009569

SOURCE IDS AND LOCATION

FINDS: ILD980606917
AIRS: 17-119-0153
FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

IEPA USE ONLY
IEPA USE ONLY
IEPA USE ONLY

LONGITUDE: 90:08:42.0000
LATITUDE: 38:41:55.0000
YEAR OF DATUM:
SCALE:
DESCRIPTION:
ACCURACY:
MEASUREMENT:

SOURCE ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE: EXT:
FAX:

Contact:
Phone:
FAX:

ANNUAL EMISSION REPORT MAILING ADDRESS

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20TH & STATE STREET
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Merle R. Stein — 3-31-05

AUTHORIZED SIGNATURE — DATE

Merle R. Stein - General Manager — 618-451-3241

TYPED OR PRINTED NAME AND TITLE — TELEPHONE NUMBER

IEPA - DIVISION OF RECORDS MANAGEMENT
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R0009570

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	27	26	22	25

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,784	291	6,994	2,559,903	582,856	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
259.29	518,583	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,620.81144	2,331.80996
LEAD	5	0.19340	0.19340	0.19340
NITROGEN OXIDES	5	0.03890	11.33655	10.08645
PARTICULATE MATTER	5	0.14680	42.78162	38.06402
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	42.78162	38.06402
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.28228	1.14088
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.74857	1.55575

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

119813AAI - United States Steel Corp.
Granite City Works

R00B571

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	27	26	22	25

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,784 8760	291	6,994	2,559,903	582,856	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
259.29	518,583	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	28.76394	25.59209
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	19.27504	17.14955
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	6.61571	5.88618

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

119813AAI - United States Steel Corp.
Granite City Works

R009572

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS

ID	Efficiency (%)
-	-

CAPTURING STACKS

ID	Efficiency
BOF0045S	100 %

Report Generated Date 4/12/06 1 of 2

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DAPC - ANNUAL EMISSIONS REPORT - 2005

119813AAI - United States Steel Corp. - Granite City Works

OWNER:

FACILITY PHONE:

- SOURCE DATA -

R009573

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

SOURCE IDS AND LOCATION

FINDS: ILD980606917
AIRS: 17-119-0153
FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

[redacted] IEPA USE ONLY
IEPA USE ONLY
IEPA USE ONLY

LONGITUDE: 90:08:42.0000
LATITUDE: 38:41:55.0000
YEAR OF DATUM:
SCALE:
DESCRIPTION:
ACCURACY:
MEASUREMENT:

SOURCE ADDRESS

UNITED STATES STEEL CORPORATIO
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE: EXT:
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Merle Stein — 4-24-2006

AUTHORIZED SIGNATURE — DATE

Merle R. Stein - General Manager — 618-451-3241

TYPED OR PRINTED NAME AND TITLE — TELEPHONE NUMBER

DAPC - ANNUAL EMISSIONS REPORT - 2005

9813AAI - United States Steel Corp.
Granite City Works

PROCESS DATA

R0009574

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
EPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	29	24	18	29

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

lours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	292	7,005	2,556,865	583,759	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
211.64	423,277	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,624.87294	1,903.26581
LEAD	5	0.19340	0.19340	0.19340
NITROGEN OXIDES	5	0.03890	11.35412	8.23274
PARTICULATE MATTER	5	0.14680	42.84792	31.06854
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	42.84792	31.06854
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.28427	0.93121
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.75128	1.26983

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

R0009575

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	29	24	18	29

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	292	7,005	2,556,865	583,759	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
211.64	423,277	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	28.80851	20.88873
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	19.30491	13.99778
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	6.62596	4.80441

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

9813AAI - United States Steel Corp.
Granite City Works

R009576

CONTROL DEVICE DATA

ID INFORMATION	
IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS		CAPTURING STACKS	
ID	Efficiency (%)	ID	Efficiency
-	-	BOF0045S	100 %

Report Generated Date 4/12/06

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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OWNER:
FACILITY PHONE:

R009577

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IEPA-DIVISION OF RECORDS MANAGEMENT
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SOURCE IDS AND LOCATION

FINDS: ILD980606917
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FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

[redacted]

LONGITUDE: 90:08:42.0000
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YEAR OF DATUM:
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ACCURACY:
MEASUREMENT:

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GRANITE CITY, IL 62040
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Merle Stein
AUTHORIZED SIGNATURE

4-24-2006
DATE

Merle R. Stein - General Manager
TYPED OR PRINTED NAME AND TITLE

618-451-3241
TELEPHONE NUMBER

119813AAI - United States Steel Corp.
Granite City Works

R009578

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	29	24	18	29

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	292	7,005	2,556,865	583,759	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
211.64	423,277	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,624.87294	1,903.26581
LEAD	5	0.19340	0.19340	0.19340
NITROGEN OXIDES	5	0.03890	11.35412	8.23274
PARTICULATE MATTER	5	0.14680	42.84792	31.06854
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	42.84792	31.06854
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.28427	0.93121
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.75128	1.26983

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

119813AAI - United States Steel Corp.
Granite City Works

R0009579

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	29	24	18	29

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	292	7,005	2,556,865	583,759	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
211.64	423,277	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	28.80851	20.88873
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	19.30491	13.99778
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	6.62596	4.80441

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

119813AAI - United States Steel Corp.
Granite City Works

R009580

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS		CAPTURING STACKS	
ID	Efficiency (%)	ID	Efficiency
-	-	BOF0045S	100 %

United States Steel Corporation
Granite City Works
1951 State Street
Granite City, IL 62040
618 451 3241
fax: 618 451 3707
email: mafedorenko@uss.com

Michael A. Fedorenko
General Manager

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BUREAU OF AIR
STATE OF ILLINOIS

April 18, 2007

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Illinois Environmental Protection Agency
Division of Air Pollution Control
Air Quality Section (#39)
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Dear Sir or Madam:

Enclosed please find the Annual Emission Report for January 1 – December 31, 2006 from Granite City Works, United States Steel Corporation.

Should you have any questions regarding this report, please direct them to my office or that of Robert Ribbing at (618) 451-4026.

Sincerely,

M. A. Fedorenko

M. A. Fedorenko
General Manager
Granite City Works
United States Steel Corporation

jm

Enclosure

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

DAPC - ANNUAL EMISSIONS REPORT - 2006

119813AAI - United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

SOURCE IDS AND LOCATION

FINDS:	ILD980606917	IEPA USE ONLY	LONGITUDE:	90:08:42.0000
AIRS:	17-119-0153	IEPA USE ONLY	LATITUDE:	38:41:55.0000
FEIN:	25-0687210	IEPA USE ONLY	YEAR OF DATUM:	
D & B:			SCALE:	
SIC 1:	3312		DESCRIPTION:	
SIC 2:			ACCURACY:	
SIC 3:			MEASUREMENT:	

SOURCE ADDRESS

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GRANITE CITY WORKS
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GRANITE CITY, IL 62040
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STATE OF ILLINOIS

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M.A. Fedorenko ISK
AUTHORIZED SIGNATURE

DATE 4-19-07

M. A. Fedorenko
General Manager
TYPED OR PRINTED NAME AND TITLE

TELEPHONE NUMBER 618-451-3241

R009582

119813AAI - United States Steel Corp.
Granite City Works

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	23	29	29	19

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	283	6,794	2,479,824	566,170	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
328.98	657,959	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,627.99174	2,331.80996
LEAD	5	0.19340	0.19393	0.19340
NITROGEN OXIDES	5	0.03890	11.36761	10.08645
PARTICULATE MATTER	5	0.14680	42.89883	38.06402
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	42.89883	38.06402
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.28580	1.14088
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.75336	1.55575

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

R009583

119813AAI - United States Steel Corp.
Granite City Works

ID INFORMATION / GENERAL INFORMATION / PERCENT THROUGHPUTS

IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	23	29	29	19

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	283	6,794	2,479,824	566,170	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
328.98	657,959	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01294	0.01290
PARTICULATE MATTER	5	0.09870	28.84274	25.59209
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	19.32785	17.14955
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	6.63383	5.88618

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

R009584

119813AAI - United States Steel Corp.
Granite City Works

R009585

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS		CAPTURING STACKS	
ID	Efficiency (%)	ID	Efficiency
-	-	BOF0045S	100 %

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DAPC - ANNUAL EMISSIONS REPORT - 2007

119813AAI - United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

R009586

SOURCE IDS AND LOCATION

FINDS: ILD980606917
AIRS: 17-119-0153
FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

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LONGITUDE: 90:08:42.0000
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YEAR OF DATUM:
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ACCURACY:
MEASUREMENT:

SOURCE ADDRESS

UNITED STATES STEEL CORPORATIO
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Sharon K. Owen

AUTHORIZED SIGNATURE
Sharon K. Owen
General Manager
TYPED OR PRINTED NAME AND TITLE

DATE April 28, 2008

TELEPHONE NUMBER 618-451-3241

119813AAI - United States Steel Corp.
Granite City Works

R0009587

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	21	28	26	26

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	286	6,859	2,503,715	571,624	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
297.82	595,636	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,570.30884	2,678.27872
LEAD	5	0.28680	0.28680	0.28680
NITROGEN OXIDES	5	0.03890	11.11809	11.58513
PARTICULATE MATTER	5	0.14680	41.95723	43.71971
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	41.95723	43.71971
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.25757	1.31040
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.71487	1.78691

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

119813AAI - United States Steel Corp.
Granite City Works

R009588

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	21	28	26	26

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,760	286	6,859	2,503,715	571,624	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
297.82	595,636	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	28.20966	29.39465
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	18.90362	19.69769
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	6.48822	6.76077

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

119813AAI - United States Steel Corp.
Granite City Works

R009589

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS		CAPTURING STACKS	
ID	Efficiency (%)	ID	Efficiency
-	Included in Control Eff.	BOF0045S	100 %

DAPC - ANNUAL EMISSIONS REPORT - 2008

119813AAI - United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

R009590

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APR 24 2009
ENVIRONMENTAL PROTECTION AGENCY
STATE OF ILLINOIS

SOURCE IDS AND LOCATION

FINDS: ILD980606917
AIRS: 17-119-0153
FEIN: 25-0687210
D & B:
SIC 1: 3312
SIC 2:
SIC 3:

IEPA USE ONLY
IEPA USE ONLY
IEPA USE ONLY

LONGITUDE: 90:08:42.0000
LATITUDE: 38:41:55.0000
YEAR OF DATUM:
SCALE:
DESCRIPTION:
ACCURACY:
MEASUREMENT:

SOURCE ADDRESS

UNITED STATES STEEL CORPORATIO
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE: EXT:
FAX:

Contact:
Phone:
FAX:

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

ANNUAL EMISSION REPORT MAILING ADDRESS

UNITED STATES STEEL CORPORATIOI
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE: EXT:
FAX:

Contact:
Phone:
FAX:

☐ NO CHANGES

☐ CHANGES INDICATED

ALL ANNUAL EMISSIONS REPORT DATA VERIFIED, MODIFIED OR PROVIDED ON BEHALF OF THE COMPANY NAMED ABOVE, WHETHER SUBMITTED ELECTRONICALLY OR IN WRITING, REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

AUTHORIZED SIGNATURE Richard E Veitch DATE April 20, 2009

TYPED OR PRINTED NAME AND TITLE Richard E. Veitch General Manager TELEPHONE NUMBER 618-451-3241

119813AAI - United States Steel Corp.
Granite City Works

R009591

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0033	BOF0033P	BOF - TWO VESSELS	30300914	NA	72080043	08/1972		1	21	29	30	19

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,784	271	6,516	2,384,770	542,980	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
325.85	651,707	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
CARBON MONOXIDE	1	8.99300	2,441.51145	2,930.39837
LEAD	5	0.28680	0.28680	0.28680
NITROGEN OXIDES	5	0.03890	10.56097	12.67569
PARTICULATE MATTER	5	0.14680	39.85476	47.83526
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	1	0.14680	39.85476	47.83526
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	1	0.00440	1.19456	1.43375
VOLATILE ORGANIC COMPOUNDS	5	0.00600	1.62894	1.95512

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100

CAPTURING STACKS

ID	Efficiency (%)

119813AAI - United States Steel Corp.
Granite City Works

R009592

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA ID	R-EDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec - Feb	Mar - May	Jun - Aug	Sep - Nov
0034	BOF0034P	BOF UNCAPTURED ROOF MONITOR EMISSIONS	30300917	NA	72080043	08/1972		1	21	29	30	19

TYPICAL OPERATION - UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ year	Hours/ year	Rate/ hr	Rate/ day	Rate/ yr	PWR (lb/hr)	Confidential
24	7	52	8,784	271	6,516	2,384,770	542,980	No

PEAK OZONE SEASON OPERATION

UNITS: TONS THROUGHPUT

Hours/ day	Days/ week	Weeks/ season
24	7	13

Hours/ season	Start Time	End Time
2,208	00:00	23:59

Rate/ hr	PWR (lb/hr)	Confidential
325.85	651,707	No

EMISSION INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ ton)	Reported Emission Rate (lb/ hr)	Ozone Season Reported Emission Rate (lb/ hr)
LEAD	5	0.01290	0.01290	0.01290
PARTICULATE MATTER	5	0.09870	26.79608	32.16172
PARTICULATE MATTER, LESS THAN 10 MICRONS IN DIAMETER	5	0.06614	17.95636	21.55193
PARTICULATE MATTER, LESS THAN 2.5 MICRONS IN DIAMETER	5	0.02270	6.16310	7.39719

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100

119813AAI - United States Steel Corp.
Granite City Works

R009593

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electrostatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS		CAPTURING STACKS	
ID	Efficiency (%)	ID	Efficiency
-	Included in Control Eff.	BOF0045S	100 %

2009

R009594

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

April 30, 2010

CERTIFIED MAIL NO. 7008 1830 0000 0229 5122
RETURN RECEIPT REQUESTED

RECEIVED

MAY 03 2010

Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Illinois Environmental Protection Agency
Division of Air Pollution Control
Air Quality Section (#39)
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Dear Sir or Madam:

Enclosed please find the Annual Emission Report for January 1 – December 31, 2009 from Granite City Works, United States Steel Corporation.

Should you have any questions regarding this report, please direct them to my office or that of Robert Ribbing at (618) 451-4026.

Sincerely,

Richard Veitch

Richard Veitch
General Manager
Granite City Works
United States Steel Corporation

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Enclosure

Report Generated Date: Apr 29, 2010

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DAPC - ANNUAL EMISSIONS REPORT - 2009

R009595

119813AAI United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

SOURCE IDS AND LOCATION

FINDS:	ILD980606917
AIRS:	17-119-0153
FEIN:	25-0687210
D & B:	
SIC 1:	3312
SIC 2:	
SIC 3:	

[redacted]

LONGITUDE:	90:8:42
LATITUDE:	39:41:55
YEAR OF DATUM:	
SCALE:	
DESCRIPTION:	
ACCURACY:	
MEASUREMENT:	

SOURCE ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE:
FAX: EXT:

CONTACT: Jill Foust
PHONE: 618-451-3391
FAX: 618-451-4020

ANNUAL EMISSION REPORT MAILING ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE:
FAX: EXT:

CONTACT: Robert Ribbing
PHONE: 618-451-4026
FAX: 618-451-4020

☐ NO CHANGES

ALL ANNUAL EMISSIONS REPORT DATA VERIFIED, MODIFIED OR PROVIDED ON BEHALF OF THE COMPANY NAMED ABOVE, WHETHER SUBMITTED ELECTRONICALLY OR IN WRITING, REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Richard Veitch

☐ CHANGES INDICATED

AUTHORIZED SIGNATURE
Richard Veitch
General Manager
TYPED OR PRINTED NAME AND TITLE

DATE: April 30, 2010

TELEPHONE NUMBER: 618-451-3456

RECEIVED

MAY 03 2010

Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

ESS0033

R009596

PROCESS DATA

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA	REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
0033	BOF0033P	BOF (2-Vessels) ESP	30300914		72080043	08/1972			15	0	23	62

TYPICAL OPERATON - UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
11.70	7	52	4,272.00	217.60	2,545.92	929,600.90	435,206	No

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Carbon Monoxide	1	8.99300	1,956.90564	1,432.73746
Lead	5	0.28680	0.28680	0.28680
Nitrogen Oxides	5	0.03890	8.46476	6.19743
Particulate Matter	5	0.14680	31.94415	23.38773
Particulate Matter less than 10 Microns in Diameter	1	0.14680	31.94415	23.38773
Particulate Matter less than 2.5 Microns in Diameter	1	0.00440	0.95745	0.70099
Volatile Organic Compounds	5	0.00600	1.30562	0.95590

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
15	7	13

Hours / Season	Start Time	End Time
1,344	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
159.32	318,634	No

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100 %

CAPTURING STACKS

ID	Efficiency (%)

R009597

PROCESS DATA

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA	REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
0034	BOF0034P	BOF (2-Vessels) Roof Monitor	30300917		72080043	08/1972			15	0	23	62

TYPICAL OPERATON - UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
11.70	7	52	4,272.00	217.60	2,545.92	929,600.90	435,206	No

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Lead	5	0.01290	0.01290	0.01290
Particulate Matter	5	0.09870	21.47744	15.72458
Particulate Matter less than 10 Microns in Diameter	5	0.06614	14.39228	10.53722
Particulate Matter less than 2.5 Microns in Diameter	5	0.02270	4.93959	3.61650

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
15	7	13

Hours / Season	Start Time	End Time
1,344	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
159.32	318,634	No

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100 %

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electorstatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS

ID	Efficiency
Included in Control Eff.	

CAPTURING STACKS

ID	Efficiency
BOF0045S	100 %

R009599

Report Generated Date: Apr 25, 2011

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DAPC - ANNUAL EMISSIONS REPORT - 2010

119813AAI United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

SOURCE IDS AND LOCATION

FINDS:	ILD980606917	LONGITUDE:	90:8:42
AIRS:	17-119-0153	LATITUDE:	39:41:55
FEIN:	25-0687210	YEAR OF DATUM:	
D & B:		SCALE:	
SIC 1:	3312	DESCRIPTION:	
SIC 2:		ACCURACY:	
SIC 3:		MEASUREMENT:	

[redacted] EPA USE ONLY

SOURCE ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE:
FAX: EXT:

CONTACT: Michael McLean
PHONE: 618-451-3451
FAX: 618-451-4020

ANNUAL EMISSION REPORT MAILING ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE:
FAX: EXT:

CONTACT: Michael McLean
PHONE: 618-451-3451
FAX: 618-451-4020

☐ NO CHANGES

☐ CHANGES INDICATED

ALL ANNUAL EMISSIONS REPORT DATA VERIFIED, MODIFIED OR PROVIDED ON BEHALF OF THE COMPANY NAMED ABOVE, WHETHER SUBMITTED ELECTRONICALLY OR IN WRITING, REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Richard Veitch

AUTHORIZED SIGNATURE
Richard Veitch
General Manager
TYPED OR PRINTED NAME AND TITLE

4/30/2011
DATE April 30, 2011

TELEPHONE NUMBER 618-451-3241

RECEIVED

MAY 04 2011

Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

ESS0033

R009600

PROCESS DATA

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA	REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
0033	BOF0033P	BOF (2-Vessels) ESP	30300914		72080043	08/1972			25	26	26	23

TYPICAL OPERATON - UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
24.00	7	52	8,760.00	304.28	7,302.72	2,665,468.27	608,554	No

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Carbon Monoxide	1	8.99300	2,736.36486	2,815.30508
Lead	5	0.28680	0.28680	0.28680
Nitrogen Oxides	5	0.03890	11.83638	12.17785
Particulate Matter	5	0.14680	44.66789	45.95650
Particulate Matter less than 10 Microns in Diameter	1	0.14680	44.66789	45.95650
Particulate Matter less than 2.5 Microns in Diameter	1	0.00440	1.33882	1.37744
Volatile Organic Compounds	5	0.00600	1.82566	1.87833

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
24	7	13

Hours / Season	Start Time	End Time
2,208	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
313.06	626,110	No

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100 %

CAPTURING STACKS

ID	Efficiency (%)

R009601

PROCESS DATA

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA	REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
0034	BOF0034P	BOF (2-Vessels) Roof Monitor	30300917		72080043	08/1972			25	26	26	23

TYPICAL OPERATON - UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
24.00	7	52	8,760.00	304.28	7,302.72	2,665,468.27	608,554	No

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Lead	5	0.01290	0.01290	0.01290
Particulate Matter	5	0.09870	30.03216	30.89854
Particulate Matter less than 10 Microns in Diameter	5	0.06614	20.12489	20.70547
Particulate Matter less than 2.5 Microns in Diameter	5	0.02270	6.90709	7.10635

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
24	7	13

Hours / Season	Start Time	End Time
2,208	00.00	23:59

Rate / Season	PWR (lb/hr)	Confidential
313.06	626,110	No

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100 %

R009602

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electorstatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS

ID	Efficiency
Included in Control Eff.	

CAPTURING STACKS

ID	Efficiency
BOF0045S	100 %

R009603

Report Generated Date: Apr 29, 2010

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DAPC - ANNUAL EMISSIONS REPORT - 2009

119813AAI United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

SOURCE IDS AND LOCATION

FINDS:	ILD980606917	IEPA USE ONLY	LONGITUDE:	90:8:42
AIRS:	17-119-0153	IEPA USE ONLY	LATITUDE:	39:41:55
FEIN:	25-0687210	IEPA USE ONLY	YEAR OF DATUM:	
D & B:			SCALE:	
SIC 1:	3312		DESCRIPTION:	
SIC 2:			ACCURACY:	
SIC 3:			MEASUREMENT:	

SOURCE ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE:
FAX: EXT:

CONTACT: Jill Foust
PHONE: 618-451-3391
FAX: 618-451-4020

ANNUAL EMISSION REPORT MAILING ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
PHONE:
FAX: EXT:

CONTACT: Robert Ribbing
PHONE: 618-451-4026
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☐ NO CHANGES

☐ CHANGES INDICATED

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Richard Veitch

AUTHORIZED SIGNATURE
Richard Veitch
General Manager
TYPED OR PRINTED NAME AND TITLE

DATE: April 30, 2010

TELEPHONE NUMBER: 618-451-3456

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BUREAU OF AIR
STATE OF ILLINOIS

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23
AUG ~~3 2~~ 2013
REVIEWER JRM

ESS0033

PROCESS DATA

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA	REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
0033	BOF0033P	BOF (2-Vessels) ESP	30300914		72080043	08/1972			15	0	23	62

TYPICAL OPERATON - UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
11.70	7	52	4,272.00	217.60	2,545.92	929,600.90	435,206	No

EMISSIONS INFORMATION

Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Carbon Monoxide	1	8.99300	1,956.90564	1,432.73746
Lead	5	0.28680	0.28680	0.28680
Nitrogen Oxides	5	0.03890	8.46476	6.19743
Particulate Matter	5	0.14680	31.94415	23.38773
Particulate Matter less than 10 Microns in Diameter	1	0.14680	31.94415	23.38773
Particulate Matter less than 2.5 Microns in Diameter	1	0.00440	0.95745	0.70099
Volatile Organic Compounds	5	0.00600	1.30562	0.95590

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
15	7	13

Hours / Season	Start Time	End Time
1,344	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
159.32	318,634	No

CAPTURING CONTROLS

ID	Efficiency (%)
BOF0004C	100 %

CAPTURING STACKS

ID	Efficiency (%)

R009605

PROCESS DATA

ID INFORMATION					GENERAL INFORMATION				PERCENT THROUGHPUTS			
IEPA	REDMS ID	Source Description	SCC Number	Mode	Permit Number	Began Operation	Ceased Operation	Identical Points	Dec-Feb	Mar-May	Jun-Aug	Sep-Nov
0034	BOF0034P	BOF (2-Vessels) Roof Monitor	30300917		72080043	08/1972			15	0	23	62

TYPICAL OPERATON - UNITS: TONS THROUGHPUT								
Hours / Day	Days / Week	Weeks / Year	Hours / Year	Rate / Hour	Rate / Day	Rate / Year	PWR (lb/hr)	Confidential
11.70	7	52	4,272.00	217.60	2,545.92	929,600.90	435.206	No

EMISSIONS INFORMATION				
Pollutant Code	Estimation Method	Emission Factor (lb/ton)	Reported Emission Rate (lb/hr)	Ozone Season Reported Emission Rate (lb/hr)
Lead	5	0.01290	0.01290	0.01290
Particulate Matter	5	0.09870	21.47744	15.72458
Particulate Matter less than 10 Microns in Diameter	5	0.06614	14.39228	10.53722
Particulate Matter less than 2.5 Microns in Diameter	5	0.02270	4.93959	3.61650

PEAK OZONE SEASON OPERATION UNITS: TONS THROUGHPUT

Hours / Day	Days / Week	Weeks / Season
15	7	13

Hours / Season	Start Time	End Time
1,344	00:00	23:59

Rate / Season	PWR (lb/hr)	Confidential
159.32	318,634	No

CAPTURING CONTROLS

ID	Efficiency (%)

CAPTURING STACKS

ID	Efficiency (%)
BOF0046S	100 %

CONTROL DEVICE DATA

ID INFORMATION

IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electorstatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS

ID	Efficiency
Included in Control Eff.	

CAPTURING STACKS

ID	Efficiency
BOF0045S	100 %

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Report Generated Date: Aug 15, 2011

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DAPC - ANNUAL EMISSIONS REPORT - 2010

R009607

119813AAI United States Steel Corp. - Granite City Works
OWNER:
FACILITY PHONE:

- SOURCE DATA -

SOURCE IDS AND LOCATION

FINDS:	ILD980606917	LONGITUDE:	90:8:42
AIRS:	17-119-0153	LATITUDE:	39:41:55
FEIN:	25-0687210	YEAR OF DATUM:	
D & B:		SCALE:	
SIC 1:	3312	DESCRIPTION:	
SIC 2:		ACCURACY:	
SIC 3:		MEASUREMENT:	

[redacted]

SOURCE ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
GRANITE CITY, IL 62040
CONTACT:
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FAX: EXT:

CONTACT: Michael McLean
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ANNUAL EMISSION REPORT MAILING ADDRESS

UNITED STATES STEEL CORPORATION
GRANITE CITY WORKS
20TH & STATE STREET
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Richard Veitch

AUTHORIZED SIGNATURE — DATE: August 16, 2011
Richard Veitch
General Manager
TYPED OR PRINTED NAME AND TITLE — TELEPHONE NUMBER: 618-451-3241

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BUREAU OF AIR
STATE OF ILLINOIS

ESS0033

R009608

CONTROL DEVICE DATA

ID INFORMATION	
IEPA ID	R-EDMS ID
4	BOF0004C

GENERAL INFORMATION

Control Description	Permit Number	Began Operation	Ceased Operation	Control Code	Control Code Description
BOF ESP	72080043	6/1/67		010	Electorstatic Precipitator, high efficiency

REMOVAL EFFICIENCY

Pollutant Code	Efficiency	Method	Method Description
LEAD	99.43	3	Manufacturer's design value
PM	99.43	3	Manufacturer's design value
PM10	99.43	3	Manufacturer's design value
PM2.5	99.43	3	Manufacturer's design value

CAPTURING CONTROLS

ID	Efficiency
Included in Control Eff.	

CAPTURING STACKS

ID	Efficiency
BOF0045S	100 %

R009609

Illinois EPA
Document Index Form

Batch ID: A000962

Doc ID: 2169906

Bureau ID: 119813AAI **Illinois EPA ID:** 170000125683

Location Name: US Steel Granite City

Category: 03M

Document Date: 12/17/2012

Permit ID: 95010001

Doc ID:

Batch ID:

IEPA ID:

Interest ID:

Cat ID:

Date:

Permit ID:

Permit Log:

Keyword:

Comment:

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 22 2013
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United States Steel Corporation
Granite City Works and
IEPA Memorandum of Understanding

The Memorandum of Understanding (MOU or Agreement) is entered into by and between United States Steel Corporation (U. S. Steel) and the Illinois Environmental Protection Agency (IEPA), and is dated and effective as of the last date of signature in the signature block.

U. S. Steel and IEPA have reached an Agreement that will achieve reductions in emissions of particulate matter from U. S. Steel's Granite City Works, with the specific intent of reducing the emissions of particulate matter$_{2.5}$ (PM2.5). This MOU sets forth the terms of the Agreement between U. S. Steel and IEPA and sets forth the intended regulatory uses for those emission reductions. This agreement does not relieve U.S. Steel from the continuing obligation to comply with requirements of applicable Federal and State regulations, construction or operating permits, and other applicable requirements to control emissions.

1. Enhancements to Compliance Procedures
    a. Within 2 months of the effective date of this agreement, U. S. Steel shall begin installation of an enhanced operational monitoring system for the capture systems for particulate matter emissions from the Basic Oxygen Furnaces (BOF), including installation, operation and maintenance of monitoring devices to verify the performance of each capture system during the various steps in the steelmaking process. This will include establishment of values of operating parameters that reliably indicate and ensure adequate capture of emissions by each existing hood.
    b. Within 3 months of beginning operation of any additional new pollution control equipment at the BOF, as prescribed in this MOU, U. S. Steel shall implement enhanced operational monitoring for such new capture system for particulate matter. Such implementation will include installation, operation and maintenance of appropriate monitoring devices. These devices will verify the performance of the new capture system. Such monitoring devices will be used to establish values of operating parameters that reliably indicate and ensure adequate capture of emissions by each new hood.
    c. Within 2 months of the effective date of this agreement, U. S. Steel shall conduct opacity readings of emissions escaping from any openings in the Basic Oxygen Process Furnace (BOPF) building in accordance with USEPA Method 9 in 40 CFR Part 60, Appendix A. These readings shall be performed for at least five (5) days out of every seven (7). A day is defined as any day when a BOF is in operation for a minimum of four hours during conditions that are acceptable for Method 9 readings. A minimum of 60 consecutive minutes of opacity readings must be obtained and must encompass at least one steel production cycle. A production

cycle is defined as the beginning of scrap charging to the completion of deslagging of the steelmaking vessel. Results of these readings shall be reduced to three (3) minute rolling averages. U.S. Steel shall maintain appropriate records for all opacity measurements and these records shall be made available upon request from the IEPA.

d. U.S. Steel may, at some later date, submit a formal request to IEPA to streamline the monitoring requirements. This request shall be submitted as an application for a significant modification to the CAAPP permit.

2. Emission Limits
   a. All particulate matter emission limits in this MOU are expressed in terms of particulate as would be measured by USEPA Methods 5, 5D or 17.
   b. As of January 1, 2012, U. S. Steel shall comply with the following requirements for particulate matter emissions:
      i. Particulate matter emissions from the basic oxygen process (BOP) that exit from the electrostatic precipitator stack must not exceed 0.01 gr/dscf.
      ii. Particulate matter emissions from hot metal desulfurization and reladling (BOF Hot Metal Transfer and Desulfurization Baghouse(s)) that exit from the baghouse must not exceed 0.005 gr/dscf.
      iii. Particulate matter emissions from slag skimming (BOF Slag Skimming Baghouse(s)) that exit from the baghouse stack must not exceed 0.005 gr/dscf.
      iv. Particulate matter emissions from ladle metallurgy operations (LMF Baghouse) that exit from the baghouse stack must not exceed 0.005 gr/dscf.
   c. As of March 31, 2013, or such later date established pursuant to paragraph 4(c)(v) below, U. S. Steel will comply with the following requirements for particulate matter emissions from tapping:
      i. Emissions shall be controlled by a new baghouse.
      ii. Emissions that exit from this baghouse stack must not exceed 0.005 gr/dscf.

3. Within 2 months of the effective date of this Agreement U. S. Steel shall submit an application for a federally enforceable permit or permits to incorporate the requirements of Sections 1 and 2 above. The federally enforceable permit or permits shall include the requirements imposed by Sections 1 and 2 and appropriate requirements for emission testing, monitoring, recordkeeping and reporting associated with these requirements.

4. Emission Reduction Projects
   a. Steam Rings for the Oxygen Lances
      i. Within 6 months of the effective date of the Agreement, U. S. Steel will complete basic engineering of steam rings for the oxygen lances in the BOP shop.

ii. U. S. Steel will submit a construction permit application and an installation schedule to IEPA within 30 days of completion of the basic engineering. In consideration of the need to begin operation of the steam rings by October 31, 2011, U. S. Steel shall commence construction of the steam rings within 40-days of issuance of a final construction permit, assuming that no appeal(s) or challenge(s) of the Permit or the requirements therein have been filed with the Pollution Control Board or Federal Court within that 40-day period.

b. U. S. Steel will complete the installation and begin operation of the steam rings no later than October 31, 2011 provided that the required construction permit is obtained in a reasonable time and not appealed.

c. Secondary Emission Control for Tapping

i. Within 9 months of the effective date of the Agreement, U. S. Steel will complete the basic engineering for the installation and operation of a dedicated tapping emission control system that includes a fabric filter control device (baghouse).

ii. The tapping emission control system will be designed for optimal capture to minimize emissions from tapping, which have the potential of escaping to the atmosphere from the BOPF building. The air pollution control device for the captured emissions will be designed to comply with a particulate matter emission rate of 0.005 grains per dry standard cubic feet exhaust, at the stack.

iii. Within 30 days of the completion of the basic engineering for the new control system, U. S. Steel will submit a construction permit application for the new system to the IEPA that contains a schedule for the design engineering, construction and initial start up of the new tapping emission control system.

iv. In consideration of the need to begin operation of the secondary emission controls for tapping by March 31, 2013, IEPA shall act on all required permit(s) within three months of receipt of permit application(s) from U. S. Steel. U. S. Steel shall commence construction of the secondary emission controls for tapping within 40-days of issuance of a final construction permit, assuming that no appeal(s) or challenge(s) of the Permit or the requirements therein have been filed with the Pollution Control Board or Federal Court within that 40-day period.

v. U. S. Steel will begin operation of the new tapping emission control system no later than March 31, 2013 provided that required permits are obtained in a reasonable time and not appealed.

d. Secondary Emission Control for Charging
   i. As part of the engineering for the new tapping emission control system, U. S. Steel will also evaluate the current emission control system for charging and potential projects to reduce particulate matter emissions from charging. As part of this evaluation, U. S. Steel will evaluate improvements to the capture efficiency achieved for charging emissions and ducting some or all of the captured charging emissions, which currently are controlled by the electrostatic precipitator, to the new control device for tapping or another new baghouse.
   ii. If the evaluation completed in paragraph 4(d)(i) does not support implementing additional projects to reduce particulate emission from charging, U. S. Steel will submit within 9 months of the effective date of the Agreement, an evaluation report that includes a summary of the evaluation, statement on decision criteria for potential projects, and incremental cost per ton of pollutant reduction analysis.
   iii. If the evaluation completed in paragraph 4(d)(i) does support implementing additional projects to reduce particulate emissions from charging, U. S. Steel will complete within 9 months of the effective date of the agreement the basic engineering for installation and operation of an upgrade to the existing charging control system. Future submittals will coincide with the tapping hood schedule identified in paragraph 4(c)(iii) – 4(c)(v).

5. Regulatory Uses of Emission Reductions
   a. For the Granite City BOP, the particulate emission reductions set forth in the MOU will be incorporated into the Illinois 1997 $PM_{2.5}$ National Ambient Air Quality Standard State Implementation Plan (NAAQS SIP) submitted to U. S. EPA in accordance with 40 CFR §51.1001, et seq., and §§ 110 and 172 of the Clean Air Act
   b. IEPA shall use its best efforts to support and represent that the requirements of this MOU satisfy U. S. Steel's obligations towards Illinois EPA's requirement to demonstrate compliance with the 1997 $PM_{2.5}$ NAAQS.

c. IEPA will provide U. S. Steel with an opportunity to review and provide comments on the 1997 $PM_{2.5}$ modeled attainment demonstration.
d. U. S. Steel and IEPA shall mutually support and use best efforts to obtain the appropriate permits and approvals incorporating the terms of this agreement to make the reductions federally enforceable so that they can be incorporated into the Illinois 1997 $PM_{2.5}$ SIP.
e. U. S. Steel's commitments and obligations under this MOU are subject to and conditioned upon: 1) the issuance and sustained validity of a federally enforceable permit or permits containing the particulate matter emission reductions requirements set forth in the MOU; 2) IEPA's approval that the particulate matter emission reductions satisfy U. S. Steel's requirement for the 1997 $PM_{2.5}$ NAAQS SIP; and 3) IEPA not pursuing a regulation pursuant to the 1997 PM2.5 NAAQS containing additional restrictions for the Granite City Works BOP. U. S. Steel and IEPA shall mutually support and use best efforts to obtain the appropriate permits and SIP approvals based on this agreement.
f. In developing rules, regulations, or state implementation plan revisions designed to comply with the $PM_{2.5}$ NAAQS, IEPA, taking into account all emission reduction efforts and other appropriate factors, will use best efforts to seek $PM_{2.5}$ reductions in regards to future NAAQS from other sources before seeking additional emission reductions from the U. S. Steel BOP.

6. Force Majeure

U. S. Steel shall not be liable for any failure or delay in performance under this MOU (other than for delay for submitting a permit application) to the extent said failures or delays are caused by extraordinary circumstances beyond U. S. Steel's reasonable control and occurring without its fault or negligence, provided that, U. S. Steel gives prompt written notice, with full details following the occurrence of the cause relied upon. Dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

For United States Steel Corporation	For Illinois EPA
MS Williams Michael S. Williams Senior Vice President – North American Flat Roll Operations	Douglas P. Scott Douglas P. Scott Director, Illinois EPA
Date: 6 / 30 / 2010	Date: 7 / 1 / 2010

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 16 2012

REPLY TO THE ATTENTION OF

RECEIVED
STATE OF ILLINOIS
AUG 20 2012
Environmental Protection Agency
BUREAU OF AIR

Edwin C. Bakowski, P.E.
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

Dear Mr. Bakowski:

The U.S. Environmental Protection Agency has reviewed the draft Prevention of Significant Deterioration (PSD) permit revision (Application No. 95010001) prepared by the Illinois Environmental Protection Agency (IEPA) for U.S. Steel Granite City, located at Route 203 and 20th Street, Granite City, Illinois. The draft PSD permit revision makes various changes to the original permit to accommodate a planned emission reduction project for particulate emissions from the Basic Oxygen Furnaces (BOFs). EPA appreciates the potential air quality benefits of the project and the efforts that IEPA and U.S. Steel Granite City have made to ensure the success of the project.

EPA has the following comments on the draft PSD permit revision:

1. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP));[1] and condition 10 and Attachment A (procedures to ensure proper operation of the BOF's ESP).[2] IEPA

[1] Condition 9(a) of the current PSD permit (Permit No. 95010001) requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using EPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

[2] We also note that Condition 8 (visible emissions from the BOF shop) would be revised to require compliance with the 20% opacity limit using the procedures in 35 IAC 212.446(c) instead of the prescribed procedures in Conditions 9(a) and (b). The permit record does not indicate that the original Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). The original condition 8 appears to be more stringent than the revised condition 8 since it required opacity observations to be conducted on at least a weekly basis pursuant to conditions 9(a) and 9(b). Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and/or state or federal rules, such as the National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 C.F.R. Part 63, Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, at 1-3. Based on our review of IEPA's rationale for the proposed changes to the PSD permit, the key element of this rationale is that compliance with the monitoring provisions of the Iron and Steel NESHAP is sufficient for assuring compliance with the relevant PSD permit limits as originally established. Accordingly, EPA recommends that IEPA revise the permit to clearly establish a connection between the PSD permit and the Iron and Steel NESHAP. Such a connection could be established by including conditions in the PSD permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant PSD permit limits. This information would then be appropriately re-iterated in the CAAPP permit. This is of concern because EPA believes that the CAAPP permit may not be used to supersede, void, replace, or otherwise eliminate the independent enforceability of terms and conditions in the PSD permit.[3] Additionally, the PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the PSD permit rather than to the related conditions of the CAAPP permit that address the provisions of the NESHAP. As a preconstruction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

2. For conditions that are rendered "unnecessary" only after the baghouse becomes operational, please specify in the revised permit that the original permit remains effective until the new baghouse becomes operational. The permit record indicates that the following conditions, which are proposed for deletion, are rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e) (recordkeeping for ESP flow rate for charging and tapping), 13(a) and (c) (monitoring for waste gas suction for the ESP), and 13(d) (monitoring for static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, at 3-6. By specifying in the revised permit that the original permit remains effective until the new baghouse becomes operational, it would ensure that the source continues to demonstrate compliance with permit limits in the same manner as originally authorized, while construction of the baghouse is ongoing.

[3] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO. May 20, 1999. Available at http://www.epa.gov/ttn/caaa/t5/memoranda/hodan7.pdf.

3. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 C.F.R. § 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at 8. Clarification is necessary for ascertaining the actual amount of the projected overall emissions reduction due to the project.

We look forward to working with you to ensure that the revised PSD permit meets all federal requirements, and that the record provides adequate support for the permit decision. If you have any questions, please feel free to contact me at (312) 353-4761 or David Ogulei, of my staff, at (312) 353-0987.

Sincerely,

Genevieve Damico
Chief
Air Permits Section

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

GRANITE CITY TOWNSHIP HALL

GRANITE CITY, ILLINOIS

CONCERNING THE PROPOSED ISSUANCE

OF AIR POLLUTION CONTROL PERMITS

FROM UNITED STATES STEEL

CORPORATION IN GRANITE CITY, ILLINOIS

PUBLIC HEARING

JULY 18, 2012

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Hearing panel:

Mr. Dean Studer, Hearing Officer

Illinois Environmental Protection Agency

Mr. Kevin Smith, Permit Engineer

IEPA Bureau of Air

Mr. Anatoly Belogorsky, Permit Engineer

IEPA Bureau of Air

Court Reporter: Angie R. Kelly, CSR/CCR

(Starting time of hearing: 7:03 p.m.)

I N D E X

Speakers: Page

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Kevin Smith.....9

Kathy Andria.....17,28

Erika Belmont.....22

Robert Bewkes.....25

E X H I B I T S

(None.)

(On the record at 7:03 p.m.)

HEARING OFFICER STUDER: Before I read my opening statement, I would ask that if you have a cell phone or pager that you please silence it at this time, if you haven't already done so.

Good evening everyone, my name is Dean Studer, and I'm assuming everybody can hear me? My name is Dean Studer I'm hearing officer for the Illinois Environmental Protection Agency. On behalf of the Interim Director John Kim, I welcome you to tonight's hearing. My purpose tonight is to ensure these proceedings run properly, according to rules and are conducted in a fair, efficient manner. Personally, I will not be responding to specific technical issues related to the permits, but will defer such issues to the technical staff with me.

This an informational hearing for Illinois EPA to accept public comments regarding three air pollution control permit applications from United States Steel Corporation, otherwise referred to as US Steel. US Steel operates an existing integrated steel mill located at 1951 State Street here in Granite City.

The primary application and the focus of tonight's hearing is a construction permit application, which addresses an emission reduction project planned for existing equipment at the steel mill. The emission reduction project includes a new control system for particulate emission designed to reduce

particulate emissions from existing operations at the steel mill. This is an opportunity for you to comment on the construction permit.

US Steel has also requested a revision to their operating permit, that is their Clean Air Act Permit Program, and that's otherwise referred to as CAAPP permit, to include the emission reduction project. No other changes are proposed for US Steel's CAAPP permit. Accordingly, the only comments relevant to the CAAPP permit in this proceeding are those involved with the proposed emission reduction project.

Finally, US Steel has requested a revision of a previously issued construction permit that addresses existing operations at the steel mill. The proposed revisions to this construction permit would remove certain requirements from this prior permit that would no longer be appropriate or possible with the new control equipment. As with the CAAPP permit, no other changes are proposed for the revised construction permit. Accordingly, the only comments relevant to the revised construction permit in this proceeding are those involved with the proposed emission reduction protect.

The project will not constitute a modification under the federal rules for Prevention of Significant Deterioration PSD, under 40 CFR 52.21, or Illinois' rules for Major Stationary Sources Construction and Modification, and those state rules are found in 35 Illinois Administrative Code Part 203. The Illinois

EPA has made preliminary determination that requested permits may be issued and has prepared draft permits for public review. The Illinois EPA is holding this hearing for the purpose of accepting comments from the public on the proposed issuance of these permits prior to actually making final decisions on the applications.

The public hearing is being held under the provisions of the Illinois EPA's procedure for permit and closure plan hearings, which can be found at 35 Administrative Code, Part 166, Subpart A. Copies of this procedures can be accessed on the website for Illinois Pollution Control Board at www.ipcb.state.il.us, or can be obtained from me, upon request.

An informational public hearing means exactly that. It is an opportunity for you to provide information to Illinois EPA concerning these permits as previously discussed. This is not a contested case hearing.

I would like to explain how tonight's hearing is going to proceed. First, I will have a Illinois EPA staff introduce themselves and identify their responsibilities within the agency in regard to these permitting action. Mr. Kevin Smith is a permit engineer in the Bureau of Air will then make a brief statement. This will be followed by additional instructions on how I will be taking oral comments during the hearing this evening and then I will allow the public to begin providing comments.

You are not required to provide your comments orally. Written comments are given the same consideration and same weight, and may be submitted to the Illinois EPA at any time during the comment period, which actually started 45 days ago, and goes through August 17, 2012. All comments submitted by mail must be postmarked no later than August 17, 2012. Although we will continue to accept comments through that date, tonight is the only time that we will accept oral comments.

The decision date in this matter by the Illinois EPA will depend upon the number and nature of comments received, as well as other factors.

Any person who wants to make oral comments may do so, as long as the statements are relevant to the issues at hand and time allows. If you have not completed a registration card at this point, please see Michelle Tebrugge at the registration area, and she will provide you with a registration card. Please be sure to mark the appropriate box on the card if you would like to make comments at tonight's hearing. If you have lengthy comments, you may submit them to me in writing before the end of the comment period, and I will ensure that they are included in the hearing record as exhibits.

Again, please keep your comments relative to issue at hand, the emissions and reduction project. If your comments fall outside of the scope of this hearing, I may ask you to proceed to your next issue.

US Steel is also free to respond to issues that are raised, if willing to do so, but I am not in the position to require them to do so. I will not allow the speakers to argue or engage in prolonged dialogue with members of our panel. I also will not allow members of the public to address comments to other members of the public. Comments from the public are to be addressed to the hearing panel and the court reporter.

For the purpose of allowing everyone to have a chance to comment, I ask that everyone keep their comments to nine minutes.

In addition, I'd like to stress we'd like to avoid unnecessary repetition. If anyone before you had already presented what is contained in your comments, please skip over those issues when you speak. Of someone speaking before you has already said what you desired to say, you may pass when I call your name and come forward. Again, we are also accepting written comments, which will become part of the official record in this matter and will be considered.

All who legibly complete a registration card or submit written comments in this matter during the comment period will be notified of the final decision in this matter and of the availability of the responsiveness summary. In the responsiveness summary, the Illinois EPA will respond to all significant issues that were raised at this hearing or submitted to me prior to the close of the comment period. The record in

this matter will close on August 17, 2012. Again I will accept written comments as long as they are postmarked by August 17, 2012.

While the record is open all relevant comments and documents and data will be placed into the hearing record as exhibits. Please send all written documents to my attention, they should be mailed to Dean Studer, Hearing Officer, Office of Community Relations, regarding US Steel Air Permits, Illinois EPA, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois, 62794-9276. The address is also given on the public notice for this hearing tonight.

At this time, again I remind you if you haven't already done so, please silence all cellphones and pagers, if you have not already done so. I will now have the Illinois EPA staff present here tonight to introduce themselves, and then Kevin Smith will make a brief statement regarding permit.

MR. SMITH: Hi, I'm Kevin Smith, permit engineer for the Illinois EPA Bureau of Air Permit Section. I'll be giving an overview of the draft permits for the new baghouse capture and control system for the basic oxygen process furnaces at the US Steel, Granite City works this evening.

MR. BELOGORSKY: Good evening, I'm Anatoly Belogorsky. I am from Illinois EPA Clean Air Act Permit Section, and if you have any further questions about baghouse program I will be available.

MR. SMITH: US Steel has agreed to install a baghouse control system pursuant to agreement between US Steel and Illinois EPA. The purpose of the agreement is to reduce emissions of particulate matter 2.5 from the existing BOP furnace shop. Consistent with the agreement, US Steel submitted an application to construct a new baghouse capture and control system. This permitting process will cover three distinct permitting actions; first a construction permit for the new baghouse capture and control system. Second, modifications to the facilities existing CAAPP permit through the integrated permitting process and third, revisions to an existing PSD permit.

The proposed draft construction permit for the baghouse control system would authorize an emissions reduction project for the particulate matter from the charging and tapping stages of the steel making process for two existing BOPF's at the source. The existing electrostatic precipitator ESP would continue to be used to control particulate emissions from these furnaces during the refining stage of the steel making process.

The permit containing operating limitations, monitoring, recordkeeping and reporting requirements for the capture and control systems that are appropriate for it's design and representative and reliable indicators of the performance of the capture and control system.

Testing is required for the new baghouse control

system and the existing ESP to demonstrate initial compliance with the permit limits; follow-up testing is also required within one year of initial operation of the new baghouse system.

In conjunction with the issuance of the construction permit, Illinois EPA is proposing to authorize certain changes to the conditions in the current CAAPP permit for Granite City Works. This is because the CAAPP permit contains certain requirements for control of the BOP furnaces with the existing ESP that would no longer be feasible or necessary when particulate emissions are controlled by the combination of the new baghouse and existing electrostatic precipitator ESPs that would no longer be feasible or necessary when particulate emissions are controlled by the combination of the new baghouse and existing ESP control systems. Therefore, these CAAPP permit conditions will be replaced with new provisions for the new control configuration. In order to clearly address both current requirements and future requirements for the BOP furnaces, the draft construction permit is being processed by means of the integrated processing procedure.

Consequently, the draft construction permit is subject to procedural requirements that are substantially equivalent to those that apply to CAAPP permits and will provide for future requirements for the furnaces with the baghouse control system as they will be set forth in the CAAPP permit. However, until the new baghouse system begins operation, the basic oxygen

furnaces would continue to be subject to the conditions in Section 7.5 of the current CAAPP permit.

In addition to the modifications of the CAAPP permit, for the new baghouse control system, US Steel has requested to make revisions to an existing PSD, prevention of significant deterioration construction permit. The PSD permit includes conditions for the controlling of emissions from the BOPF with electrostatic precipitator during the charging and tapping metal processing steps. The revised permit would not include operational and other requirements for the BOP furnaces and the existing ESP control system that would be inconsistent with the future operation of the furnaces with both the baghouse and ESP control systems. Revisions to this permit would also include replacement of operational requirements for the BOP furnaces that are now considered obsolete or outdated given new requirements that apply to the furnaces adopted by USEPA. However, these revisions would not involve the emissions limits for the BOP furnaces that were set by this permit.

In summary, US Steel applied for permits for an emission reduction project for the BOPF that will cover a total of three permits including a construction permit for the new baghouse capture and control system, modification to the facilities existing CAAPP permit to incorporate the new construction permit conditions through integrated permitting processing and revisions to an existing PSD permit to reflect

the new control strategy for the BOPF's.

Illinois EPA is proposing to grant the emissions reduction project permits for the facility. We welcome any comments or questions on our proposed action as they pertain to the emissions reduction permit. Thank you.

HEARING OFFICER STUDER: Thank you Kevin. I'll go ahead and give some further instructions on how we take comments this evening.

While the issues raised tonight may indeed be heartfelt concerns to many of us in attendance, applause is not appropriate during the course of this hearing. On a similar note, booing, hissing and jeering are also not appropriate and will not be allowed tonight.

Secondly, I am not going to allow statements to be made tonight that do not relate to the issues involved with the proposed emission reduction project planned for the two basic oxygen process furnaces at the steel mill. Statements and comments that are of a personal nature or reflect on the character or motive of a person or group of people are not appropriate in this hearing. If statements or comments begin to drift into this area I may interrupt the person speaking and ask that they proceed to the next relevant issue. As hearing officer I intend to treat everyone here tonight in a courteous, respectful and professional manner. I ask that the members of the panel and public do the same. If the conduct of persons

attending this hearing should become unruly, I am authorized to adjourn this hearing should the actions warrant. In such a case, the Illinois EPA would still accept written comments through the close of the comment period.

Since we have a limited time in which to conduct this hearing, Illinois EPA staff members will be responding to issues primarily for clarification purposes. We are here tonight to listen to environmental issues. You may disagree with some of the statements and comments made tonight, but this is a public hearing and everyone has a right to express their comments on this matter.

Again, written comments are given the same consideration as oral comments received during the hearing and may be submitted to the Illinois EPA at any time within the public comment period which ends at the end of the day on August 17, 2012. Excuse me, yeah, August 17, 2011. Although we will continue to accept comments through that date, tonight is the only time that we will accept oral comments. Any person who wishes to make an oral comment may do so as long as the statements are relevant to the issues at hand and time allows, as previously discussed.

If you have lengthy comments, please consider giving only a summary of those comments during the hearing and then submitting comments in their entirety to me in writing before the close of the comment period. I will ensure that they

are included in the hearing record as an exhibit. Please keep your comments relevant to the issues at hand. Again, if comments fall outside of the scope of this hearing, I may ask you to proceed to your next issue. For the purpose of allowing everyone to have a chance to comment and to make sure we conduct this hearing in a timely fashion, I will impose a time limit of five minutes per speaker. If everyone has had an opportunity to speak and time still allows, I may allow those who did not initially desire to speak to do so. In the event that we cannot accommodate everyone who wishes to make comments this evening, you are asked to submit your comments to us in writing. Again, written comments are given the same weight as comments made orally at this hearing.

Again, I stress that I want to avoid unnecessary repetition. Once a point is made, it makes no difference if a point is made once or whether it's made 99 times; it will be considered and will be reflected only once in the responsiveness summary. The final decision of Illinois EPA will not be based on how many people support or oppose this project, but rather upon the record and whether the facility will comply with applicable laws, regulations and requirements for permit issuance.

We have a court reporter here tonight who is taking a record of these proceedings for the purpose of us compiling the administrative record. Therefore for her benefit, please keep

the general background noise in the room to a minimum. So that she can hear everything that is said. Illinois EPA will post a transcript of this hearing on our web page in the same general place where the hearing notice, project summary and draft permits have been posted. It is my desire to have this posted in about two to two and a half weeks following the close of this hearing, but the actual date will depend on when I get the transcript back from the court reporter.

When it is your turn to speak, I will call your name to come forward. For the record, you should state your name and if applicable, any governmental mental body, an organization that you represent. If you are not representing a governmental body, an organization or an association, you may simply indicate that you are a concerned citizen or a member of the public. For the benefit of the court reporter, I ask that you spell your last name. If there are alternate spellings for your first name, you may also spell your first name. Once you spell your name, I will start timing you, and you will have nine minutes to complete your comments.

I ask that while you are speaking that you direct your attention to the hearing panel and to the court reporter to ensure that accurate record of your comments can be made. Prolonged dialogue with members of the hearing panel or with others here in attendance will not be permitted. Comments directed to the audience are also not allowed. Again, I remind

everyone that the focus of this hearing is the environmental issues associated with the permits required to address the emissions reduction project planned for the two basic oxygen process furnaces.

People who have requested to speak will be called upon in the order they have registered. Are there any questions regarding the procedure that will be used regarding this hearing this evening?

Let the record indicate that no one raised their hand. With that, the first person is Erika Belmont. If you would come forward to the podium please.

MS. BELMONT: (Inaudible)

HEARING OFFICER STUDER: Well, we are going in this order, but if you want to pass and come back. We've only got a few people that have registered, we can do that.

MS. BELMONT: Sure.

HEARING OFFICER STUDER: The other person that registered next was Robert Bewkes.

MR. BEWKES: I'll pass also.

HEARING OFFICER STUDER: Okay. The next person that registered is Kathy Andria. Kathy, you may have to turn the switch on on that mike, I think I left it off while I was speaking. You've got it. It's kind of temperamental with the podium set up the way it is. It's kind of hard to get your voice to project. I'll turn you up if need be. With your back to the

audience, sometimes it's hard for them to hear.

If you're sitting out here and you can't hear what is said, please let me know. Okay.

MS. ANDRIA: My name is Kathy Andria, Kathy with a K, A-N-D-R-I-A. I am president of American Bottom Conservancy. Member of Sierra Club, National Clean Air Committee member of Illinois EPA Environmental Justice Advisory Group. I want to thank you and US Steel for reaching a Memorandum of Understanding to install a baghouse to control fine particulate emissions coming from the basic oxygen furnace at the Granite City working facility.

The St. Louis area has been unable to meet federal air quality standards for fine particulates for far too long. Both US EPA and IEPA point to US Steel as the primary contributor. IEPA thinks the problem may be basic oxygen furnace, known at BOPF, and that's why we're here.

According to the US EPA website, the size of particulate directly linked to the potential for causing health problems. Small particles less than 2.5 microns in diameter pose the greatest problem because they can get deep into your lungs. Some may even get into your bloodstream. Exposure to such particles can affect both your lungs and your heart. Particle pollution, especially fine particles, contain microscopic solid or liquid droppings that are so small that they can get deep into the lungs and cause serious health

problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including premature death in people with heart and lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung functions, and increased respiratory symptoms such as irritation of the airways, coughing and difficulty breathing.

People with heart or lung diseases and children and older adults are the most likely to be affected by particle pollution exposure. However, even if you were healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution. There are scientific studies that show the fine particles are more strongly associated with acute respiratory health effects in school children than course particles. Studies show that they contribute to or exacerbate heart and lung disease and indeed may cause asthma in young children. There's even a new study that shows that fine particle contribute to dementia or Alzheimer's. And as the EPA website states, PM 2.5 can cause premature depth.

The Granite City area has way more than it's share of young children with asthma, ask any school nurse. We have more than our share of people with heart and lung disease. The percentages of those living in poverty and the minority residences within five miles of the facility are significantly higher than national state and county averages creating environmental justice concerns. There are also significantly

higher percentages of children and elderly.

In addition, approximately 365,000 people using Horseshoe Lake State Park annually for recreation, including biking, hiking, fishing hunting and picnics. Horseshoe Lake sits right next to the facility.

It is important to know the difference between course particles known as PM 10, and the more dangerous or fine particles, or PM 2.5, which can inhale deep into the lungs and even pass into the bloodstream. I make these two points again, because this permit fails to differentiate between the two. All particles are lumped together as PM, and there is no limit in the permit on PM 2.5. There is a mention of fine particulates that are required to submit a onetime report of PM 2.5 presumedly for purposes of the state implementation plan or SIP, but there is no ongoing accountability for fine particulates, and I'd like to know why.

With current BOF controls and ESP or electrostatic precipitator the PM emissions are reported to be 439.5 tons per year. After installing the new baghouse, they would leave 405.4. That is 405 tons of tiny detonate particles a year. A particle that is 30 times smaller than the human hair. It boggles my mind to imagine 400 tons of deadly particles that are so small that several thousand can fit on the end of the period at the end of the sentence.

The baghouse installed on the new Gateway Coke plant

is required to remove 99.9 percent of the PM 2.5 emission. The baghouse proposed to be used for the BOF has only a 97 percent removal. Is this the best baghouse available for BOF? Is this the best filter available? Are the full capabilities of the baghouse going to be used? What is the manufactures stated capability, and how does it compare to the most protected one?

There are there processes in the BOF, charging, tapping and refining. The new baghouse would control emissions from tapping and charging, but emissions from refining would be controlled by ESP. Is there a reason the baghouse can't also control the refining emissions? While we were truly grateful a baghouse will be installed, the big question is can we do better.

It has taken many years to get to this point. As long as the company is installing a new baghouse, why not install the most protective one available so that the greatest emission reduction can be made. It will be more protective of our children and our elderly, and perhaps the area can truly get to obtain and meet the federal air quality standards. Thank you for considering my comments. I would like to pursue answers to my question after other people have had an opportunity to comment, so I will reserve the balance of my time.

HEARING OFFICER STUDER: Thank you Miss Andria.

Amy Funk?

MS. FUNK: Pass.

HEARING OFFICER STUDER: Mark Feldor? Nope, okay.

We've gone through those that have registered that they want to speak. There were two people that I had passed early on, they said they wanted to reserve their comment, passed initially. I'll go back to those two folks. Following those two, I will ask if there's anyone else here that has not spoken that would like to do, so then we'll see how much time we have, continue with that.

Erika Belmont, did you want to speak at this point?

MS. BELMONT: Hi. My is Erika Belmont. Erika with a K. B-E-L-M-O-N-T. I'm working with the Washington University interdisciplinary law clinic, which is working with American Bottom Conservancy. I have a few questions about the permit application.

US EPA has certified numerous fabric filters that achieve a 99.99 percent removal efficiency for PM 2.5. According to US Steel, the proposed new baghouse for the basic oxygen furnace will have a 97 percent PM removal efficiency. Could US Steel be achieving a higher removal efficiency? If so, is there a reason that it's not doing so.

MR. SMITH: First, the baghouse permit application is an application that was submitted by US Steel pursuant to an agreement for emissions reduction project for additional control of the facility. There were no state or federal requirements mandating that they put this in. The 97 percent control

efficiency is a continuously attainable control efficiency that they have agreed to meet, whether the baghouse will do better or not, will be determined at the time of testing.

MS. BELMONT: Thank you. I also have questions concerning pendency of application. There is just some gaps in it's description of the proposed baghouse that make it difficult to evaluate the draft permit, and I'll go through.

In the air pollution control equipment data information, the manufacturer of control equipment is marked to be determined. There is no fabric filter model emissions. Also in the supplemental form air pollution control equipment filter, the filter materials description is limited to polyester. The filtering area is also to be determined. There are unknown inlet emission stream parameters, and there is an unknown mean particle diameter. I was just the wondering if there were any reasons why these detail are not provided or marked the way they were? Has IEPA obtained anymore information for the fabric filters such as the model, supplier, filter area or details concerning the operation of the baghouse filter?

MR. SMITH: I don't believe we have received any additional information of the manufacturer of the baghouse yet. The Memorandum of Understanding required an emissions limit of 0.005 units per dry standard cubic foot. As long as they meet that requirement, the requirements said, met the requirements they we put before them, whether they do it with brand A or

brand B of baghouses, doesn't matter as much, as actually meeting the emissions limit put forth.

MS. BELMONT: I also just have some questions about emissions limits. Although the Memorandum of Understanding has between IEPA and US Steel set emission limits for total PM, is that the only reason why the draft permit does not include a PM 2.5 emission limit?

MR. SMITH: We'll have to get back to you on that one, if that's okay.

MS. BELMONT: Okay. Given that the purpose of the baghouse is to reduce PM 2.5 emissions that this area is non-attainment for PM 2.5 and could well be non-attainment under proposed revised PM 2.5 ambient air quality standards, is there anything that prevents IEPA from putting a 2.5 PM limit in the permit.

MR. SMITH: The permit as drafted reflects the agreement between Illinois EPA and US Steel Corporation. The Memorandum of Understanding didn't include such, so for now, there isn't one in the permit.

MS. BELMONT: Just one more question. Do any steel mills have PM 2.5 unit for BOP shop emission limits?

MR. SMITH: Any other in the state, world?

MS. BELMONT: Country, maybe?

MR. SMITH: I don't know, we would have to get back to you on that.

MS. BELMONT: Okay.

HEARING OFFICER STUDER: Well, thank you for your time.

MR. SMITH: You're welcome. Thank you.

HEARING OFFICER STUDER: Just as clarification, we'll only be responding to those in the State of Illinois on that. We're not going to do a worldwide search on something like that, when it's outside of our jurisdiction.

MS. BELMONT: Okay.

HEARING OFFICER STUDER: Robert Bewkes, do you want to speak?

MR. BEWKES: Yes. Good evening. My name is Robert Bewkes B as in B E-W-K-E-S. I'm a summer intern at the Washington University Interdisciplinary Clinic working with American Bottom Conservancy.

My question is concerning the permit. We realize the Memorandum of Understanding between IEPA and US Steel set emission limits for total PM, is that the only reason why the draft -- I'm sorry, that was her question. Let me start over.

The permit does not set the emission limits for PM 2.5, even though the key purpose of installing the baghouse is to reduce PM to 2.5 emissions. The permit does test for emissions for PM 2.5, we're not questioning that you have emission testings. Our question is, what use do you plan to make of the testing results?

MR. SMITH: We in general use test results for other

similar facilities when they were going to make modifications at similar facilities in the state. We can use the testing in that manner, or just generally make sure they're in compliance with the permits. Does that answer your question?

MR. BEWKES: Sure, thank you. In condition 3-2(a) of the permit requires US Steel to make measurements in order to control PM efficiency of the BOF baghouse. The permit allows for measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

MR. SMITH: Actually, I'm not an expert on testing procedures, so we'll have to defer that question for our model unit, when we get back.

MR. BEWKES: Thank you. Next question concerns section 3-1 (b)(ii) of the construction permit. Is EPA method 201 capable of testing for filterable PM 2.5, or does it just test for PM10?

MR. SMITH: Again, that would be a question for model unit.

MR. BEWKES: Okay, I'll just finish the question. Is method 201A capable of testing for filterable PM 2.5 and PM 10? The permit requires US Steel to test for filterable PM 10 and PM 2.5.?

HEARING OFFICER STUDER: We'll let you go ahead and ask the question dealing with procedure, but we're not going to be

able to answer those at the hearing, but we will respond to those in writing. So go ahead and read them into the record so that we've got them.

MR. BEWKES: Okay.

HEARING OFFICER STUDER: When you've got a question for the hearing panel.

MR. BEWKES: Why give the option of 201 when it does not test for PM 2.5? Why not limit the testing to method 201A which tests for both PM10 and PM 2.5?

My next question for the hearing panel. In condition 3-1 (e)(iii) of the construction permit, there's a requirement that the permittee submit the final report to Illinois EPA after emissions test containing proposed operating parameter limits that's based on emission testing when applicable. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what is the procedure and timeframe in which IEPA reviews and establishes them?

MR. SMITH: I can answer this question in part, probably need something more detailed in writing, but the operating parameter that would be established based on the test, would be how the baghouse control system remained operate during the testing. That will ensure that there is consistent and repeatable use of the baghouse control system, and the operation of the basic process that coincides to that operation, while the

testing was going on, so that we can be relatively assured that the emissions from the control system will be consistent because we'll be operating in the same manner

MR. BEWKES: And you'll get that procedure on timeframe?

MR. SMITH: Yes.

HEARING OFFICER STUDER: We'll get back, it will be in response to summary for the hearing. Once a comment is made on the record, it's the policy of Illinois EPA to put those in the response of summary. We don't communicate back with people for additional partial responses while the record is still open.

MR. BEWKES: Thank you.

HEARING OFFICER STUDER: We have one more person that has indicated she would like to have additional time, but before we go back and go back to those that have already spoken, I want to ask if there's anyone here that has not spoken this evening, that would like to make a comment on the record.

Let the record indicate that no one raised their hand. Kathy wanted some additional time, so if Ms. Andria would come forward.

MS. ANDRIA: We'll I'm confused, you said Kevin in answer to I think Robert's question about why you would, what you were going to use the results for, to see if they were in compliance with permit limits, but there aren't any permit limits, am I understanding this right?

MR. SMITH: There are permit limits.

MS. ANDRIA: For 2.5?

MR. SMITH: For .005 units.

MS. ANDRIA: Could you explain to me why since there's such an incredible difference between PM 2.5 and PM 10, why you're not breaking them down, why there are no limits.

MR. SMITH: I think I answered that already.

MS. ANDRIA: I didn't understand.

MR. SMITH: I can give you a more complete answer in writing, if you'd like, otherwise my answer is already on the record, it pertains to the Memorandum of Understanding and the agreement between US Steel and Illinois EPA.

MS. ANDRIA: So you are precluded of imposing limits by your construction permit?

HEARING OFFICER STUDER: I think what Kevin is saying, we'll consider it. You are free to also submit additional comments on this matter during the comment period, but we will consider it. The issue is that there is more than just the two people that are up here tonight that have participated in this permit, and we will need input from those additional staff people to adequately address that question. Not as easy as it may seem.

MS. ANDRIA: Let me ask you this: In terms of a normal permit, suppose there are memorandums of understanding, would you be free to put limits on PM 2.5 on monitoring the air?

MR. SMITH: I'm not sure if that relates to tonight's discussion, I'll have to get back to you on that one.

MS. ANDRIA: Do you have other PM 2.5? I mean, do you ever put PM 2.5 limits on anything?

MR. SMITH: Yes, we do.

MS. ANDRIA: What circumstances would they have to meet to put PM 2.5 limits?

MR. SMITH: I think you're asking the same question again, which I've already answered. I'll have to get back to you.

MS. ANDRIA: Because that's very, to me, I mean, I am thrilled that there's going the be a baghouse, but I am very, very troubled that there's no PM 2.5 limits, that is my biggest concerns, I will go to some of my other.

HEARING OFFICER STUDER: Can I clarify your question, make sure we responded correctly to it in writing. Is your question under what conditions and what circumstances we would put a 2.5 PM limit in a permit, is that it?

MS. ANDRIA: Yes, because right now, the answer to why they didn't is because there, it's not in the memorandum agreement, but a Memorandum of Understanding, but it seems to me reading the permit of construction permit that there's a heck of a lot that's not in the Memorandum of Understanding, so you choose not to put it in. I'm trying to figure out why, because you put a lot of other things in.

Okay. You said that you when you answered Robert's one question about comparing it to other facilities, and I'm not sure, did you answer Erika's question on are there other manufacturers, are there other units that can get better than 97 percent removal?

MR. SMITH: I believe I did answer that, and the 97 percent removal was part of the agreement. The baghouse may get better than that, but that was the requirement under the Memorandum of Understanding.

MS ANDRIA: And again, you can't because of the agreement, you can't require anything more stringent in a non-attainment area?

MR. SMITH: Again, I think that goes back to the same type of questions, with the 2.5, we'll just have to get back to you on that one.

MS. ANDRIA: And are you -- you mentioned that you compared other facilities in the state, I think you mentioned something that other than just in the state, are there other facilities like this in the state that you're written construction permits for a baghouse?

MR. SMITH: You mean other steel production plants?

MS. ANDRIA: Correct.

MR. SMITH: I have written permits for electric arc furnace.

MS. ANDRIA: That would not be the same BOF process?

MR. SMITH: BOF is different than an electric arc furnace.

MS. ANDRIA: We don't know who the manufacturer is, or we aren't supposed to address the people, but perhaps US Steel might want to answer these questions. If they don't, that's fine, but they know they're here if they're interested in answering any of the questions, we would be appreciative.

HEARING OFFICER STUDER: If a member from US Steel wants to address the questions, they may raise their hand during this. Otherwise, if not, we'll continue. I'm not in a position to be able to require them to answer it at this point.

MS. ANDRIA: I understand.

HEARING OFFICER STUDER: But you can go ahead and state the question on the record, if you will.

MS. ANDRIA: Well, the nature of the filter, if there are other filters that can get better percentages, how protective, you know, that's what I'm trying to get the best percentage removal. We got Gateway Coal to do the 99.9, we got so many kids with asthma, and that's what we're really after. I mean we're thrilled that we're finally getting the baghouse, believe me, but I just think you know, they're spending the money for this, and we are going to put new standards on PM 2.5. We're in like a little window, not going to be attaining it, just seems like this is the appropriate time to just do it and get it done. Might not happen again for a long time.

Then I have another question and maybe US Steel might want to answer. I said this, but I didn't wait for an answer. About the three processes in the BAF charging, capping and refining. The baghouse would control emissions for capping and charging, but the emissions for the refinery would be controlled by the ESP, and I asked Kevin and then if US Steel would care to answer, but Kevin doesn't know, is there a reason the baghouse can't also control the refining issues?

MR. SMITH: The requirement in my understanding is that the baghouse control will be charging and capping portions of the refining process.

MS. ANDRIA: This all goes back to the Memorandum of Understanding, is it your answer?

MR. SMITH: That question is yes.

MS. ANDRIA: And so, anyway, I would like to then ask if US Steel would like to answer any of my questions, thank you very much.

HEARING OFFICER STUDER: Is there anyone that has not spoken this evening, that wants to publically make a statement on the record this evening? Okay. Let the record indicate that there was none.

I remind everyone here the hearing record is open until August 17, 2012, and we will be accepting written comments through that date, as long as they are postmarked no later than August 17. I thank all of you for coming to this hearing this

evening, and for coming out on this very warm, hot evening. Thank you I appreciate it, have a good evening. This hearing adjourned.

(Whereupon, the hearing adjourned at 7:57 p.m.)

CERTIFICATE OF REPORTER

STATE OF ILLINOIS)
) Ss.
COUNTY OF MADISON)

I, Angie R. Kelly, a Certified Shorthand Reporter (IL), and a Notary Public within and for the State of Illinois, do hereby certify that the meeting aforementioned was Held on the time and in the place previously described.

IN WITNESS WHEREOF, I have hereunto set my Hand and seal.

_____

Notary Public within and for

The State of Illinois

Kras, Kim

From: Smith, Kevin L.
Sent: Friday, February 15, 2013 9:46 AM
To: Bakowski, Ed
Subject: FW: US Steel baghouse system
Attachments: EPA Comments on US Steel PSD Revision FINAL.pdf

fyi

From: Ogulei.David@epamail.epa.gov [mailto:Ogulei.David@epamail.epa.gov]
Sent: Friday, February 15, 2013 9:44 AM
To: Ogulei.David@epamail.epa.gov
Cc: Romaine, Chris; Marcus.Danny@epamail.epa.gov; Smith, Kevin L.; Damico.Genevieve@epamail.epa.gov
Subject: Re: US Steel baghouse system

As follow-up to my last email on this subject (see below), EPA's understanding is that since the preliminary responses discussed in that email do not address EPA's comments of August 16, 2012 regarding revisions to the PSD permit, we anticipate that IEPA will share draft responses to those comments (on the PSD permit) at a later date. If our understanding is incorrect, please let me know.

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To: "Romaine, Chris" <Chris.Romaine@Illinois.gov>
Cc: Danny Marcus/R5/USEPA/US@EPA, "Smith, Kevin L." <Kevin.L.Smith3@Illinois.gov>
Date: 02/15/2013 09:23 AM
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IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 22 2013
REVIEWER JRM

Chris,

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Should you substantively change any of the responses, or if you substantively change how you intend to address the comments, EPA would appreciate to be notified about it.

Regards,

David Ogulei
U.S. Environmental Protection Agency
Region 5 | Air & Radiation Division | A-18J
77 West Jackson Blvd. | Chicago, Illinois 60604
Phone: (312) 353-0987 | Fax: (312) 692-2080
Ogulei.David@epa.gov

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 1[illegible] 2012

REPLY TO THE ATTENTION OF

Edwin C. Bakowski, P.E.
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Dear Mr. Bakowski:

The U.S. Environmental Protection Agency has reviewed the draft Prevention of Significant Deterioration (PSD) permit revision (Application No. 95010001) prepared by the Illinois Environmental Protection Agency (IEPA) for U.S. Steel Granite City, located at Route 203 and 20th Street, Granite City, Illinois. The draft PSD permit revision makes various changes to the original permit to accommodate a planned emission reduction project for particulate emissions from the Basic Oxygen Furnaces (BOFs). EPA appreciates the potential air quality benefits of the project and the efforts that IEPA and U.S. Steel Granite City have made to ensure the success of the project.

EPA has the following comments on the draft PSD permit revision:

1. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP));[1] and condition 10 and Attachment A (procedures to ensure proper operation of the BOF's ESP).[2] IEPA

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[2] We also note that Condition 8 (visible emissions from the BOF shop) would be revised to require compliance with the 20% opacity limit using the procedures in 35 IAC 212.446(c) instead of the prescribed procedures in Conditions 9(a) and (b). The permit record does not indicate that the original Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). The original condition 8 appears to be more stringent than the revised condition 8 since it required opacity observations to be conducted on at least a weekly basis pursuant to conditions 9(a) and 9(b). Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

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3. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 C.F.R. § 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at 8. Clarification is necessary for ascertaining the actual amount of the projected overall emissions reduction due to the project.

We look forward to working with you to ensure that the revised PSD permit meets all federal requirements, and that the record provides adequate support for the permit decision. If you have any questions, please feel free to contact me at (312) 353-4761 or David Ogulei, of my staff, at (312) 353-0987.

Sincerely,

Genevieve Damico
Chief
Air Permits Section

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AUG 1 3 2012

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Sincerely,

Genevieve Damico
Chief
Air Permits Section

Kras, Kim

From: Romaine, Chris
Sent: Thursday, January 24, 2013 5:37 PM
To: Carter, Sally
Cc: Smith, Kevin L.
Subject: No appeal on revised PSD permit for US Steel

On its website, the EAB has an appeal for another permit action, not US Steel, that was received on January 23, 2013.

IEPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

Kras, Kim

From: Frost, Brad
Sent: Monday, December 17, 2012 3:47 PM
To: Hartshorn, Wally; Batty, Stuart
Cc: Romaine, Chris; Carter, Sally; Studer, Dean
Subject: US Steel Responsiveness Summary and Issued Permit
Attachments: US Steel Baghouse Project PSD Response to Comments.pdf; 95010001.pdf

Please post the attached issued permit and responsiveness summary today if possible or at latest tomorrow morning to the record for the United States Steel Granite City Work hearing at http://www.epa.state.il.us/public-notices/general-notices.html

The issued date is today.

Thanks,
Brad

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
217/524-5023 fax
brad.frost@illinois.gov

EPA - DIVISION OF RECORDS MANAGEMENT
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AUG 23 2013
REVIEWER JRM

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

December 2012

Responsiveness Summary For Public Questions and Comments on the Revision to Construction Permit/PSD Approval 95010001 To Accommodate an Emission Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois

Source Identification No.: 119813AAI
Permit No.: 95010001

DECISION

On December 17, 2012, the Illinois Environmental Protection Agency (Illinois EPA) revised Permit 95010001, for United States Steel Corporation, Granite City Works (US Steel), to accommodate a planned emission reduction project for the two basic oxygen furnaces (BOFs) at this steel mill. In response to comments, the revised permit that has been issued, as compared to the draft of a revised permit prepared by the Illinois EPA, clarifies current compliance procedures for the BOFs, which will continue to apply while the new control system for the BOFs is being constructed. The issued permit also clarifies the compliance procedures that will apply after the new control system begins operation.

BACKGROUND

US Steel requested revisions to Construction Permit/PSD Approval 95010001, originally issued in 1996, to accommodate an emission reduction project for the two basic oxygen furnaces (BOFs). This project will involve the installation of a new control system with a filter or "baghouse" for secondary particulate emissions from the BOFs, i.e., the particulate emissions from charging and tapping of the BOFs. This new control system is the subject of an Agreement between US Steel and the Illinois EPA. The actual construction of this system is the subject of a separate application for a construction permit, Application 11050006, which is still pending with the Illinois EPA, Bureau of Air.[1]

Revisions to Permit 95010001 have been made to address certain operational requirements in this permit for the BOFs that will no longer be appropriate or possible when the new control system begins operation. The revisions to Permit 95010001 will also remove operational requirements for the BOFs that are now considered obsolete or outdated given new requirements that apply to the BOFs, notably new emission standards and associated operating requirements for BOFs adopted by USEPA. However, the revisions do not involve the emission limits for the BOFs that were originally set by Permit 95010001.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. Applications for air pollution control permits must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial review of US Steel's application for revisions to Permit 95010001, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a revised permit and prepared a draft of a revised version of Permit 95010001 for public review and comment. The comment period for the revised permit was combined with the comment period for a draft of a construction permit for the new baghouse control system, Application 11050006.

The public comment period began with the publication of a notice in the Granite City Press Record on May 30, 2012. The notice ran again in the Granite City Press Record on June 6th and 13th, 2012. A public hearing was held on July 18, 2012 at the Granite City Township office to receive oral comments and answer

[1] The construction permit application for the baghouse control system, Application 11050006, is being processed using "Integrated Processing." Accordingly, the construction permit for this system, if issued, would also authorize related changes to be made by administrative amendment to the Clean Air Act Permit Program (CAAPP) permit for the Granite City Works. (The Clean Air Act Permit Program (CAAPP) is Illinois' operating permit program pursuant to Title V of the federal Clean Air Act for major source of emissions and certain other sources of emissions.) In the draft of the construction permit for the baghouse control system that the Illinois EPA has prepared, the specific changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate this system would be identified in Part 2 of the that construction permit.

questions regarding the two applications and the two draft permits (the drafts of revised Permit 95010001 and new Construction Permit 11050006[2]). The comment period closed on August 17, 2012.

Following the close of the comment period, the Illinois EPA reviewed the oral comments that were made at the public hearing and the written comments that were submitted. This document was prepared to document this review of comments by the Illinois EPA to accompany the issuance of revised Permit 95010001. As related to US Steel's application for a construction permit for the new baghouse control system, which is still pending, when the Illinois EPA takes final action on that application, the Illinois EPA will prepare a separate responsiveness summary to accompany that action.[3]

AVAILABILITY OF DOCUMENTS

The revision of Permit 95010001 issued by the Illinois EPA and this responsiveness summary are available by internet, http://www.epa.state.il.us/public-notices/.[4] Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The Illinois EPA administers the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, for sources in Illinois pursuant to a delegation agreement with USEPA. When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's Procedures for Decision Making, 40 CFR Part 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the USEPA to review the issued PSD permit. In addition, any person who failed to file comments or failed to participate in the public comment period on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision. If comments were submitted on the draft PSD permit that requested changes in the permit, the PSD permit will not become effective until after the period for filing an appeal has passed. The federal procedures governing appeals of PSD permit are contained in the Code of Federal Regulations, "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19.

To accommodate an appeal of revised Permit 95010001 to USEPA, the revised permit does not immediately take effect upon issuance. The effectiveness of the permit is delayed to provide time for appeal of the permit to USEPA and, if such an appeal is filed, for the appropriate resolution of the appeal.

If an appeal will be submitted to USEPA for the revised permit by regular mail, it should be sent on a timely basis to the following address. If an appeal will be sent by a means other than regular mail, refer to the website of the USEPA's Environmental Appeals Board for instructions http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf).

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

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[2]The draft construction permit also identifies the related changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate the new baghouse control system.

[3]This responsiveness summary also addresses certain comments related to the draft construction permit that were made by the public at the public hearing. This has been done to respond to all comments from the public in this document.

[4]This information may also be available on the internet database that USEPA Region 5 maintains for certain air pollution control permits issued in Illinois, Illinois Permit Database, available at http://www.epa.gov/reg5oair/permits/ilonline.html.

Telephone: 202/233-0122

QUESTIONS AND COMMENTS WITH RESPONSES BY THE AGENCY

1. The new baghouse would control emissions from tapping and charging of the BOFs, but emissions from refining would continue to be controlled by the existing ESP. Is there a reason that the baghouse could not also control refining?

   The new baghouse system is not designed to control the refining or "primary emissions" of the BOFs because that is not the main target of the Agreement. The bulk of the improvement in control of particulate emissions that is sought is for the secondary emissions of the BOFs, i.e., emissions from charging and tapping of the BOFs. This is where the current control system on the BOFs may be greatly improved to obtain significant benefits for ambient air quality.

   Moreover, baghouses commonly are not considered suitable for control of the primary emissions of a BOF. If one attempted to use a baghouse to control these emissions, the high moisture level in the flue gas entering the baghouse would quickly blind the filter material, interfering with proper operation of the baghouse. The high moisture level is a consequence of the water sprays that are used to cool the flue gas before it enters the baghouse or other control device. This cooling is needed to both protect the control device from damage and, as the volume of flue gas is reduced by cooling, to facilitate effective control of emissions. Accordingly, the primary emissions of BOFs are controlled with ESPs or scrubbers.[5] In this case, primary emissions would continue to be controlled by the existing ESP. The performance of the existing ESP should be expected to improve significantly when it is no longer being relied upon for control of secondary emissions and can be operated for control of only primary emissions.[6]

2. While I am grateful that a baghouse system will be installed on the BOFs, could the system be better? It has taken many years to get to this point. As long as US Steel is installing a baghouse system for the BOFs, why not install the most protective one available, with the greatest emission reduction that can be made. It will be better for public health and perhaps the area can truly meet the National Ambient Air Quality Standards (NAAQS) for particulate matter.

   The Illinois EPA appreciates this sentiment. However, the planned project for the BOFs is appropriate. Secondary emissions from the BOFs will be controlled by a baghouse control system that is specifically designed for effective capture and control of secondary emissions, with greater capacity that the current hooding. This system will be connected to a large baghouse designed for control of secondary emissions, rather than being served by an ESP that must also control the primary emissions of the BOFs.

3. The baghouse at Gateway Energy, the new coke plant in Granite City, is required to remove 99.99 percent of the $PM_{2.5}$ emission. The baghouse proposed to be used for the BOP furnaces would only have 97 percent removal. Why won't the new baghouse for the BOFs be as good as the baghouse at Gateway Energy?

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[5]For example, the particulate emissions of the other BOFs in Illinois, at Mittal Steel, in Riverdale, in the Chicago area, is controlled by the combination of an ESP system for primary emissions and a baghouse system for secondary emissions.

[6]Accordingly, the Agreement appropriately provided for a new baghouse system for control of emissions from charging and tapping. The Agreement also sets a more stringent limit for the ESP, 0.01 gr/scf, compared to 0.02 gr/scf, However, it did not provide for a new control system be installed for refining emissions of the BOFs, replacing the existing ESP.

The main baghouse at Gateway Energy and the new baghouse planned for the BOFs at the Granite City Works should not be directly compared in the way that they have been in this comment. In fact, the proposed baghouse at US Steel would be subject to the same performance requirement for as the main baghouse at the existing Gateway Energy plant, i.e., a limit of 0.005 gr/scf for filterable particulate matter in the exhaust from the baghouse.[7]

The cited efficiency values for these baghouses actually address different aspects of the performance of these two control systems. As such, they do not provide a direct comparison of the two baghouses and do not indicate that the new baghouse for the BOFs would not be as "good" as the baghouse at Gateway Energy. For the Gateway baghouse, the efficiency value is actually a specification for the removal capability of the filter fabric, not the overall control efficiency of the baghouse. In contrast, the cited efficiency value for the new control system for the BOFs actually addresses the design control efficiency of the new baghouse for secondary emissions from the existing BOFs at the Granite City Works. As such, it considers the actual nature and loading of particulate matter in the stream that would be entering the baghouse. For baghouses, these are critical factors for the numerical value of control efficiency that is achieved by a baghouse when it is used in a particular application. Accordingly, the performance of filter-type control devices is more appropriately addressed, from a technical perspective, in terms of the outlet dust loading that is achievable or required. On this basis, the requirements for these two baghouses are identical.

4. USEPA has certified numerous filters for 99.99 percent removal efficiency for $PM_{2.5}$. According to the construction permit application, the proposed baghouse for the BOFs will have 97 percent removal efficiency for PM.

The Illinois EPA is not aware of any "filters," i.e., baghouses, that USEPA has certified for their removal efficiency. USEPA has certified various <u>filtration materials</u> for achievement of 99.99 percent removal for $PM_{2.5}$. These certifications are based on evaluations of samples of those materials made in a laboratory using a standardized analytical methodology. This methodology involves introducing a stream of particulate matter of uniform size at a constant rate to the sample of filter material that is being tested. As such, USEPA's certifications for filtration materials do not reflect the performance of the filtration fabrics in actual applications, much less the performance of entire baghouse systems. Accordingly, this comment does not provide meaningful data against which to compare the new baghouse control system for the BOFs.

Incidentally, it is expected that, in practice, the overall performance of the new baghouse will be better than 97 percent, which is a design specification for this device that was provided in the application.

5. Is this the best baghouse and filter available? Comparing the proposed baghouse to other baghouse units, will this be the best baghouse available? Are the full capabilities of the baghouse going to be used? Could the baghouse achieve a higher efficiency?

Since the new control system is an emission reduction project, a case-by-case review of the performance or the efficiency of the baghouse is not required by applicable rules. However, as reflected in the construction permit, the new baghouse control system must meet emission limits for particulate matter established by USEPA as Maximum Achievable Control

[7] Refer to Condition 4.1.5(a) of Construction Permit/PSD Approval 06070020.

Technology, under the Iron and Steel NESHAP, 40 CFR 63 Subpart FFFFF. As such, a modern baghouse is required.

6. If there is a baghouse control system or filter that would be more protective, that is what I want. I am thrilled about this project but I think of its cost. USEPA is going to set revised NAAQS for $PM_{2.5}$ and ambient air quality in Granite City is not going to meet them. It seems like this is the appropriate time to just get it done. Otherwise, it might not happen for a long time.

The Illinois EPA appreciates the desire to have the most efficient and protective baghouse control system for the BOFs. However, the planned project for the BOFs is a reasonable project that US Steel has committed to implement for control of secondary emissions. A modern capture system connected to a large baghouse will be installed, taking the place of the existing ESP for control of secondary emissions.[8]

7. The draft construction permit for the new baghouse control system would limit its emissions of particulate as particulate matter (PM) but not as PM_{10} or $PM_{2.5}$. For PM_{10} and $PM_{2.5}$, the permit would only require emissions testing followed by submission of a onetime report evaluating PM_{10} and $PM_{2.5}$ emissions with the new control system, presumably for purposes related to the state implementation plan. Why is there no ongoing accountability for PM_{10} and $PM_{2.5}$ emissions?

The permit addresses the particulate emissions of the BOFs in terms of PM because this currently is the most effective and practical way to address these emissions. This is also reason why the Agreement between US Steel and the Illinois EPA addressed the particulate emissions of the BOFs in terms of PM. This is possible because PM, PM_{10} and $PM_{2.5}$ are all different approaches to the measurement and quantification of particulate.[9] As a consequence, limits on the particulate emissions of an emission unit in terms of PM also act in practice to generally address and restrict the unit's emissions of PM_{10} and $PM_{2.5}$. In the simplest terms, a lower limit for particulate emissions in terms of PM, also results in lower emissions of particulate as PM_{10} and $PM_{2.5}$.

Currently, the most effective way to address control of particulate emissions from BOFs is as PM because this is how the particulate emissions of BOFs and their control systems have historically been addressed. There is a body of emission testing upon which to rely when making projections for the PM emission rates that are or will be achievable from BOFs with the use of certain control technology. A similar body of data does not exist for the control of emissions in terms of PM_{10} or $PM_{2.5}$. As a consequence, emission limits expressed in terms of PM can effectively be more stringent than limits expressed in terms of PM_{10} or $PM_{2.5}$. Since they have a better basis, they do not need to account for the high level of uncertainty that would need to be considered if limits were set in terms of PM_{10} or $PM_{2.5}$.[10] Emission limits in

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[8] There also have been significant improvements in ambient air quality in the Granite City area, with monitoring in recent years showing attainment of the present federal National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$.

[9] USEPA categorizes particulate as supercoarse, coarse, fine and ultra fine. Supercoarse particulate has an aerodynamic diameter of greater than 10 microns, coarse particulate has an aerodynamic diameter between 2.5 and 10 microns, fine particulate has an aerodynamic diameter between 2.5 and 0.1 microns, and ultrafine particulate has an aerodynamic diameter of 0.1 microns or less. PM_{10} is composed of coarse, fine, and ultrafine particulate. $PM_{2.5}$ is composed of fine and ultrafine particulate. As such, $PM_{2.5}$ is a subset or component of PM_{10}.

[10] For example, if $PM_{2.5}$ makes up approximately 20 percent of the particulate emissions of an emission unit after control, a limit of 0.005 gr/scf for PM is generally equivalent to a limit of 0.001 gr/scf for $PM_{2.5}$. (0.005 gr/scf x 0.20 = 0.001 gr/scf). In actual practice, when relying upon the relationship between different forms for particulate, one should consider the accuracy and reliability of the available data for particle size distribution (i.e., the percentage of the PM emissions that are of different sizes). The better the data for particle size distribution and the lower the variability in this data, the simpler and more consistent the relationship. For example, if the available data is only sufficient to indicate that between 10 and 30

terms of PM are also expected to be more effective because procedures for testing PM emissions have been used for decades and the conditions needed for accurate measurements are well understood. This is not the case for PM_{10} or $PM_{2.5}$.[11] This means that another source of uncertainty that would be present for limits in terms of PM_{10} or $PM_{2.5}$ is avoided when limits are set for PM.

In this case, limits in terms of PM are also more practical because the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, addresses particulate emissions from BOFs in terms of PM. Accordingly, the performance testing that is required pursuant to this NESHAP will also serve to address compliance with the permit limits for particulate. As such, compliance with particulate limits in terms of PM will be easier to implement.

Moreover, it should be apparent that the Agreement between US Steel and the Illinois EPA was made possible because it addresses particulate emissions in terms of PM, rather than $PM_{2.5}$. This enabled US Steel to make commitments for the emissions of the new baghouse control system that US Steel was confident could be met. It also minimized US Steel's burden for additional emissions testing that would not be required by the NESHAP. At the same time, limits for the new control system could still be set in the Agreement that should significantly reduce the secondary emissions of the BOFs, including emissions as $PM_{2.5}$.

8. Since there is a difference between $PM_{2.5}$ and PM_{10}, why would the draft construction permit for the new baghouse control system not set limits for $PM_{2.5}$.

As discussed, in this case, the difference between PM and $PM_{2.5}$ is not sufficient to support setting an emission limit in this construction permit in terms of $PM_{2.5}$. Reductions in the particulate emissions of the BOFs can be achieved with an emissions limit for the baghouse system that is in terms of PM.

9. How significant is it that the Agreement between US Steel and the Illinois EPA sets emission limits for particulate in terms of PM? Does this act to preclude the establishment of emissions limits in terms of $PM_{2.5}$ in the construction permit?

The Agreement does not directly preclude the establishment of limits for $PM_{2.5}$ in the construction permit for this emission reduction project. However, the approach taken to particulate emissions in the Agreement is significant as it is a reflection of the various considerations that culminated with an Agreement that addresses particulate emissions with limits that were expressed in terms of PM.

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percent of the PM emissions are $PM_{2.5}$ (i.e., 20 ± 10 percent), a limit for $PM_{2.5}$ based on a PM emission rate of 0.005 gr/scf would reasonably be set at 0.0015 gr/scf. To provide the necessary assurance that the limit can be complied with and is "achievable," the limit must be based on the upper bound for the fraction of PM that may be $PM_{2.5}$. In this example, this results in a $PM_{2.5}$ limit of 0.0015 gr/scf. (0.005 gr/scf x 0.30 = 0.0015 gr/scf).

Incidentally, if condensable particulate is present, another consideration for this relationship is the data that is available for emissions of condensable particulate. The relationship between emissions of PM, PM_{10} and $PM_{2.5}$ is most direct when condensable particulate is not a significant fraction of the particulate emissions, as is the case for the emissions of BOFs. The need for any of these considerations is avoided if limits for particulate can simply be set in terms of PM.

[11] For example, USEPA has not yet developed a reference method for testing emissions of filterable PM_{10} or $PM_{2.5}$ from "wet stacks." In a wet stack, moisture in the flue gas may lead to agglomeration of individual particles as they pass through the test apparatus. This prevents reliable and accurate measurements of PM_{10} or $PM_{2.5}$ emissions. The current test methods for filterable PM_{10} and/or $PM_{2.5}$ were developed for "dry stacks," where agglomeration is not a factor, and accordingly are only appropriate for testing of dry stacks.

10. Given that the purpose of the new baghouse control system is to reduce the $PM_{2.5}$ emissions of the BOFs, that the Granite City area is designated nonattainment for $PM_{2.5}$ and could well be nonattainment under revisions to the $PM_{2.5}$ NAAQS that USEPA has proposed, is there anything that prevents Illinois EPA from putting a $PM_{2.5}$ limit in the construction permit?

As discussed, a variety of considerations lead to a construction permit that addresses control of particulate emissions from the BOFs in terms of PM. Most significantly, a limit that addresses the particulate emissions of the BOFs in terms of PM also addresses emissions of $PM_{2.5}$, likely more effectively than if a limit were to be established in terms of $PM_{2.5}$. Accordingly, factors cited by this comment do not provide an adequate basis to set limits in terms of $PM_{2.5}$ in the construction permit for the new baghouse control system.

11. It seems that the draft construction permit for the baghouse control system has many provisions that are not in the Agreement. This suggests to me that the Illinois EPA chose not to put a $PM_{2.5}$ limit in that permit.

The draft construction permit would not set any emission limits that are not established by the Agreement or by applicable emission standards. The "other" provisions in this draft permit, which are broadly referred to by this comment, would deal with testing, operational monitoring, recordkeeping and reporting. These provisions would serve to verify ongoing compliance with the applicable emission limits. These provisions would also be needed to address the transition from the current requirements for testing, operational monitoring, recordkeeping and reporting to the new requirements that will apply with the baghouse control system. Finally, the permit would rely upon the general authority of the Illinois EPA to reasonably require sources to gather emission and emission related data. These provisions in the draft construction permit would be reasonable and appropriate, addressing aspects and implications of this emission reduction project that were not explicitly addressed in the Agreement. The presence of these provisions in the draft construction permit does not show that it would be appropriate for the construction permit for the baghouse system to set limits for $PM_{2.5}$ emissions.

12. Under what circumstances would the Illinois EPA set a $PM_{2.5}$ limit in a construction permit?

Construction permits issued by the Illinois EPA currently include limits for $PM_{2.5}$ emissions when federal or state "New Source Review" (NSR) rules necessitate such limits because of the nature and circumstances of the projects that are the subjects of the permits. The NSR rules do not provide a basis to set limits for emissions of $PM_{2.5}$ in the construction for the new baghouse control system for the BOFs. This is because this project will reduce the emissions of $PM_{2.5}$ from the BOFs.[12]

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[12] **In general, construction permits currently set emission limits in terms of $PM_{2.5}$ for two types of projects relative to emissions of $PM_{2.5}$, "minor projects" and "major projects." For minor projects, which are far more common, construction permits set limits for $PM_{2.5}$ emissions as needed to address applicability of NSR. The limits for $PM_{2.5}$ emissions in these permits restrict emissions or the increases in emissions of $PM_{2.5}$ from a source or project to less than the emission thresholds at which the project would be considered major under the applicable NSR rules for its $PM_{2.5}$ emissions. However, since limits for PM emissions also serve to restrict emissions of $PM_{2.5}$, limits in terms of $PM_{2.5}$ are only set when limits in terms of PM or, in some cases, PM_{10} will also not be sufficient to address applicability of NSR rules to a project for $PM_{2.5}$ emissions.**

For major projects for emissions of $PM_{2.5}$, which are far less common, NSR rules now generally require that the construction permits for such projects explicitly address $PM_{2.5}$ emissions, with limits that represent Best Available Control Technology or the Lowest Achievable Emission Rate that are in terms of $PM_{2.5}$ emissions.

The relevant emissions thresholds under the NSR rules that distinguish minor projects from major projects, i.e., major new sources and major modifications, are as follows:

13. Do any BOF shops at steel mills in the United States have limits for $PM_{2.5}$ emissions?

Given the current circumstances for control and regulation of $PM_{2.5}$ emissions, the Illinois EPA does not believe that any existing BOF shops in the United States, similar to this BOF shop, are subject to limits expressed in terms of $PM_{2.5}$ emissions.[13] In any case, it would not be an appropriate use of Illinois EPA resources to conduct a survey to definitively answer this question. This is because even if another existing BOF shop in the country is subject to limits for $PM_{2.5}$ emissions, it would not show that it is appropriate to include such limits in this construction permit. As already discussed, emissions of $PM_{2.5}$ can be addressed and restricted by limits for emissions of PM. This is because $PM_{2.5}$ is a component of PM so limits for PM emissions act in practice to also constrain $PM_{2.5}$ emissions.

14. There are gaps in the description of the new baghouse in the application for the new baghouse control system that make it difficult to evaluate the draft construction permit. On the general data and information form for the baghouse, the manufacturer and model number of the baghouse are shown as "to be determined." On the form for filter control equipment, the filter material is described simply as "polyester." The filtering area is also "to be determined." Inlet emission stream parameters, including mean particle diameter are unknown. Are there reasons why these details are not provided or were marked the way they were? Has Illinois EPA obtained any more information for the baghouse, such as the supplier, model number, or filter area or details concerning the operation of the baghouse?

The application contains the information that is currently available for the new control system. US Steel has not yet entered into a contract for this project and the new baghouse has not yet been designed.[14] The application is based on a preliminary or conceptual design that US Steel had prepared for the project, including the performance specifications that are to be met by the baghouse, i.e., a PM emission rate of no more than 0.005 grains/dry standard cubic foot. Given the cost of this project, US Steel will not enter into a contract for the baghouse until after this project is fully permitted. Only then will a firm be selected to provide the baghouse and the engineering design of this device be started.

15. Even though the draft construction permit would not set limits for emission of $PM_{2.5}$, it would require testing for emissions for $PM_{2.5}$, which I am not questioning. What use does the Illinois EPA plan to make of the results from this testing?

This testing would identify the specific relationship between the emissions of PM, PM_{10} and $PM_{2.5}$ from the BOFs. As such, $PM_{2.5}$ emission data gathered by this testing would improve the data used in future air quality modeling that is conducted for the Granite City area or the St. Louis region for $PM_{2.5}$ air quality. If found to be necessary for the attainment of the NAAQS for $PM_{2.5}$, including attainment of the anticipated future revisions to the $PM_{2.5}$

Thresholds for a major source:
Federal PSD rules, 40 CFR 52.21 - Either 100 or 250 tons/year, depending on the category of source
State nonattainment NSR rules, 35 IAC Part 203 – 100 tons/year
Threshold for a major modification for emissions of $PM_{2.5}$ - 10 tons/year

[13] It is expected that only BOFs that recently underwent permitting for proposed modifications, if any, will be subject to limits that address emissions of $PM_{2.5}$. Such limits would be a consequence of the New Source Review rules that apply to modifications and, even if technically sound, would not provide any insight as to an appropriate limit for these BOFs as they are not being modified.

[14] Due its size and other project-specific considerations, the baghouse for this project will be designed by the selected manufacturer specifically for the project. The baghouse will not be a stock model of baghouse.

NAAQS by USEPA, the data gathered by this testing could assist in development of new standards for the BOFs, either in terms of PM, PM_{10} or $PM_{2.5}$ emissions, as appropriate.[15] Finally, the data gathered by these tests would support future permitting in Illinois and in other states in circumstances in which NSR rules do require that limits be set for particulate emissions as $PM_{2.5}$.[16]

16. Condition 3-1(b)(ii) of the draft construction permit, as it addresses the required testing for emissions of filterable PM_{10} and $PM_{2.5}$, should not specify that this testing must be conducted with USEPA Method 201 or 201A. Rather, use of only Method 201A should be specified. This is because Method 201 only measures PM_{10} emissions, whereas Method 201 can be used for measurements of both PM_{10} and $PM_{2.5}$.

The error in the draft permit identified by this comment will be corrected in any construction permit that is issued. That is, the measurements of PM_{10} and $PM_{2.5}$ emissions that are required must be made using USEPA Method 201A.

17. Condition 3-1 (e)(iii) of the Draft Construction Permit would require the final report for emission testing that is submited to the Illinois EPA to contain the operating parameter limits for the new baghouse control system that are proposed by US Steel based on such testing. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what are the procedure and the timeframe in which Illinois EPA reviews and establishes them?

The provisions of the Iron and Steel NESHAP, including 40 CFR 63.9(h)(2)(ii), 63.7790(b)(1), 63.7800(b)(3) and 63.7824(a) and (c), govern the operating parameters limits for the BOFs with baghouse control system, which are addressed by this comment. This NESHAP does not provide for approval of a source's proposed operating parameters limits by a permitting authority. Rather the limits that are established for operating parameters under this NESHAP are the levels of operating parameters during performance testing. These levels are contained or documented in the current Operating and Maintenance Plan for a subject facility which the source must maintain pursuant to this NESHAP, which plan specifies how the subject facility must be operated.[17]

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[15] It should not be expected that this testing would ever be used to demonstrate compliance with standards or limits for $PM_{2.5}$ emissions, as there would not be any limits in terms of $PM_{2.5}$ emissions when this testing is conducted.

[16] US Steel would also use the results of this testing in preparing the "performance report" required for this project by Condition 6(d) of the construction permit. In this report, US Steel must evaluate the reduction in emissions that is achieved by this project for emissions of particulate as $PM_{2.5}$.

[17] In this case, to revise or set new operating parameter limits for the capture system on the BOFs under the Iron and Steel NESHAP, US Steel must first submit a written notification or request to the Illinois EPA to conduct performance tests that would be the basis of the new operating parameters limits. In this case, this notification would address the "initial performance test" conducted for the BOFs with the new baghouse control system. It is expected that this notification would also address the initial operation of the BOFs with the baghouse system, until the performance tests are conducted. During this period, the current limits for operating parameters of the capture system, with control of secondary emissions with the existing ESP, would no longer be applicable but testing will not yet have been conducted to demonstrate the adequacy of the new limits for operating parameters with the baghouse system. In conjunction with US Steel's written notification for planned testing, subject to any directives from the Illinois EPA in response to this notification, US Steel must also revise its operation and maintenance plan under the NESHAP. This revision would need to address the levels of operating parameters during the initial operation of the BOFs with the baghouse, consistent with US Steel's description of operation during this period as provided in the written notification for testing.

The next step in setting new operating parameter limits is for performance tests to be conducted for the BOFs to demonstrate the adequacy of the new limits. These performance tests would be conducted with the new baghouse control system operating at the levels of operating parameters that US Steel seeks to establish as the new limits. Following the date

18. Condition 3-2(a) of the draft construction permit would require US Steel to make measurements in order to determine the PM efficiency of the new baghouse. The condition would allow for these measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

These measurements, which would relate to the efficiency of the new baghouse control system,[18] are being required to obtain information on the amount of PM collected by this system. This information is of interest to the Illinois EPA as related to the overall reduction in particulate emissions of the BOFs that is achieved in actual practice by this new system.[19] The required measurements are not needed to confirm compliance with an applicable limit or control requirement. As such, it is reasonable and appropriate for the construction permit to provide flexibility in the approach that US Steel uses for these measurements. At this time, this is especially true, as neither approach to measurements is preferred. Direct measurements of the PM loading into the baghouse would be expected to be more precise and correlate directly with measurements of emissions. However, these measurements would be taken over a relatively short period of time so would not necessarily be more accurate than indirect measurements, based on the amount of particulate collected by this system over a week or month. Indirect measurements would likely be more accurate as they address a longer period of operation of the BOFs. However, they would be less precise, as much larger amounts of material would be involved. As such, there is not a clear preference for the approach that should be taken to the measurements.

19. Currently with the ESP, the PM emissions of the BOP furnaces are reported to be 439.5 tons/year. With the new baghouse system, they would be 405.4, which boggles my mind.

The emission data cited by this comment, which was provided by US Steel for the application for a construction permit, is a very conservative evaluation of the change in emissions that would accompany this project. It reflects maximum operation of the BOFs, at their annual capacity, and a minimum level of improvement in control of emissions by the new baghouse system. Accordingly, this data overstates both current emissions and future emissions. A better assessment for the change in emissions is provided later, in response to another comment.

20. For certain conditions that are rendered "unnecessary" only after the new baghouse control system becomes operational,[20] revised Permit 95010001 should specify that the current conditions remain

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of testing, US Steel would be expected to continue to operate at or above the levels of parameters present during testing if testing demonstrated compliance while operating at those levels.

The final step in the process of setting new operating parameter limits is US Steel's submittal to the Illinois EPA of the report for this testing, with the new values for these limits. With this report, US Steel must also certify that the BOFs operated at these values of operating parameters during testing and that the testing was properly conducted for the purpose of setting new limits for operating parameters. As part of this step, US Steel must also revise its operating and maintenance plan to reflect that these new limits for operating parameters are applicable on a continuing basis.

[18]The efficiency of a baghouse, in percent, is calculated as follows:

100 x [1 – (Inlet Mass – Outlet Mass)/Outlet Mass] = Percent Control Efficiency

[19]Based on public comments, this information is also of concern to the public as it would support comparison between the new baghouse control system and baghouse systems at other sources.

[20]The Project Summary indicates that the following conditions that are proposed for deletion would be rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e)

in effect until the new baghouse becomes operational. This would ensure that the source continues to demonstrate compliance with permit limits in the manner currently provided while the baghouse is being constructed, until the time that the new baghouse becomes operational.

Revised Permit 95010001, as issued by the Illinois EPA, includes the provision suggested by this comment (new Condition 11(b)). This condition explicitly requires that the source continue to comply with certain conditions or requirements of the previous permit during the period until the new baghouse control system becomes operational.[21] The draft of the revised permit would have relied on the fact that these requirements, which will continue in effect until the new control system begins operation, are also contained in the Clean Air Act Permit Program (CAAPP) permit for the source.[22] However, the continued applicability of these requirements until the new system begins operation can also be explicitly provided for in the revised permit.

The approach that is now being taken in revised permit has added further complexity to the permit. Since the revised permit now provides for compliance with existing requirements while the baghouse control system is being constructed, the various conditions that contain these requirements must be appropriately carried over in the revised permit. In particular, minor technical corrections and updates must also be made to the requirements for continuous operational monitoring for stack gas flow rate and waste gas suction (former Conditions 12 and 13, revised Condition 12), which would not have been needed if these requirements had not been carried over in the revised permit. In particular, in the revised permit, these requirements must reflect developments in permit requirements for monitoring systems, with similar requirements set for both systems and provision for use of computerized systems for recording of data.[23]

21. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: Conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP)),[24] and Condition 10 and Attachment A (procedures to ensure proper operation of the ESP for the BOFs). The Illinois EPA states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and the federal National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, pages 1 - 3. The key element of this rationale is that

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(recordkeeping for ESP flow rates for charging and tapping), 13(a), (c) and (d) (monitoring for waste gas suction, measured as static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, pages 3 - 6.

[21]**New Condition 11(b) also addresses the possibility that the baghouse control system that is now planned does not go forward but another emission reduction project with a control system for secondary emissions from the BOF would occur in the future. This condition generally provides that the subject requirements in the original permit remain in effect until either the new baghouse control system that is now planned begins operation or another control system for secondary emissions begins operation. This is because any other new control system for secondary emissions would present similar issues as the planned baghouse system, making the subject requirements that were originally established in 1995 in Permit 95010001 unnecessary.**

[22]**The changes to the CAAPP permit for the source that are planned to address the new baghouse control system would maintain the effectiveness of the subject conditions until this new control system becomes operational.**

[23]**In addition, former Condition 12(c) improperly suggested that emissions testing to evaluate alternative set points for the capture system would have to be conducted at the established set points. This would paradoxically mean that testing to evaluate alternative set points would not actually be possible, since such testing would have to conducted at the established set points.**

[24]Condition 9(a) of the current permit requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using USEPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

the monitoring provisions of the Iron and Steel NESHAP are sufficient to assure compliance with the relevant permit limits as originally established. Accordingly, the permit should clearly establish a connection between the permit and the Iron and Steel NESHAP. Such a connection could be made by including conditions in the permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant permit limits. (This information would then be appropriately re-iterated in the CAAPP permit.) This is of concern because the CAAPP permit should not be used to supersede, replace, or otherwise eliminate the independent enforceability of the terms and conditions in the PSD permit.[25]

In place of the current compliance provisions in Permit 95010001 that would be rendered inappropriate or unnecessary with the new baghouse control system,[26] the revised permit that has been issued includes a condition, as requested by this comment, requiring that the source comply with all applicable compliance requirements of the Iron and Steel NESHAP for the BOFs, including operation, maintenance, testing, monitoring and recordkeeping requirements. (See Condition 9 in the revised permit.[27]) When the new baghouse control system begins operation and starts to control particulate emissions from charging and tapping of the BOFs, the requirements of the Iron and Steel NESHAP will take the place of the compliance provisions in Condition 9 of the former permit, which will no longer apply. The requirement of the Iron and Steel NESHAP, 40 CFR 63.7800(b), related to an operations and maintenance plan, will immediately take the place of the requirements in former Condition 10 of the former permit.[28] As a consequence, the revisions that have been made to Permit 95010001 would maintain the "independent enforceability" of this permit.[29]

22. The revised PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the permit rather than to the related conditions of the CAAPP permit that address the provisions of the NESHAP. As a construction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

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[25] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, May 20, 1999. Available at http://www.epa.gov/ttn/caaa/t5/memoranda/hodan7.pdf.

[26] As already been discussed, operational and monitoring requirements that will be rendered inappropriate with the new control system have not necessarily been physically removed from revised Permit 95010001. Rather, to maintain continuity of requirements in the revised permit itself, the subject requirements are physically present in the revised permit but will cease to be effective when the new baghouse control system begins operation.

[27] New Condition 9 in Permit 95010001 broadly requires that the source comply with applicable requirements of the Iron and Steel NESHAP for BOFs, without specifying the particular requirements that are applicable. This is sufficient as the Iron and Steel NESHAP is a federal regulation, codified in the Code of Federal Regulations, and is directly enforceable. In addition, relevant requirements of this regulation as applicable to the source are recapitulated in the CAAPP permit for the source. This also avoids the need for future revisions to Permit 95010001 as might be needed if the Iron and Steel NESHAP is revised in the future by USEPA. (Based on the Information Collection Requests made by USEPA in 2011 for the steel industry, it is anticipated that USEPA will be making revisions to this NESHAP.)

[28] As explained in the Project Summary, the specific requirements for operation of the control system for the BOFs in Attachment A are already outdated and obsolete. The Iron and Steel NESHAP generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) The Iron and Steel NESHAP, 40 CFR 63.7800(b), now further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, the requirements for proper operation of the BOFs and ESP system should not be set in the level of detail specified by Attachment A in the former permit.

[29] It is noteworthy that the guidance from USEPA cited by this comment does not directly apply to the current action. The cited guidance addressed actions that may be taken in a Title V permit. In the present action, the Illinois EPA has issued a revised construction permit, taking a permitting action under Title I of the Clean Air Act, not an action under Title V of the Clean Air Act.

The revised permit, as issued, would maintain the independent enforceability of the PSD permit. As discussed above, when the new baghouse control system begins operation, the relevant provisions of the NESHAP would serve in place of the compliance procedures of the current PSD permit that address control of particulate, with procedures that are equal to or better than that provided by the original PSD permit. For example, monitoring of gas flow rates in the duct work would serve in place of operational monitoring of stack flow rate. Operational practices that would be documented in an operation and maintenance plan, which would evolve in response to improvements and other changes in those practices, would serve in place of the operational practices for the ESP that are specifically identifies in the original PSD permit, many of which are already outdated.[30]

23. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 CFR 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at page 8. Clarification is needed to ascertain the actual amount of the projected overall emissions reduction due to the project.

The Illinois EPA does not believe that the information requested by this comment, which relates to the planned issuance of a construction permit for the new baghouse control system, is needed to support that proposed action. This is because an essential element of a modification under New Source Review is that a proposed project would act to increase emissions of one or more pollutants that are regulated under New Source Review. As discussed, the proposed baghouse system would be an emission reduction project for particulate emissions of the BOFs and would be carried out to meet provisions of the Agreement. The new baghouse system would not increase the capacity or efficiency of the BOFs. There also would not be any collateral increases in emissions of other, non-target pollutants from the operation of the system. As such, the new baghouse system should not be considered a modification for purposes of New Source Review.[31]

Even though the reduction in particulate emissions need not be quantified in response to this comment, the Illinois EPA has further examined the amount of the emissions reduction that may be assumed for this project. This evaluation has been conducted in terms of emissions of PM_{10} because underlying emission data is more reliable for PM_{10} than for $PM_{2.5}$. For purposes of PSD, 40 CFR 52.21, the historic actual emissions of the BOFs are appropriately assumed to be on the order of 314 tons of PM_{10} per year.[32] The future emissions of projected future actual emissions should be expected to be at most about 260 tons of PM_{10} per year.[33] This yields a reduction of approximately 54 tons of PM_{10} per year.

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[30]The revised PSD permit would not attempt to make other enhancements to the PSD permit, as might be needed to address deficiencies in the compliance procedures in the original PSD permit. As confirmed by the guidance from USEPA cited by this commenter, those enhancements are appropriately made in the CAAPP permit for the source as part of the process of establishing appropriate periodic monitoring for the source.

[31]For example, refer to correspondence from USEPA concerning a proposed improvement of particulate matter control at Lehigh Portland Cement in Mitchell, Indiana (Letter, February 12, 2001, Pamela Blakley, USEPA Region 5, Air Programs Branch, to Paul Dubenetzky, Office of Air Management, Indiana Department of Environmental Management.)

[32]The average of the PM_{10} emissions reported by US Steel in its Annual Emission Reports for the peak years of production during the last ten years, 2004 and 2005, is 313.90 tons per year. In each of these years, the BOFs operated at about 72 percent of their permitted annual rate.

[33]The future emissions were conservatively calculated assuming that the BOFs would actually operate near their permitted annual rate compared to the maximum rate that US Steel has achieved in practice, i.e., 90 percent compared to 75 percent. To account for the normal operation of control devices, the baghouse and ESP were also conservatively assumed to comply with applicable emission standards under the new control configuration by 40 and 20 percent respectively. For example,

24. Condition 8 of Permit 95010001, which limits the opacity of emissions from the BOF shop to 20 percent, would be revised to require compliance with this limit using the procedures in 35 IAC 212.446(c) instead of the procedures prescribed by previous Conditions 9(a) and (b). The permit record does not indicate that Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). Condition 8 in the current permit appears to be more stringent than in the draft of the revised permit since Conditions 9(a) and 9(b) of the current permit requires opacity observations to be conducted on at least a weekly basis. Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

The changes to the permit addressed by this comment do not act to relax the stringency of the opacity standard for the BOF shop, as suggested by this comment. Rather these changes involve either changes to the compliance procedures that accompany this standard that are appropriate to address the installation of the new baghouse control system[34] or are straightforward clarifications or corrections to technical elements of those compliance procedures.

Former Condition 9(a) dealt with opacity observations that the source was required to conduct for the BOF shop to verify compliance with the established opacity standard for the BOF shop, 20 percent. The source was required to conduct these observations at least weekly. The source of emissions (opacity) from the BOF shop is secondary emissions from the BOFs that are not captured. Former Condition 9(a) set a frequency for these opacity observations by the source for a BOF shop in which the BOFs did not have a separate control system for their secondary emissions. However, when secondary emissions of the BOFs are controlled with the new baghouse control system, weekly observations of opacity from the BOF shop by the source should not be needed. The new baghouse control system, with its improved capture hooding and baghouse, will control secondary emissions more effectively than the current control system, which uses one ESP for control of both primary and secondary emissions. In this regard, the Iron and Steel NESHAP does not require any observations for the opacity of emissions from a BOF shop by a source other than observations made in conjunction with periodic testing of stack emissions of particulate matter. Rather, this NESHAP appropriately relies on continuous operational monitoring for the capture system for secondary emissions from BOFs to address continuous compliance with an opacity standard of 20 percent, 3-minute average. This NESHAP provides appropriate base compliance procedures for this permit recognizing that the control measures used on the BOFs may improve over time, as will be addressed in future construction permits and in the CAAPP/Title V operating permits for the source.[35]

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rather than having emissions of 31.9 pounds per hour (745,200 scfm/min x 60 min/hr ÷ 7,000), on annual basis, actual PM_{10} emissions would be 19.2 pounds/hr (31.9 x {1.0 - 0.4} = 19.14 pounds/hour).

[34] The stringency of this opacity limit is unaffected by the revision of the permit. The limit continues to apply at all times. The source is not excused from an obligation to conduct opacity observations as needed in practice to confirm compliance with this limit. Compliance can also be independently determined by observations by members of the Illinois EPA staff that are certified opacity observers.

[35] Under the CAAPP program, the compliance procedures that are appropriate for the current configuration of emission units and control(s) at a source must be addressed each time that the CAAPP permit for the source is renewed. This is because CAAPP permits must provide for Periodic Monitoring.

The procedures by which opacity observations are to be made for the BOF shop was addressed by former Condition 9(c), not former Condition 9(b).[36] The removal of former Condition 9(c) from the permit does not affect the stringency of the opacity limit. This is because Condition 8 now cites 35 IAC 201.446(c), the state standard that limits opacity from the BOF shop to 20 percent. Like former Condition 9(c), 35 IAC 212.446(c) provides that compliance with the 20 percent opacity limit is to be determined using USEPA Method 9. Unlike former Condition 9(c), 35 IAC 212.446(c) also further provides that "compliance shall be determined by averaging any 12 consecutive observations taken at 15 second intervals." This is a necessary clarification as Method 9 would otherwise provide that compliance with the opacity limit is to be determined as a 6 minute average, based on 24 individual observations.[37]

25. In a separate permit application, US Steel has applied for a construction permit for an emissions reduction project that involves a new baghouse control system for secondary emissions of the BOFs. Because operation of this new control system will render certain requirement of existing Permit 95010001 obsolete, US Steel requested that this permit be revised to remove those obsolete conditions and the Illinois EPA has granted this request. In order to denote where conditions have been removed, the draft of revised Permit 95010001 would have included explanatory notes identifying where conditions had been removed. For consistency, a note should also be included after Condition 18 in the revised permit stating that the "note" that previously accompanied this condition has been removed from the permit.

Revised Permit 95010001 includes the explanatory note requested by this comment. The purpose of the various explanatory notes that have been included in the revised permit is generally to avoid possible future confusion. Most importantly, they enable a person who is referring to the revised permit to understand why the conditions in the permit are not numbered consecutively and there are gaps in the numbering.[38] The change requested by this comment could also serve to avoid possible future confusion. It would make clear that

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[36]Former Condition 9(b) dealt with actions to be taken in the event of an outage of the continuous opacity monitoring system on the ESP. At this time, that condition is considered obsolete as it "contemplated" and directly provided for an interruption in the operation of the continuous opacity monitoring system on the ESP. Given the reliability of opacity monitors, it is not reasonable to expect such outages to now be a normal occurrence. Accordingly, any outages of the opacity monitoring system that would occur should be addressed in the context of potential enforcement. It should not be "condoned" as such outages have been contemplated and addressed by a condition in a permit that specifies the consequences that accompany any such outage. This is particularly true now that this opacity monitoring system for the ESP is required by the Iron and Steel NESHAP, as well as being implicitly required by this permit.
Moreover, former Condition 9(b) was also flawed as it indicated that in the event of monitor outage, human observations of opacity from the ESP stack were to be conducted during "any normal work day (i.e., Monday through Friday)." In the event of such outages, the timing of such observations should be a matter that is determined on an event-specific basis. For example, if an upset of the ESP occurred during an outage of the opacity monitor, it could well be appropriate for the source to immediately arrange for opacity observations to be made even if the event occurred on a Saturday or Sunday.

[37] Incidentally, the 20 percent opacity limit for the BOF shop in 35 IAC 212.446(c) should "be expected" to be identical to the 20 percent opacity limit in Condition 8, as set in Permit 95010001 in 1995. This is because 35 IAC 212.446(c) was subsequently adopted to codify the 20 percent opacity limit for the BOF shop set by the permit as part of Illinois' State Implementation Plan (SIP). The 20 percent opacity for the BOF shop is more stringent than the 30 percent opacity limit that would otherwise apply pursuant to 35 IAC 212.123.

[38]The preferred practice of the Illinois EPA when issuing revised construction permits is to retain the numbering of conditions from the previous permit as this can be practically and reasonably accomplished. This maintains continuity in the numbering of conditions between the old and new versions of a permit. It minimizes possible confusion that might occur if the conditions in a permit were simply renumbered when a revision adds or removes conditions from the permit.
In the absence of the explanatory notes that have been included in the revised permit, someone who was referring to the revised permit would be uncertain whether they were reviewing a complete copy of the permit or whether certain conditions had been in some way omitted from the particular copy of the permit.

the previous note, which provided a definition of a "BOF cycle," was intentionally removed in the revised permit.[39] Accordingly, the change requested by this commenter was made.

26. I appreciate the potential air quality benefits of this project and the work that US Steel and the Illinois EPA and have done for this project.

This comment, which does not request any changes to the draft permits, is acknowledged.

27. In the Project Summary for the revisions to Permit 95010001, the procedures that are being used to process this application are addressed in Footnote 13, which provides in relevant part:

> This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable.

In an effort to avoid any further delay in the issuance of a construction permit for the baghouse control system (Permit 11050006), US Steel agreed to a public comment period for the revisions to Permit 95010001. However, this should not be viewed as precedent for processing these type of administrative changes to a PSD permit, where the changes result in no increase in emissions and have no adverse impact on air quality.

The Illinois EPA agrees with the general observation made by this comment. The approach taken by the Illinois EPA in the processing of the revisions to Permit 95010001 should not be taken as a general precedent precluding the processing of revisions to PSD permits by administrative amendment, whereby certain revisions to PSD permits may be directly made by the permitting authority without a public comment period. Rather, the procedural approach that was taken for the revisions to Permit 95010001 reflects a narrow finding by the Illinois EPA for the appropriate procedures for this permitting action, considering the entirety of the circumstances for this action.[40]

28. The proposed revisions to Permit 95010001 are administrative in nature and are not required to be subject to a public comment period. Illinois EPA, on its own, could have administratively amended Permit 95010001 without a public comment period.

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[39] The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle n the permit. It is inconsistent with the related definition for steel production cycle that USEPA adopted in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

[40] Moreover, as the changes to Permit 95010001 involve emissions of particulate, it is debatable whether changes have even been made to a "PSD permit." The changes do not involve "PSD review requirements," e.g., Best Available Control Technology (BACT), because the project addressed by this permit was not a major modification for emissions of particulate. However, the Illinois EPA chose to proceed as if the entirety of Permit 95010001 is a PSD permit. As discussed, this should preclude any future question whether the procedures used for this revision of Permit 95010001 were adequate and sufficient, thereby assuring that the revised permit is legally authorized and the outdated provisions of the previous version of this permit are no longer applicable.

As observed by this comment, the Illinois EPA could arguably have elected to revise Permit 95010001 by administrative amendment. However, this was not the approach that the Illinois EPA elected to take. Based on the nature of the requested revisions and the various surrounding circumstances, the Illinois EPA found that a public comment period was warranted before the permit was revised. Accordingly, the Illinois EPA prepared a draft of the revised permit. In response to the comments that were received on the draft permit, the revised permit that has now been issued differs from the draft permit in a number of respects, as has already been discussed.

29. USEPA developed a draft of guidance addressing the procedures for processing modifications of PSD permits, Revised Draft Policy on Permit Modifications and Extensions, USEPA, July 5, 1985 (Draft Guidance). Although this guidance was never finalized, it still provides direction on the appropriate procedures to be used for different categories of modifications to PSD permits. In this guidance, USEPA categorized proposed changes to PSD permits as administrative, minor, significant, or fundamental, based on the significance of the proposed changes and the extent of review that the permitting authority must conduct.[41] Of particular relevance for this action, is the guidance that is provided for proposed modifications to PSD permits that are categorized as administrative changes.[42, 43] In this regard, this guidance provided:

> Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emission or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decision originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or trading, must be carefully documented) and minor work clarifications. ...
>
> The lack of emissions and impact increases for amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to PSD permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in

[41] The categorization of proposed changes also considers whether the source or project is operating. USEPA explained that the guidance typically imposes a less rigorous process for changes at operating units because, among other factors, "a project in its earlier phases is much more flexible than one already operating."

[42] In the Draft Guidance, USEPA characterizes minor changes as entailing changes to applications or issued permits and a certain amount of additional review by the permitting authority, but not constituting either a fundamental or significant change. Emissions or impacts increase as a result of minor changes but not above the significance level.

Significant and fundamental changes were characterized as increasing emissions above significance levels and/or changing the basic nature of an emissions source.

Minor, significant, and fundamental changes to PSD permits are collectively described as revisions of PSD permits, as distinguished administrative amendments of PSD permits. For revisions of permits, unlike administrative amendments, the Draft Guidance would require public participation prior to issuance of any revised permit. Draft Guidance, page 15.

[43] In this case, these changes to Permit 95010001 would not constitute "revisions," as these changes do not address changes in the method of operation or result in a net significant emissions increase. Because the changes would not constitute revisions, a public comment period was not needed for these proposed changes to Permit 95010001.

> highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company are operated. See Draft Guidance, page 11.

Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The changes will not increase emissions and do not involve any fundamental changes at the source. Very little review and no reanalysis of the original PSD permit application was needed. The changes also would not adversely impact air quality or change regulatory requirements.

Based on the Draft Guidance, it was clearly reasonable and appropriate for the Illinois EPA to have provided for public participation on the proposed changes to Permit 95010001. This is because, as stated in the passage from the Draft Guidance cited by this comment, this guidance directs permitting authorities to provide for public participation on administrative amendments to PSD permits in instances where the proposed changes are sufficiently important to necessitate public participation.[44] Given both the nature of the proposed changes and the public interest in this source, the Illinois EPA reasonably found that this was the case.

The project is "important" as it relates to a significant improvement in control of particulate emissions in an area that is designated nonattainment for $PM_{2.5}$. This improvement will be the result of the Agreement between the Illinois EPA and US Steel While the overall objective in revising Permit 95010001 is simple, to accommodate this improvement, implementation has required consideration of a variety of changes to a number of conditions in the previous permit. The actual nature and reason for the various changes to affected conditions was not necessarily readily apparent or obvious.[45] This permitting action must also appropriately consider and be coordinated with the processing of the construction permit for the new baghouse control system and the CAAPP permit that has been issued for the Granite City Works. Because of this complexity, it was reasonable to provide a public comment period on this proposed action.

It is also unquestioned that the Granite City Works has historically been of interest to the public, as demonstrated by the interest in other recent permitting actions for this source.[46] This further supports the decision of the Illinois EPA to provide a public comment period on a draft of the planned revisions to Permit 95010001. Moreover, a public comment period is mandatory for the application for construction permit for the new baghouse control system,

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[44] As noted by this comment, the Draft Guidance provides that there may be instances "where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary." The example given for a case where public participation may be justified for an administrative amendment is a change in ownership of a "proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company were operated." Draft Guidance, page 11.

[45] The current changes to Permit 95010001 required the Illinois EPA to again, consider the requirements that were applicable to the BOFs in light of both the existing ESP and the new baghouse. In particular, the Illinois EPA had to evaluate the removal of operational requirements that had become outdated or would become infeasible with the new baghouse control system. The Illinois EPA's review also considered the removal of operational requirements for the BOFs that had been made obsolete by new regulatory requirements that now apply.

[46] Indeed, USEPA recently acted on a petition from the American Bottom Conservancy for USEPA review of the CAAPP permit for this source issued by the Illinois EPA. In its decision, *Order Granting in Part and Denying in Part Petition for Objection to Permit*, December 3, 2012, USEPA granted the petition in part and the Illinois EPA will in the future be appropriately responding to USEPA's Order.

Application 11050006.[47] Because the public comment period for processing the revision to Permit 95010001 was combined with the public comment period for Application 11050006, it should not significantly affect the overall timing for permitting of the new baghouse control system.

30. USEPA has issued administrative amendments to PSD permits without providing for public participation.[48]

The fact USEPA has made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the specific circumstances of this action. As already explained, the Illinois EPA's decision to hold a public comment period considered the entirety of circumstances for this requested permit revision.[49]

31. State and local permitting authorities have also approved administrative amendments to PSD permits.[50, 51]

The fact that state and local permitting authorities may have made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the particular circumstances in this case.[52]

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[47] **A public comment period is mandatory on the application for the construction permit for the new baghouse control system as part of the Integrated Processing of that application, whereby the construction permit that is issued would authorize certain changes to the CAAPP permit for the Granite City Works by administrative amendment.**

[48] For example, in 2008, Hovensa requested the removal of provisions for rolling averages from the CO emission limits for certain emission units in its PSD permit, since continuous emissions monitoring was not required, making rolling averages impractical. USEPA agreed with Hovensa, concluding that "there is no benefit in requiring compliance based on rolling averages." USEPA revised the PSD permit accordingly, further explaining " . . .these requested changes will not result in any increase in emissions or cause any adverse air quality impacts. Therefore, EPA is approving these revisions administratively." (Letter to K. Antoine, Environmental Director, Hovensa, LLC, from B. Finazzo, Director, Division of Environmental Planning and Protection, USEPA, Region II, October 13, 2008.)

[49] **Incidentally, the changes to the PSD permit for the Hovensa facility, which was cited in this comment, merely entailed the removal of provisions for 365-day rolling averaging from the CO limits for certain units at this facility. As such, the nature and effect of these changes is readily apparent. Without annual averaging, the stringency of the CO limits was, in fact, increased, with compliance with limits now required on a short-term basis, rather than on a long-term basis.**

[50] For example, a Nebraska facility obtained an administrative amendment to its PSD permit to extend compliance dates for new control equipment. In issuing this administrative amendment, the Nebraska Department of Environmental Quality (NDEQ) stated, "[t]he emissions and regulatory requirements for this facility will not change due to this modification." (Administrative Amendment to Prevention of Significant Deterioration Construction Permit for Abengoa Bioenergy Corporation, Nebraska Department of Environmental Quality, January 21, 2004.)

[51] In March 2012, in its Permit Evaluation and Statement of Basis for Minor Revision to the Major Facility Review Permit for Los Medanos Energy Center, LLC, Facility No. B1866, the Bay Area Air Quality Management District (BAAQMD) referenced USEPA's Draft Guidance, explaining that the change to the PSD permit for the Medanos Energy Center was considered administrative. In particular, on page 6 and 7 of this document, the BAAQMD stated, "The facility received an Authority to Construct and a PSD permit on 9/10/99. ... The changes to the changes in clearances in the compressor section, installation of the dry Low NOx combustors, and change out of the exhaust gas path components are considered an administrative change under the 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The scope of these changes will not increase permitted emissions of any PSD pollutants (e.g. NO_2, CO, PM_{10}, $PM_{2.5}$, VOC, Lead, Fluorides, Sulfuric Acid Mist, Hydrogen Sulfide, Total Reduced Sulfur) and will not require any changes to permit conditions established during the original PSD permitting action. PSD does not apply to this permitting action."

[52] **Incidentally, with respect to the permitting action by the NDEQ cited by this comment, the Illinois EPA could not find an "administrative amendment" issued to Abengoa Bioenergy on January 21, 2004 that extended certain compliance dates in**

32. In the Project Summary, Footnote 13, the Illinois EPA stated that the changes to Permit 95010001 are being processing separately from the processing of the baghouse construction permit in order to subject the changes to Permit 95010001 "to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124. . . ." Although 40 CFR 124.1 indicates that Part 124 contains USEPA's "procedures for issuing, modifying, revoking and reissuing, or terminating all . . . PSD . . . 'permits' . . . ," Part 124 does not actually include procedures for revising PSD permits. In fact, 40 CFR 124.5(g)(1) is "Reserved for PSD Modification Provisions." Thus, Part 124 arguably does not apply to processing changes to PSD permits.

The observation made in this comment provides legal support for the administrative judgment that permitting authorities currently exercise in practice with respect to procedures that are used for processing revisions to PSD permits, including their reliance on USEPA's Draft Guidance. As USEPA has not codified the appropriate procedures for processing various types or classes of revisions to PSD permits, permitting authorities must exercise administrative judgment when selecting the appropriate procedure to use when processing a particular application for revisions to a PSD permit.

33. Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The requested changes result in no emissions increase at the source and no fundamental changes at the source. Very little review, if any, and no reanalysis of the original application, was necessary. The proposed changes in this case also would not increase emissions, adversely impact air quality or change any emissions or regulatory requirements. Accordingly, the proposed changes should have been made by administrative amendment.

As already discussed, the Illinois EPA does not disagree with the classification of the changes to Permit 95010001 as "administrative amendments" under the Draft Guidance. However, this guidance still directs permitting authorities to exercise discretion to provide for public participation for administrative amendments to PSD permits in instances where it may be warranted. More generally, irrespective of the Draft Guidance, the Illinois EPA had the authority and duty to appropriately consider whether public participation should be provided for the proposed changes to Permit 95010001. Given the circumstances of the proposed changes to this permit, including the nature of the changes and the public's previous interest in this source, the Illinois EPA reasonably elected to provide for public participation on a draft of the revised permit.

FOR ADDITIONAL INFORMATION

Questions about the permit decision should be directed to:

Bradley Frost, Community Relations Coordinator
Illinois Environmental Protection Agency
Office of Community Relations
1021 North Grand Avenue, East
P.O. Box 19506

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an issued PSD permit. Rather, the Illinois EPA found a permit issued on this date to Abengoa Bioenergy for modifications to this source, for which the draft permit had been subject to public participation. (Prevention of Significant Deterioration (PSD) Construction Permit for Abengoa Bioenergy Corporation, NDEQ, January 21, 2004.)

ATTACHMENT 1:

LISTING OF SIGNIFICANT CHANGES BETWEEN THE DRAFT PERMIT AND THE ISSUED PERMIT

Findings

Finding 1(a)*(revised)*: The scope of this finding, which generally describes the nature of revisions that have been made in the revised permit, has been reduced. In the issued permit, like the draft permit, this finding explains that the permit has been revised to remove requirements that would be inconsistent with the use of a separate control system for secondary emissions of the BOFs, as is planned. In the issued permit, this finding no longer mentions revision because of inconsistency with requirements of the Iron and Steel NESHAP. It also does not mention inconsistency with requirements in the Clean Air Act Permit Program (CAAPP) permit for the source. This change responds to a comment that the Illinois EPA, in the Project Summary, improperly indicated that certain operational and monitoring requirements need not be included in the revised PSD permit because of requirements that now exist in the Iron and Steel NESHAP and in the CAAPP permit for the source. As observed by this comment, the relationship between the revised permit, the Iron and Steel NESHAP, and the CAAPP permit is not as simple as would have been indicated by this finding in the draft permit. In particular, as the revised permit would rely on provisions of the Iron and Steel NESHAP, this should be and is now explicitly provided for by the revised permit. Accordingly, in the issued permit, this finding only generally explains that revisions have been made in the revised permit to address the new control system planned for the BOFs.

Finding 3(c)*(new)*[53]: This new finding provides that the revised permit will not become effective when it is issued. Rather, the effectiveness of the revised permit will be appropriately delayed to address the possibility that a petition for review of this permit is submitted to the USEPA's Environmental Appeals Board (Board), appealing the revised permit. In addition, if the revised permit is appealed, the revised permit would not become effective until either the Board declines the petition for review or it makes a decision on the merits that does not remand the permit back to the Illinois EPA. These provisions are consistent with the relevant provisions of 40 CFR Part 124 that deal with issuance of PSD permits.[54] This change to the permit resulted from further evaluation in response to comments concerning the administrative process being used for the revision of this permit. These comments, which are addressed in the body of this Responsiveness Summary, argued that the Illinois EPA could have issued this revised permit without holding a public comment period. While considering those comments, the Illinois EPA realized that the draft of the revised permit would not include provisions to accommodate an appeal of the issued permit in accordance with 40 CFR Part 124. The revised permit should accommodate such an appeal because the Illinois EPA has processed the revision of this permit as a revision to a PSD permit. Accordingly, new Finding 3(c) has been included in the revised permit to enable an appeal of the permit in a manner that is consistent with the provisions of 40 CFR Part 124.[55]

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[53]In the issued permit, a cross-reference to this new finding is now provided after the "Date Revision Issued" in the information block at the top of the permit.

[54]The USEPA's Environmental Appeals Board hears appeals of PSD permit actions taken by USEPA and by other delegated permitting authorities. The USEPA's administrative rules for these appeal proceedings are found in 40 CFR Part 124, Procedures for Decisionmaking.

[55]It should be noted that new Finding 1(c) does not indicate that the Illinois EPA has determined that the issuance of this revised permit is a PSD permit action. Rather, it reflects a belief that it is appropriate to proceed as if the changes that have been made to this permit entail issuance of a revised PSD permit. Among other things, this is because of the form of the original permit, the extent of the changes that have been made to the permit, and US Steel's expressed desire for certainty in the authoritativeness of the revised permit. However, this does not mean that the Board, in response to a petition for review of the revised permit, could not conclude that the issuance of this revised permit was

Conditions

Condition 8*(revised)*: Wording in this condition, which restates the applicable state standard for opacity of emissions from the roof monitor of a BOF shop, 35 IAC 212.446(c), has been corrected. In the issued permit, this condition addresses a standard that applies to the "opacity of emissions" rather than to "visible emissions." It is evident that this condition addresses opacity as the limit is expressed as a percentage.[56] The change is a result of a comment, which is addressed in the body of this Responsiveness Summary, that expressed concern about the addition of a regulatory citation to this condition. As part of the further consideration that occurred, it was decided that this simple correction should be made to the wording of Condition 8.[57]

Condition 9/ Former Conditions 9 and 10 *(revised)*[58]: Condition 9 now requires US Steel to operate and maintain the BOFs and associated capture and control systems in accordance with applicable requirements of the Iron and Steel NESHAP. This change was made in response to a comment that the removal of previous Conditions 9 and 10, as proposed in the draft of the revised permit would act to eliminate independent enforceability of the permit. To maintain such enforceability, this comment further suggested that, as the revised permit would rely on provisions of the Iron and Steel NESHAP in place of the provisions that would be removed, the revised permit should require compliance with applicable provisions of this NESHAP. This would make the requirements of the Iron and Steel NESHAP that would now take the place of Conditions 9 and 10 actually enforceable under the permit. As the change suggested by this comment would merely memorialize the basis for removal of former Conditions 9 and 10 from the permit and enhance the practical enforceability of the substantive requirements in the permit, the Illinois EPA has proceeded as requested by this comment.

In the issued permit, Condition 9 clarifies the relationship between the revised permit and the Iron and Steel NESHAP. Since provisions of this NESHAP will serve in place of the compliance procedures in former Conditions 9 and 10 of the permit, Condition 9 in the issued permit addresses operational and maintenance requirements for the BOFs and associated capture and control systems. It specifically requires US Steel to comply with applicable provisions of this NESHAP for operational monitoring, performance testing, operating parameter limits, and operation and maintenance of equipment. With regard to performance testing, Condition 9 also further provides that unless US Steel is willing to consider all particulate measured by NESHAP testing to be PM-10, tests must also be conducted for emissions of PM-10. This additional requirement was needed because this NESHAP does not require performance testing for PM-10 emissions, since it sets particulate limits in term of PM. This further provision will require testing to also be conducted for PM-10 emissions if US Steel elects to consider the distinction between PM and PM-10 when determining compliance with Condition 8 (35 IAC 212.458(b)(23)), which sets limits for particulate emissions in terms of filterable PM-10.

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not a PSD permit action. Notably, emissions of particulate, which are addressed through the provisions of the permit that have been revised, were not originally subject to PSD review.

[56]Standards for visible emissions do not set limits for the percentage of visible emissions. Such standards may simply prohibit such emissions. They may also restrict the amount of time during which such emissions occur. For example, visible emissions from flares are commonly restricted to a total of 5 minutes in any two-hour period.

[57]In addition, other changes have been made between the draft and issued revised permit that involve conditions that the draft permit would not have retained. As these other conditions will now be "temporarily" retained in the permit until the new control system starts operation, as will be discussed later, it was necessary to make corrections to the wording and structure of those conditions. As these changes have now been made to those other conditions, it was also appropriate that Condition 8 be changed so that it now refers to opacity of emissions.

[58]The parenthetical notes in the issued permit, which identify provisions of the previous permit that are not in the revised permit, have also been appropriately adjusted to address this change. In the revised permit, these notes no longer indicate that Condition 9, Conditions 11, 12 and 13 and Condition 39 have been removed from the permit.

In the issued permit, Condition 9 is also accompanied by a note that explains that compliance with the operational and maintenance requirements of the Iron and Steel NESHAP has been required as the means to verify ongoing compliance with the requirements of Conditions 7 and 8 of the permit and to address implementation of good air pollution control practice for the BOFs. This note is appropriate to clearly document the role of Condition 9 in the revised permit. In the absence of this explanation, one might improperly assume that the purpose of Condition 9 in the revised permit is merely to facilitate ongoing compliance with the Iron and Steel NESHAP.

Condition 11*(revised)*: In the issued permit, this condition, which deals with use of flame suppression to minimize emissions from tapping of the BOFs, has been revised rather than being removed, as was proposed. Condition 11 in the issued permit now requires that flame suppression be used until the new baghouse control system begins operation. The original Condition 11, which requires use of flame suppression, has been retained as Condition 11(a). New Condition 11(b) now provides that this requirement for flame suppression will terminate when US Steel begins operation of a capture and control system for secondary emissions from the BOFs, as now planned, which makes flame suppression infeasible or unnecessary. This change was made in response to a comment suggesting that the revised permit should retain requirements that would be applicable until the new baghouse control system begins operation, rather than simply relying on the presence of these requirements in the CAAPP permit for the source to maintain their continued effectiveness until they actually cease to apply. As the approach suggested by this comment would maintain the enforceability of the subject requirements under the PSD permit, where they originated, the Illinois EPA has proceeded as requested by this comment.

Because this comment also addressed other requirements that would only continue in effect until the new baghouse control system begins operation, new Condition 11(b) also addresses the effectiveness of those other requirements. In particular, Condition 11(b) also provides that the operational requirements and associated monitoring requirements that have now been retained in the permit as Conditions 12 and 13 would also terminate upon startup of a new control system for secondary emissions.

Conditions 12 and 13 *(revised)*: In the issued permit, these conditions, which deal with operational requirements for BOFs and associated monitoring requirements, have been revised rather than being removed, as was proposed. This change was also made in response to the comment that suggested that the revised permit should retain requirements that would be applicable until the new control system begins operation, rather than relying on the source's CAAPP permit to maintain the effectiveness of requirements until such time. As the suggested approach would maintain the enforceability of the subject requirements under the PSD permit, the Illinois EPA has proceeded as requested by this comment.

Since the revised permit now explicitly requires compliance with existing operational and monitoring requirements until the new baghouse control system begins operation, these requirements had to be appropriately carried over in the revised permit with editorial and technical corrections and updates to these requirements. First, the organization and order of requirements in the issued permit have been revised for clarity. The operational requirements have been kept in Condition 12.[59] All monitoring requirements are now in Condition 13.[60] Second, the wording of both Conditions 12 and 13 has been simplified to improve

[59]In Condition 12 in the revised permit, the first requirement (Condition 12(a)), is now the general requirement to operate the BOFs with the stack gas flow rate of the ESP at certain minimum levels. Condition 12(b) now addresses the values of minimum set points while only a single furnace is in operation. Condition 12(c) now addresses the operational requirements when both BOFs are operating.

[60]In Condition 13, the first requirement (Condition 13(a)), is that US Steel operate and maintain a continuous operational monitoring system for the gas flow rate in the stack for the ESP, with recordkeeping for the monitored flow rates for each steel production cycle for the different phases of BOF operation (former Conditions 12(c) and 12(e)). Condition 13(b) now addresses operational monitoring for waste gas suction in the main downcomer duct of

clarity and facilitate practical enforceability.[61, 62] Lastly, the contents of Condition 13 have been revised to reflect developments in permit requirements for operational monitoring systems, with similar requirements now set for both systems.[63] These revisions were needed because requirements for these monitoring systems have now been included in the revised permit and the permit should now reflect current practice in permitting for establishing requirements for operational monitoring systems, with similar requirements for both systems.

Explanatory note following Condition 18 *(new)*: This new note explains that the previous note that followed Condition 18 has not been included in the revised permit. This change was made in response to a comment requesting this change. The parenthetical explanatory notes in the revised permit generally explain where conditions have been removed as part of the revision of the permit to avoid possible future confusion. They enable someone who is referring to the revised permit to understand that the gaps in the numbering of conditions in the permit is intentional. The change requested by this comment could also serve to avoid possible future confusion. It would make clear that the previous note, which provided a definition of a "BOF cycle," was also intentionally removed in the revised permit.[64] Accordingly, the change requested by this comment was made.

Condition 39 *(revised)*: In the issued permit, this condition, which deals with reporting of deviations, has been revised rather than being removed, as was proposed. This change was made in response to a comment

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the ESP, again requiring recordkeeping for each production cycle for the different phases of operation (former Conditions 13(a) and 13(d)). Condition 13(c) now provides for quarterly calibration of both the monitoring system for waste gas suction, as well as the monitoring system for stack gas flow rate (former Condition 13(f)). Condition 13(d) now contains the general obligations for these monitoring systems, addressing both the monitoring system for stack gas flow rate, as well as the system for waste gas suction (former Condition 13(b)).

[61]For example, in revised Condition 12, the wording of Condition 12(a) (former Condition 12(c)), now clearly provides that the ESP does not need to be operated at the established set points for purposes of emissions testing. While allowing for alternative set points to be approved, the wording of the former condition improperly suggested that testing to evaluate alternative set points would have to be conducted while operating at the established set points. If applied literally, this would have meant that testing to evaluate alternative set points could not actually be conducted, since the ESP would have to be operated at the established set points during such testing.

Condition 12(c) (former Condition 12(b)) also imposes requirements related to overlapping of charging and tapping when both BOFs are in use. The revised condition now provides that all four of these requirements must be part of US Steel's Operating Procedures for the BOFs. As there are four distinct requirements, the Operating Procedures for the BOFs must include them all, rather than only two of them, as was formerly specified.

[62]In Condition 13 of the revised permit, various flaws in the wording of the requirements for monitoring in the former permit have been eliminated. For example, the basic provision for monitoring of ESP stack gas flow rate in the revised permit, Condition 13(a), now explicitly requires US Steel to conduct continuous operational monitoring for this parameter. The previous condition (former Condition 12(d)), did not directly require such monitoring. Instead, it required US Steel to calibrate, operate and maintain a continuous strip chart recorder for this parameter "as measured by the stack gas flow meter during ESP use." As such, the former condition permit did not directly address operation of a continuous monitoring system for ESP stack gas flow rate. In addition, this condition did not actually require "monitoring" whenever the BOFs were being operated, only when the ESP was being operated.

[63]In the issued permit, identical requirements are set for both the continuous monitoring system for stack flow rate and the continuous monitoring system for waste gas suction. Both systems must be operated, maintained and calibrated by US Steel. The data that is recorded for both systems must include data for each steel production cycle for each phase of operation (charging, refining and tapping). Both systems must be calibrated on at least a quarterly basis. Finally, both systems must be operated at all times that a BOF is in operation and shall be used as mechanisms to ensure that adequate draft is maintained.

[64]The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle in the permit since it is inconsistent with the related definition for steel production cycle adopted by USEPA in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production cycle as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

that the removal of Conditions 9 and 10, as was proposed in the draft of the revised permit, would act to eliminate independent enforceability of the permit. Changes were made in the revised permit to directly respond to this comment, as have been discussed. Changes with respect to Condition 39 were also appropriate in responsed to this comment. In particular, Condition 39 is now retained so that the revised permit independently addresses reporting of deviations from permit requirements and does not rely solely on the parallel provisions of the CAAPP permit for reporting of any deviations from the requirements of the permit. As Condition 39 is now retained in the revised permit, necessary technical and editorial corrections have been to this condition.[65]

[65] In the revised permit, Condition 39 requires reporting of "deviations" rather than "exceedances," with such reporting required even if the deviations have been determined or identified by US Steel by a means other than the records required by the permit. As deviations are now addressed, which may include matters other than emissions exceedances, information is not required for the amount of emissions released. If a deviation involves excess emissions, information on the amount or nature of excess emissions would typically be included as part of the required description of the deviations. Finally, as reporting of deviations is also now addressed in the CAAPP permit for the source, the condition recognizes that the CAAPP permit may specify other requirements for reporting of deviations.

Kras, Kim

From: Frost, Brad
Sent: Tuesday, May 21, 2013 9:08 AM
To: Kras, Kim
Cc: Carter, Sally
Subject: FW: US Steel Baghouse Project PSD Response to Comments Final PSd 12142012.docx
Attachments: US Steel Baghouse Project PSD Response to Comments Final PSd 12142012.docx

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
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brad.frost@illinois.gov

From: Frost, Brad
Sent: Monday, December 17, 2012 3:01 PM
To: Carter, Sally
Subject: FW: US Steel Baghouse Project PSD Response to Comments Final PSd 12142012.docx

The responsiveness summary. I'll get you the permit in a few

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AUG 12 2013

REVIEWER JRM

From: Romaine, Chris
Sent: Monday, December 17, 2012 1:59 PM
To: Frost, Brad
Subject: US Steel Baghouse Project PSD Response to Comments Final PSd 12142012.docx

Attached is the Responsiveness Summary for the revised PSD permit.

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

December 2012

Responsiveness Summary For Public Questions and Comments on the Revision to Construction Permit/PSD Approval 95010001 To Accommodate an Emission Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois

Source Identification No.: 119813AAI
Permit No.: 95010001

DECISION

On December 17, 2012, the Illinois Environmental Protection Agency (Illinois EPA) revised Permit 95010001, for United States Steel Corporation, Granite City Works (US Steel), to accommodate a planned emission reduction project for the two basic oxygen furnaces (BOFs) at this steel mill. In response to comments, the revised permit that has been issued, as compared to the draft of a revised permit prepared by the Illinois EPA, clarifies current compliance procedures for the BOFs, which will continue to apply while the new control system for the BOFs is being constructed. The issued permit also clarifies the compliance procedures that will apply after the new control system begins operation.

BACKGROUND

US Steel requested revisions to Construction Permit/PSD Approval 95010001, originally issued in 1996, to accommodate an emission reduction project for the two basic oxygen furnaces (BOFs). This project will involve the installation of a new control system with a filter or "baghouse" for secondary particulate emissions from the BOFs, i.e., the particulate emissions from charging and tapping of the BOFs. This new control system is the subject of an Agreement between US Steel and the Illinois EPA. The actual construction of this system is the subject of a separate application for a construction permit, Application 11050006, which is still pending with the Illinois EPA, Bureau of Air.[1]

Revisions to Permit 95010001 have been made to address certain operational requirements in this permit for the BOFs that will no longer be appropriate or possible when the new control system begins operation. The revisions to Permit 95010001 will also remove operational requirements for the BOFs that are now considered obsolete or outdated given new requirements that apply to the BOFs, notably new emission standards and associated operating requirements for BOFs adopted by USEPA. However, the revisions do not involve the emission limits for the BOFs that were originally set by Permit 95010001.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. Applications for air pollution control permits must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial review of US Steel's application for revisions to Permit 95010001, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a revised permit and prepared a draft of a revised version of Permit 95010001 for public review and comment. The comment period for the revised permit was combined with the comment period for a draft of a construction permit for the new baghouse control system, Application 11050006.

The public comment period began with the publication of a notice in the Granite City Press Record on May 30, 2012. The notice ran again in the Granite City Press Record on June 6th and 13th, 2012. A public hearing was held on July 18, 2012 at the Granite City Township office to receive oral comments and answer

[1] The construction permit application for the baghouse control system, Application 11050006, is being processed using "Integrated Processing." Accordingly, the construction permit for this system, if issued, would also authorize related changes to be made by administrative amendment to the Clean Air Act Permit Program (CAAPP) permit for the Granite City Works. (The Clean Air Act Permit Program (CAAPP) is Illinois' operating permit program pursuant to Title V of the federal Clean Air Act for major source of emissions and certain other sources of emissions.) In the draft of the construction permit for the baghouse control system that the Illinois EPA has prepared, the specific changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate this system would be identified in Part 2 of the that construction permit.

questions regarding the two applications and the two draft permits (the drafts of revised Permit 95010001 and new Construction Permit 11050006[2]). The comment period closed on August 17, 2012.

Following the close of the comment period, the Illinois EPA reviewed the oral comments that were made at the public hearing and the written comments that were submitted. This document was prepared to document this review of comments by the Illinois EPA to accompany the issuance of revised Permit 95010001. As related to US Steel's application for a construction permit for the new baghouse control system, which is still pending, when the Illinois EPA takes final action on that application, the Illinois EPA will prepare a separate responsiveness summary to accompany that action.[3]

AVAILABILITY OF DOCUMENTS

The revision of Permit 95010001 issued by the Illinois EPA and this responsiveness summary are available by internet, http://www.epa.state.il.us/public-notices/.[4] Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The Illinois EPA administers the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, for sources in Illinois pursuant to a delegation agreement with USEPA. When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's Procedures for Decision Making, 40 CFR Part 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the USEPA to review the issued PSD permit. In addition, any person who failed to file comments or failed to participate in the public comment period on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision. If comments were submitted on the draft PSD permit that requested changes in the permit, the PSD permit will not become effective until after the period for filing an appeal has passed. The federal procedures governing appeals of PSD permit are contained in the Code of Federal Regulations, "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19.

To accommodate an appeal of revised Permit 95010001 to USEPA, the revised permit does not immediately take effect upon issuance. The effectiveness of the permit is delayed to provide time for appeal of the permit to USEPA and, if such an appeal is filed, for the appropriate resolution of the appeal.

If an appeal will be submitted to USEPA for the revised permit by regular mail, it should be sent on a timely basis to the following address. If an appeal will be sent by a means other than regular mail, refer to the website of the USEPA's Environmental Appeals Board for instructions http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf).

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

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[2]The draft construction permit also identifies the related changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate the new baghouse control system.

[3]This responsiveness summary also addresses certain comments related to the draft construction permit that were made by the public at the public hearing. This has been done to respond to all comments from the public in this document.

[4]This information may also be available on the internet database that USEPA Region 5 maintains for certain air pollution control permits issued in Illinois, Illinois Permit Database, available at http://www.epa.gov/reg5oair/permits/ilonline.html.

Telephone: 202/233-0122

QUESTIONS AND COMMENTS WITH RESPONSES BY THE AGENCY

1. The new baghouse would control emissions from tapping and charging of the BOFs, but emissions from refining would continue to be controlled by the existing ESP. Is there a reason that the baghouse could not also control refining?

   The new baghouse system is not designed to control the refining or "primary emissions" of the BOFs because that is not the main target of the Agreement. The bulk of the improvement in control of particulate emissions that is sought is for the secondary emissions of the BOFs, i.e., emissions from charging and tapping of the BOFs. This is where the current control system on the BOFs may be greatly improved to obtain significant benefits for ambient air quality.

   Moreover, baghouses commonly are not considered suitable for control of the primary emissions of a BOF. If one attempted to use a baghouse to control these emissions, the high moisture level in the flue gas entering the baghouse would quickly blind the filter material, interfering with proper operation of the baghouse. The high moisture level is a consequence of the water sprays that are used to cool the flue gas before it enters the baghouse or other control device. This cooling is needed to both protect the control device from damage and, as the volume of flue gas is reduced by cooling, to facilitate effective control of emissions. Accordingly, the primary emissions of BOFs are controlled with ESPs or scrubbers.[5] In this case, primary emissions would continue to be controlled by the existing ESP. The performance of the existing ESP should be expected to improve significantly when it is no longer being relied upon for control of secondary emissions and can be operated for control of only primary emissions.[6]

2. While I am grateful that a baghouse system will be installed on the BOFs, could the system be better? It has taken many years to get to this point. As long as US Steel is installing a baghouse system for the BOFs, why not install the most protective one available, with the greatest emission reduction that can be made. It will be better for public health and perhaps the area can truly meet the National Ambient Air Quality Standards (NAAQS) for particulate matter.

   The Illinois EPA appreciates this sentiment. However, the planned project for the BOFs is appropriate. Secondary emissions from the BOFs will be controlled by a baghouse control system that is specifically designed for effective capture and control of secondary emissions, with greater capacity that the current hooding. This system will be connected to a large baghouse designed for control of secondary emissions, rather than being served by an ESP that must also control the primary emissions of the BOFs.

3. The baghouse at Gateway Energy, the new coke plant in Granite City, is required to remove 99.99 percent of the $PM_{2.5}$ emission. The baghouse proposed to be used for the BOP furnaces would only have 97 percent removal. Why won't the new baghouse for the BOFs be as good as the baghouse at Gateway Energy?

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[5] For example, the particulate emissions of the other BOFs in Illinois, at Mittal Steel, in Riverdale, in the Chicago area, is controlled by the combination of an ESP system for primary emissions and a baghouse system for secondary emissions.
[6] Accordingly, the Agreement appropriately provided for a new baghouse system for control of emissions from charging and tapping. The Agreement also sets a more stringent limit for the ESP, 0.01 gr/scf , compared to 0.02 gr/scf, However, it did not provide for a new control system be installed for refining emissions of the BOFs, replacing the existing ESP.

The main baghouse at Gateway Energy and the new baghouse planned for the BOFs at the Granite City Works should not be directly compared in the way that they have been in this comment. In fact, the proposed baghouse at US Steel would be subject to the same performance requirement for as the main baghouse at the existing Gateway Energy plant, i.e., a limit of 0.005 gr/scf for filterable particulate matter in the exhaust from the baghouse.[7]

The cited efficiency values for these baghouses actually address different aspects of the performance of these two control systems. As such, they do not provide a direct comparison of the two baghouses and do not indicate that the new baghouse for the BOFs would not be as "good" as the baghouse at Gateway Energy. For the Gateway baghouse, the efficiency value is actually a specification for the removal capability of the filter fabric, not the overall control efficiency of the baghouse. In contrast, the cited efficiency value for the new control system for the BOFs actually addresses the design control efficiency of the new baghouse for secondary emissions from the existing BOFs at the Granite City Works. As such, it considers the actual nature and loading of particulate matter in the stream that would be entering the baghouse. For baghouses, these are critical factors for the numerical value of control efficiency that is achieved by a baghouse when it is used in a particular application. Accordingly, the performance of filter-type control devices is more appropriately addressed, from a technical perspective, in terms of the outlet dust loading that is achievable or required. On this basis, the requirements for these two baghouses are identical.

4. USEPA has certified numerous filters for 99.99 percent removal efficiency for $PM_{2.5}$. According to the construction permit application, the proposed baghouse for the BOFs will have 97 percent removal efficiency for PM.

The Illinois EPA is not aware of any "filters," i.e., baghouses, that USEPA has certified for their removal efficiency. USEPA has certified various filtration materials for achievement of 99.99 percent removal for $PM_{2.5}$. These certifications are based on evaluations of samples of those materials made in a laboratory using a standardized analytical methodology. This methodology involves introducing a stream of particulate matter of uniform size at a constant rate to the sample of filter material that is being tested. As such, USEPA's certifications for filtration materials do not reflect the performance of the filtration fabrics in actual applications, much less the performance of entire baghouse systems. Accordingly, this comment does not provide meaningful data against which to compare the new baghouse control system for the BOFs.

Incidentally, it is expected that, in practice, the overall performance of the new baghouse will be better than 97 percent, which is a design specification for this device that was provided in the application.

5. Is this the best baghouse and filter available? Comparing the proposed baghouse to other baghouse units, will this be the best baghouse available? Are the full capabilities of the baghouse going to be used? Could the baghouse achieve a higher efficiency?

Since the new control system is an emission reduction project, a case-by-case review of the performance or the efficiency of the baghouse is not required by applicable rules. However, as reflected in the construction permit, the new baghouse control system must meet emission limits for particulate matter established by USEPA as Maximum Achievable Control

[7] Refer to Condition 4.1.5(a) of Construction Permit/PSD Approval 06070020.

Technology, under the Iron and Steel NESHAP, 40 CFR 63 Subpart FFFFF. As such, a modern baghouse is required.

6. If there is a baghouse control system or filter that would be more protective, that is what I want. I am thrilled about this project but I think of its cost. USEPA is going to set revised NAAQS for $PM_{2.5}$ and ambient air quality in Granite City is not going to meet them. It seems like this is the appropriate time to just get it done. Otherwise, it might not happen for a long time.

The Illinois EPA appreciates the desire to have the most efficient and protective baghouse control system for the BOFs. However, the planned project for the BOFs is a reasonable project that US Steel has committed to implement for control of secondary emissions. A modern capture system connected to a large baghouse will be installed, taking the place of the existing ESP for control of secondary emissions.[8]

7. The draft construction permit for the new baghouse control system would limit its emissions of particulate as particulate matter (PM) but not as PM_{10} or $PM_{2.5}$. For PM_{10} and $PM_{2.5}$, the permit would only require emissions testing followed by submission of a onetime report evaluating PM_{10} and $PM_{2.5}$ emissions with the new control system, presumably for purposes related to the state implementation plan. Why is there no ongoing accountability for PM_{10} and $PM_{2.5}$ emissions?

The permit addresses the particulate emissions of the BOFs in terms of PM because this currently is the most effective and practical way to address these emissions. This is also reason why the Agreement between US Steel and the Illinois EPA addressed the particulate emissions of the BOFs in terms of PM. This is possible because PM, PM_{10} and $PM_{2.5}$ are all different approaches to the measurement and quantification of particulate.[9] As a consequence, limits on the particulate emissions of an emission unit in terms of PM also act in practice to generally address and restrict the unit's emissions of PM_{10} and $PM_{2.5}$. In the simplest terms, a lower limit for particulate emissions in terms of PM, also results in lower emissions of particulate as PM_{10} and $PM_{2.5}$.

Currently, the most effective way to address control of particulate emissions from BOFs is as PM because this is how the particulate emissions of BOFs and their control systems have historically been addressed. There is a body of emission testing upon which to rely when making projections for the PM emission rates that are or will be achievable from BOFs with the use of certain control technology. A similar body of data does not exist for the control of emissions in terms of PM_{10} or $PM_{2.5}$. As a consequence, emission limits expressed in terms of PM can effectively be more stringent than limits expressed in terms of PM_{10} or $PM_{2.5}$. Since they have a better basis, they do not need to account for the high level of uncertainty that would need to be considered if limits were set in terms of PM_{10} or $PM_{2.5}$.[10] Emission limits in

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[8] There also have been significant improvements in ambient air quality in the Granite City area, with monitoring in recent years showing attainment of the present federal National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$.

[9] USEPA categorizes particulate as supercoarse, coarse, fine and ultra fine. Supercoarse particulate has an aerodynamic diameter of greater than 10 microns, coarse particulate has an aerodynamic diameter between 2.5 and 10 microns, fine particulate has an aerodynamic diameter between 2.5 and 0.1 microns, and ultrafine particulate has an aerodynamic diameter of 0.1 microns or less. PM_{10} is composed of coarse, fine, and ultrafine particulate. $PM_{2.5}$ is composed of fine and ultrafine particulate. As such, $PM_{2.5}$ is a subset or component of PM_{10}.

[10] For example, if $PM_{2.5}$ makes up approximately 20 percent of the particulate emissions of an emission unit after control, a limit of 0.005 gr/scf for PM is generally equivalent to a limit of 0.001 gr/scf for $PM_{2.5}$. (0.005 gr/scf x 0.20 = 0.001 gr/scf). In actual practice, when relying upon the relationship between different forms for particulate, one should consider the accuracy and reliability of the available data for particle size distribution (i.e., the percentage of the PM emissions that are of different sizes). The better the data for particle size distribution and the lower the variability in this data, the simpler and more consistent the relationship. For example, if the available data is only sufficient to indicate that between 10 and 30

terms of PM are also expected to be more effective because procedures for testing PM emissions have been used for decades and the conditions needed for accurate measurements are well understood. This is not the case for PM_{10} or $PM_{2.5}$.[11] This means that another source of uncertainty that would be present for limits in terms of PM_{10} or $PM_{2.5}$ is avoided when limits are set for PM.

In this case, limits in terms of PM are also more practical because the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, addresses particulate emissions from BOFs in terms of PM. Accordingly, the performance testing that is required pursuant to this NESHAP will also serve to address compliance with the permit limits for particulate. As such, compliance with particulate limits in terms of PM will be easier to implement.

Moreover, it should be apparent that the Agreement between US Steel and the Illinois EPA was made possible because it addresses particulate emissions in terms of PM, rather than $PM_{2.5}$. This enabled US Steel to make commitments for the emissions of the new baghouse control system that US Steel was confident could be met. It also minimized US Steel's burden for additional emissions testing that would not be required by the NESHAP. At the same time, limits for the new control system could still be set in the Agreement that should significantly reduce the secondary emissions of the BOFs, including emissions as $PM_{2.5}$.

8. Since there is a difference between $PM_{2.5}$ and PM_{10}, why would the draft construction permit for the new baghouse control system not set limits for $PM_{2.5}$.

As discussed, in this case, the difference between PM and $PM_{2.5}$ is not sufficient to support setting an emission limit in this construction permit in terms of $PM_{2.5}$. Reductions in the particulate emissions of the BOFs can be achieved with an emissions limit for the baghouse system that is in terms of PM.

9. How significant is it that the Agreement between US Steel and the Illinois EPA sets emission limits for particulate in terms of PM? Does this act to preclude the establishment of emissions limits in terms of $PM_{2.5}$ in the construction permit?

The Agreement does not directly preclude the establishment of limits for $PM_{2.5}$ in the construction permit for this emission reduction project. However, the approach taken to particulate emissions in the Agreement is significant as it is a reflection of the various considerations that culminated with an Agreement that addresses particulate emissions with limits that were expressed in terms of PM.

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percent of the PM emissions are $PM_{2.5}$ (i.e., 20 ± 10 percent), a limit for $PM_{2.5}$ based on a PM emission rate of 0.005 gr/scf would reasonably be set at 0.0015 gr/scf. To provide the necessary assurance that the limit can be complied with and is "achievable," the limit must be based on the upper bound for the fraction of PM that may be $PM_{2.5}$. In this example, this results in a $PM_{2.5}$ limit of 0.0015 gr/scf. (0.005 gr/scf x 0.30 = 0.0015 gr/scf).

Incidentally, if condensable particulate is present, another consideration for this relationship is the data that is available for emissions of condensable particulate. The relationship between emissions of PM, PM_{10} and $PM_{2.5}$ is most direct when condensable particulate is not a significant fraction of the particulate emissions, as is the case for the emissions of BOFs. The need for any of these considerations is avoided if limits for particulate can simply be set in terms of PM.

[11] For example, USEPA has not yet developed a reference method for testing emissions of filterable PM_{10} or $PM_{2.5}$ from "wet stacks." In a wet stack, moisture in the flue gas may lead to agglomeration of individual particles as they pass through the test apparatus. This prevents reliable and accurate measurements of PM_{10} or $PM_{2.5}$ emissions. The current test methods for filterable PM_{10} and/or $PM_{2.5}$ were developed for "dry stacks," where agglomeration is not a factor, and accordingly are only appropriate for testing of dry stacks.

10. Given that the purpose of the new baghouse control system is to reduce the $PM_{2.5}$ emissions of the BOFs, that the Granite City area is designated nonattainment for $PM_{2.5}$ and could well be nonattainment under revisions to the $PM_{2.5}$ NAAQS that USEPA has proposed, is there anything that prevents Illinois EPA from putting a $PM_{2.5}$ limit in the construction permit?

As discussed, a variety of considerations lead to a construction permit that addresses control of particulate emissions from the BOFs in terms of PM. Most significantly, a limit that addresses the particulate emissions of the BOFs in terms of PM also addresses emissions of $PM_{2.5}$, likely more effectively than if a limit were to be established in terms of $PM_{2.5}$. Accordingly, factors cited by this comment do not provide an adequate basis to set limits in terms of $PM_{2.5}$ in the construction permit for the new baghouse control system.

11. It seems that the draft construction permit for the baghouse control system has many provisions that are not in the Agreement. This suggests to me that the Illinois EPA chose not to put a $PM_{2.5}$ limit in that permit.

The draft construction permit would not set any emission limits that are not established by the Agreement or by applicable emission standards. The "other" provisions in this draft permit, which are broadly referred to by this comment, would deal with testing, operational monitoring, recordkeeping and reporting. These provisions would serve to verify ongoing compliance with the applicable emission limits. These provisions would also be needed to address the transition from the current requirements for testing, operational monitoring, recordkeeping and reporting to the new requirements that will apply with the baghouse control system. Finally, the permit would rely upon the general authority of the Illinois EPA to reasonably require sources to gather emission and emission related data. These provisions in the draft construction permit would be reasonable and appropriate, addressing aspects and implications of this emission reduction project that were not explicitly addressed in the Agreement. The presence of these provisions in the draft construction permit does not show that it would be appropriate for the construction permit for the baghouse system to set limits for $PM_{2.5}$ emissions.

12. Under what circumstances would the Illinois EPA set a $PM_{2.5}$ limit in a construction permit?

Construction permits issued by the Illinois EPA currently include limits for $PM_{2.5}$ emissions when federal or state "New Source Review" (NSR) rules necessitate such limits because of the nature and circumstances of the projects that are the subjects of the permits. The NSR rules do not provide a basis to set limits for emissions of $PM_{2.5}$ in the construction for the new baghouse control system for the BOFs. This is because this project will reduce the emissions of $PM_{2.5}$ from the BOFs.[12]

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[12] In general, construction permits currently set emission limits in terms of $PM_{2.5}$ for two types of projects relative to emissions of $PM_{2.5}$, "minor projects" and "major projects." For minor projects, which are far more common, construction permits set limits for $PM_{2.5}$ emissions as needed to address applicability of NSR. The limits for $PM_{2.5}$ emissions in these permits restrict emissions or the increases in emissions of $PM_{2.5}$ from a source or project to less than the emission thresholds at which the project would be considered major under the applicable NSR rules for its $PM_{2.5}$ emissions. However, since limits for PM emissions also serve to restrict emissions of $PM_{2.5}$, limits in terms of $PM_{2.5}$ are only set when limits in terms of PM or, in some cases, PM_{10} will also not be sufficient to address applicability of NSR rules to a project for $PM_{2.5}$ emissions.

For major projects for emissions of $PM_{2.5}$, which are far less common, NSR rules now generally require that the construction permits for such projects explicitly address $PM_{2.5}$ emissions, with limits that represent Best Available Control Technology or the Lowest Achievable Emission Rate that are in terms of $PM_{2.5}$ emissions.

The relevant emissions thresholds under the NSR rules that distinguish minor projects from major projects, i.e., major new sources and major modifications, are as follows:

13. Do any BOF shops at steel mills in the United States have limits for $PM_{2.5}$ emissions?

Given the current circumstances for control and regulation of $PM_{2.5}$ emissions, the Illinois EPA does not believe that any existing BOF shops in the United States, similar to this BOF shop, are subject to limits expressed in terms of $PM_{2.5}$ emissions.[13] In any case, it would not be an appropriate use of Illinois EPA resources to conduct a survey to definitively answer this question. This is because even if another existing BOF shop in the country is subject to limits for $PM_{2.5}$ emissions, it would not show that it is appropriate to include such limits in this construction permit. As already discussed, emissions of $PM_{2.5}$ can be addressed and restricted by limits for emissions of PM. This is because $PM_{2.5}$ is a component of PM so limits for PM emissions act in practice to also constrain $PM_{2.5}$ emissions.

14. There are gaps in the description of the new baghouse in the application for the new baghouse control system that make it difficult to evaluate the draft construction permit. On the general data and information form for the baghouse, the manufacturer and model number of the baghouse are shown as "to be determined." On the form for filter control equipment, the filter material is described simply as "polyester." The filtering area is also "to be determined." Inlet emission stream parameters, including mean particle diameter are unknown. Are there reasons why these details are not provided or were marked the way they were? Has Illinois EPA obtained any more information for the baghouse, such as the supplier, model number, or filter area or details concerning the operation of the baghouse?

The application contains the information that is currently available for the new control system. US Steel has not yet entered into a contract for this project and the new baghouse has not yet been designed.[14] The application is based on a preliminary or conceptual design that US Steel had prepared for the project, including the performance specifications that are to be met by the baghouse, i.e., a PM emission rate of no more than 0.005 grains/dry standard cubic foot. Given the cost of this project, US Steel will not enter into a contract for the baghouse until after this project is fully permitted. Only then will a firm be selected to provide the baghouse and the engineering design of this device be started.

15. Even though the draft construction permit would not set limits for emission of $PM_{2.5}$, it would require testing for emissions for $PM_{2.5}$, which I am not questioning. What use does the Illinois EPA plan to make of the results from this testing?

This testing would identify the specific relationship between the emissions of PM, PM_{10} and $PM_{2.5}$ from the BOFs. As such, $PM_{2.5}$ emission data gathered by this testing would improve the data used in future air quality modeling that is conducted for the Granite City area or the St. Louis region for $PM_{2.5}$ air quality. If found to be necessary for the attainment of the NAAQS for $PM_{2.5}$, including attainment of the anticipated future revisions to the $PM_{2.5}$

Thresholds for a major source:
Federal PSD rules, 40 CFR 52.21 - Either 100 or 250 tons/year, depending on the category of source
State nonattainment NSR rules, 35 IAC Part 203 – 100 tons/year
Threshold for a major modification for emissions of $PM_{2.5}$ - 10 tons/year

[13] It is expected that only BOFs that recently underwent permitting for proposed modifications, if any, will be subject to limits that address emissions of $PM_{2.5}$. Such limits would be a consequence of the New Source Review rules that apply to modifications and, even if technically sound, would not provide any insight as to an appropriate limit for these BOFs as they are not being modified.

[14] Due its size and other project-specific considerations, the baghouse for this project will be designed by the selected manufacturer specifically for the project. The baghouse will not be a stock model of baghouse.

NAAQS by USEPA, the data gathered by this testing could assist in development of new standards for the BOFs, either in terms of PM, PM_{10} or $PM_{2.5}$ emissions, as appropriate.[15] Finally, the data gathered by these tests would support future permitting in Illinois and in other states in circumstances in which NSR rules do require that limits be set for particulate emissions as $PM_{2.5}$.[16]

16. Condition 3-1(b)(ii) of the draft construction permit, as it addresses the required testing for emissions of filterable PM_{10} and $PM_{2.5}$, should not specify that this testing must be conducted with USEPA Method 201 or 201A. Rather, use of only Method 201A should be specified. This is because Method 201 only measures PM_{10} emissions, whereas Method 201 can be used for measurements of both PM_{10} and $PM_{2.5}$.

The error in the draft permit identified by this comment will be corrected in any construction permit that is issued. That is, the measurements of PM_{10} and $PM_{2.5}$ emissions that are required must be made using USEPA Method 201A.

17. Condition 3-1 (e)(iii) of the Draft Construction Permit would require the final report for emission testing that is submited to the Illinois EPA to contain the operating parameter limits for the new baghouse control system that are proposed by US Steel based on such testing. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what are the procedure and the timeframe in which Illinois EPA reviews and establishes them?

The provisions of the Iron and Steel NESHAP, including 40 CFR 63.9(h)(2)(ii), 63.7790(b)(1), 63.7800(b)(3) and 63.7824(a) and (c), govern the operating parameters limits for the BOFs with baghouse control system, which are addressed by this comment. This NESHAP does not provide for approval of a source's proposed operating parameters limits by a permitting authority. Rather the limits that are established for operating parameters under this NESHAP are the levels of operating parameters during performance testing. These levels are contained or documented in the current Operating and Maintenance Plan for a subject facility which the source must maintain pursuant to this NESHAP, which plan specifies how the subject facility must be operated.[17]

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[15] It should not be expected that this testing would ever be used to demonstrate compliance with standards or limits for $PM_{2.5}$ emissions, as there would not be any limits in terms of $PM_{2.5}$ emissions when this testing is conducted.

[16] US Steel would also use the results of this testing in preparing the "performance report" required for this project by Condition 6(d) of the construction permit. In this report, US Steel must evaluate the reduction in emissions that is achieved by this project for emissions of particulate as $PM_{2.5}$.

[17] In this case, to revise or set new operating parameter limits for the capture system on the BOFs under the Iron and Steel NESHAP, US Steel must first submit a written notification or request to the Illinois EPA to conduct performance tests that would be the basis of the new operating parameters limits. In this case, this notification would address the "initial performance test" conducted for the BOFs with the new baghouse control system. It is expected that this notification would also address the initial operation of the BOFs with the baghouse system, until the performance tests are conducted. During this period, the current limits for operating parameters of the capture system, with control of secondary emissions with the existing ESP, would no longer be applicable but testing will not yet have been conducted to demonstrate the adequacy of the new limits for operating parameters with the baghouse system. In conjunction with US Steel's written notification for planned testing, subject to any directives from the Illinois EPA in response to this notification, US Steel must also revise its operation and maintenance plan under the NESHAP. This revision would need to address the levels of operating parameters during the initial operation of the BOFs with the baghouse, consistent with US Steel's description of operation during this period as provided in the written notification for testing.

The next step in setting new operating parameter limits is for performance tests to be conducted for the BOFs to demonstrate the adequacy of the new limits. These performance tests would be conducted with the new baghouse control system operating at the levels of operating parameters that US Steel seeks to establish as the new limits. Following the date

18. Condition 3-2(a) of the draft construction permit would require US Steel to make measurements in order to determine the PM efficiency of the new baghouse. The condition would allow for these measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

These measurements, which would relate to the efficiency of the new baghouse control system,[18] are being required to obtain information on the amount of PM collected by this system. This information is of interest to the Illinois EPA as related to the overall reduction in particulate emissions of the BOFs that is achieved in actual practice by this new system.[19] The required measurements are not needed to confirm compliance with an applicable limit or control requirement. As such, it is reasonable and appropriate for the construction permit to provide flexibility in the approach that US Steel uses for these measurements. At this time, this is especially true, as neither approach to measurements is preferred. Direct measurements of the PM loading into the baghouse would be expected to be more precise and correlate directly with measurements of emissions. However, these measurements would be taken over a relatively short period of time so would not necessarily be more accurate than indirect measurements, based on the amount of particulate collected by this system over a week or month. Indirect measurements would likely be more accurate as they address a longer period of operation of the BOFs. However, they would be less precise, as much larger amounts of material would be involved. As such, there is not a clear preference for the approach that should be taken to the measurements.

19. Currently with the ESP, the PM emissions of the BOP furnaces are reported to be 439.5 tons/year. With the new baghouse system, they would be 405.4, which boggles my mind.

The emission data cited by this comment, which was provided by US Steel for the application for a construction permit, is a very conservative evaluation of the change in emissions that would accompany this project. It reflects maximum operation of the BOFs, at their annual capacity, and a minimum level of improvement in control of emissions by the new baghouse system. Accordingly, this data overstates both current emissions and future emissions. A better assessment for the change in emissions is provided later, in response to another comment.

20. For certain conditions that are rendered "unnecessary" only after the new baghouse control system becomes operational,[20] revised Permit 95010001 should specify that the current conditions remain

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of testing, US Steel would be expected to continue to operate at or above the levels of parameters present during testing if testing demonstrated compliance while operating at those levels.

The final step in the process of setting new operating parameter limits is US Steel's submittal to the Illinois EPA of the report for this testing, with the new values for these limits. With this report, US Steel must also certify that the BOFs operated at these values of operating parameters during testing and that the testing was properly conducted for the purpose of setting new limits for operating parameters. As part of this step, US Steel must also revise its operating and maintenance plan to reflect that these new limits for operating parameters are applicable on a continuing basis.

[18]**The efficiency of a baghouse, in percent, is calculated as follows:**

100 x [1 – (Inlet Mass – Outlet Mass)/Outlet Mass] = Percent Control Efficiency

[19]**Based on public comments, this information is also of concern to the public as it would support comparison between the new baghouse control system and baghouse systems at other sources.**

[20]The Project Summary indicates that the following conditions that are proposed for deletion would be rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e)

in effect until the new baghouse becomes operational. This would ensure that the source continues to demonstrate compliance with permit limits in the manner currently provided while the baghouse is being constructed, until the time that the new baghouse becomes operational.

Revised Permit 95010001, as issued by the Illinois EPA, includes the provision suggested by this comment (new Condition 11(b)). This condition explicitly requires that the source continue to comply with certain conditions or requirements of the previous permit during the period until the new baghouse control system becomes operational.[21] The draft of the revised permit would have relied on the fact that these requirements, which will continue in effect until the new control system begins operation, are also contained in the Clean Air Act Permit Program (CAAPP) permit for the source.[22] However, the continued applicability of these requirements until the new system begins operation can also be explicitly provided for in the revised permit.

The approach that is now being taken in revised permit has added further complexity to the permit. Since the revised permit now provides for compliance with existing requirements while the baghouse control system is being constructed, the various conditions that contain these requirements must be appropriately carried over in the revised permit. In particular, minor technical corrections and updates must also be made to the requirements for continuous operational monitoring for stack gas flow rate and waste gas suction (former Conditions 12 and 13, revised Condition 12), which would not have been needed if these requirements had not been carried over in the revised permit. In particular, in the revised permit, these requirements must reflect developments in permit requirements for monitoring systems, with similar requirements set for both systems and provision for use of computerized systems for recording of data.[23]

21. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: Conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP)),[24] and Condition 10 and Attachment A (procedures to ensure proper operation of the ESP for the BOFs). The Illinois EPA states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and the federal National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, pages 1 - 3. The key element of this rationale is that

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(recordkeeping for ESP flow rates for charging and tapping), 13(a), (c) and (d) (monitoring for waste gas suction, measured as static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, pages 3 - 6.

[21] **New Condition 11(b) also addresses the possibility that the baghouse control system that is now planned does not go forward but another emission reduction project with a control system for secondary emissions from the BOF would occur in the future. This condition generally provides that the subject requirements in the original permit remain in effect until either the new baghouse control system that is now planned begins operation or another control system for secondary emissions begins operation. This is because any other new control system for secondary emissions would present similar issues as the planned baghouse system, making the subject requirements that were originally established in 1995 in Permit 95010001 unnecessary.**

[22] **The changes to the CAAPP permit for the source that are planned to address the new baghouse control system would maintain the effectiveness of the subject conditions until this new control system becomes operational.**

[23] **In addition, former Condition 12(c) improperly suggested that emissions testing to evaluate alternative set points for the capture system would have to be conducted at the established set points. This would paradoxically mean that testing to evaluate alternative set points would not actually be possible, since such testing would have to conducted at the established set points.**

[24] Condition 9(a) of the current permit requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using USEPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

the monitoring provisions of the Iron and Steel NESHAP are sufficient to assure compliance with the relevant permit limits as originally established. Accordingly, the permit should clearly establish a connection between the permit and the Iron and Steel NESHAP. Such a connection could be made by including conditions in the permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant permit limits. (This information would then be appropriately re-iterated in the CAAPP permit.) This is of concern because the CAAPP permit should not be used to supersede, replace, or otherwise eliminate the independent enforceability of the terms and conditions in the PSD permit.[25]

In place of the current compliance provisions in Permit 95010001 that would be rendered inappropriate or unnecessary with the new baghouse control system,[26] the revised permit that has been issued includes a condition, as requested by this comment, requiring that the source comply with all applicable compliance requirements of the Iron and Steel NESHAP for the BOFs, including operation, maintenance, testing, monitoring and recordkeeping requirements. (See Condition 9 in the revised permit.[27]) When the new baghouse control system begins operation and starts to control particulate emissions from charging and tapping of the BOFs, the requirements of the Iron and Steel NESHAP will take the place of the compliance provisions in Condition 9 of the former permit, which will no longer apply. The requirement of the Iron and Steel NESHAP, 40 CFR 63.7800(b), related to an operations and maintenance plan, will immediately take the place of the requirements in former Condition 10 of the former permit.[28] As a consequence, the revisions that have been made to Permit 95010001 would maintain the "independent enforceability" of this permit.[29]

22. The revised PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the permit rather than to the related conditions of the CAAPP permit that address the provisions of the NESHAP. As a construction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

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[25] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, May 20, 1999. Available at http://www.epa.gov/ttn/caaa/t5/memoranda/hodan7.pdf.

[26] **As already been discussed, operational and monitoring requirements that will be rendered inappropriate with the new control system have not necessarily been physically removed from revised Permit 95010001. Rather, to maintain continuity of requirements in the revised permit itself, the subject requirements are physically present in the revised permit but will cease to be effective when the new baghouse control system begins operation.**

[27] **New Condition 9 in Permit 95010001 broadly requires that the source comply with applicable requirements of the Iron and Steel NESHAP for BOFs, without specifying the particular requirements that are applicable. This is sufficient as the Iron and Steel NESHAP is a federal regulation, codified in the Code of Federal Regulations, and is directly enforceable. In addition, relevant requirements of this regulation as applicable to the source are recapitulated in the CAAPP permit for the source. This also avoids the need for future revisions to Permit 95010001 as might be needed if the Iron and Steel NESHAP is revised in the future by USEPA. (Based on the Information Collection Requests made by USEPA in 2011 for the steel industry, it is anticipated that USEPA will be making revisions to this NESHAP.)**

[28] **As explained in the Project Summary, the specific requirements for operation of the control system for the BOFs in Attachment A are already outdated and obsolete. The Iron and Steel NESHAP generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) The Iron and Steel NESHAP, 40 CFR 63.7800(b), now further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, the requirements for proper operation of the BOFs and ESP system should not be set in the level of detail specified by Attachment A in the former permit.**

[29] **It is noteworthy that the guidance from USEPA cited by this comment does not directly apply to the current action. The cited guidance addressed actions that may be taken in a Title V permit. In the present action, the Illinois EPA has issued a revised construction permit, taking a permitting action under Title I of the Clean Air Act, not an action under Title V of the Clean Air Act.**

The revised permit, as issued, would maintain the independent enforceability of the PSD permit. As discussed above, when the new baghouse control system begins operation, the relevant provisions of the NESHAP would serve in place of the compliance procedures of the current PSD permit that address control of particulate, with procedures that are equal to or better than that provided by the original PSD permit. For example, monitoring of gas flow rates in the duct work would serve in place of operational monitoring of stack flow rate. Operational practices that would be documented in an operation and maintenance plan, which would evolve in response to improvements and other changes in those practices, would serve in place of the operational practices for the ESP that are specifically identifies in the original PSD permit, many of which are already outdated.[30]

23. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 CFR 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at page 8. Clarification is needed to ascertain the actual amount of the projected overall emissions reduction due to the project.

The Illinois EPA does not believe that the information requested by this comment, which relates to the planned issuance of a construction permit for the new baghouse control system, is needed to support that proposed action. This is because an essential element of a modification under New Source Review is that a proposed project would act to increase emissions of one or more pollutants that are regulated under New Source Review. As discussed, the proposed baghouse system would be an emission reduction project for particulate emissions of the BOFs and would be carried out to meet provisions of the Agreement. The new baghouse system would not increase the capacity or efficiency of the BOFs. There also would not be any collateral increases in emissions of other, non-target pollutants from the operation of the system. As such, the new baghouse system should not be considered a modification for purposes of New Source Review.[31]

Even though the reduction in particulate emissions need not be quantified in response to this comment, the Illinois EPA has further examined the amount of the emissions reduction that may be assumed for this project. This evaluation has been conducted in terms of emissions of PM_{10} because underlying emission data is more reliable for PM_{10} than for $PM_{2.5}$. For purposes of PSD, 40 CFR 52.21, the historic actual emissions of the BOFs are appropriately assumed to be on the order of 314 tons of PM_{10} per year.[32] The future emissions of projected future actual emissions should be expected to be at most about 260 tons of PM_{10} per year.[33] This yields a reduction of approximately 54 tons of PM_{10} per year.

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[30] The revised PSD permit would not attempt to make other enhancements to the PSD permit, as might be needed to address deficiencies in the compliance procedures in the original PSD permit. As confirmed by the guidance from USEPA cited by this commenter, those enhancements are appropriately made in the CAAPP permit for the source as part of the process of establishing appropriate periodic monitoring for the source.

[31] For example, refer to correspondence from USEPA concerning a proposed improvement of particulate matter control at Lehigh Portland Cement in Mitchell, Indiana (Letter, February 12, 2001, Pamela Blakley, USEPA Region 5, Air Programs Branch, to Paul Dubenetzky, Office of Air Management, Indiana Department of Environmental Management.)

[32] The average of the PM_{10} emissions reported by US Steel in its Annual Emission Reports for the peak years of production during the last ten years, 2004 and 2005, is 313.90 tons per year. In each of these years, the BOFs operated at about 72 percent of their permitted annual rate.

[33] The future emissions were conservatively calculated assuming that the BOFs would actually operate near their permitted annual rate compared to the maximum rate that US Steel has achieved in practice, i.e., 90 percent compared to 75 percent. To account for the normal operation of control devices, the baghouse and ESP were also conservatively assumed to comply with applicable emission standards under the new control configuration by 40 and 20 percent respectively. For example,

24. Condition 8 of Permit 95010001, which limits the opacity of emissions from the BOF shop to 20 percent, would be revised to require compliance with this limit using the procedures in 35 IAC 212.446(c) instead of the procedures prescribed by previous Conditions 9(a) and (b). The permit record does not indicate that Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). Condition 8 in the current permit appears to be more stringent than in the draft of the revised permit since Conditions 9(a) and 9(b) of the current permit requires opacity observations to be conducted on at least a weekly basis. Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

The changes to the permit addressed by this comment do not act to relax the stringency of the opacity standard for the BOF shop, as suggested by this comment. Rather these changes involve either changes to the compliance procedures that accompany this standard that are appropriate to address the installation of the new baghouse control system[34] or are straightforward clarifications or corrections to technical elements of those compliance procedures.

Former Condition 9(a) dealt with opacity observations that the source was required to conduct for the BOF shop to verify compliance with the established opacity standard for the BOF shop, 20 percent. The source was required to conduct these observations at least weekly. The source of emissions (opacity) from the BOF shop is secondary emissions from the BOFs that are not captured. Former Condition 9(a) set a frequency for these opacity observations by the source for a BOF shop in which the BOFs did not have a separate control system for their secondary emissions. However, when secondary emissions of the BOFs are controlled with the new baghouse control system, weekly observations of opacity from the BOF shop by the source should not be needed. The new baghouse control system, with its improved capture hooding and baghouse, will control secondary emissions more effectively than the current control system, which uses one ESP for control of both primary and secondary emissions. In this regard, the Iron and Steel NESHAP does not require any observations for the opacity of emissions from a BOF shop by a source other than observations made in conjunction with periodic testing of stack emissions of particulate matter. Rather, this NESHAP appropriately relies on continuous operational monitoring for the capture system for secondary emissions from BOFs to address continuous compliance with an opacity standard of 20 percent, 3-minute average. This NESHAP provides appropriate base compliance procedures for this permit recognizing that the control measures used on the BOFs may improve over time, as will be addressed in future construction permits and in the CAAPP/Title V operating permits for the source.[35]

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rather than having emissions of 31.9 pounds per hour (745,200 scfm/min x 60 min/hr ÷ 7,000), on annual basis, actual PM_{10} emissions would be 19.2 pounds/hr (31.9 x {1.0 - 0.4} = 19.14 pounds/hour).

[34]The stringency of this opacity limit is unaffected by the revision of the permit. The limit continues to apply at all times. The source is not excused from an obligation to conduct opacity observations as needed in practice to confirm compliance with this limit. Compliance can also be independently determined by observations by members of the Illinois EPA staff that are certified opacity observers.

[35]Under the CAAPP program, the compliance procedures that are appropriate for the current configuration of emission units and control(s) at a source must be addressed each time that the CAAPP permit for the source is renewed. This is because CAAPP permits must provide for Periodic Monitoring.

The procedures by which opacity observations are to be made for the BOF shop was addressed by former Condition 9(c), not former Condition 9(b).[36] The removal of former Condition 9(c) from the permit does not affect the stringency of the opacity limit. This is because Condition 8 now cites 35 IAC 201.446(c), the state standard that limits opacity from the BOF shop to 20 percent. Like former Condition 9(c), 35 IAC 212.446(c) provides that compliance with the 20 percent opacity limit is to be determined using USEPA Method 9. Unlike former Condition 9(c), 35 IAC 212.446(c) also further provides that "compliance shall be determined by averaging any 12 consecutive observations taken at 15 second intervals." This is a necessary clarification as Method 9 would otherwise provide that compliance with the opacity limit is to be determined as a 6 minute average, based on 24 individual observations.[37]

25. In a separate permit application, US Steel has applied for a construction permit for an emissions reduction project that involves a new baghouse control system for secondary emissions of the BOFs. Because operation of this new control system will render certain requirement of existing Permit 95010001 obsolete, US Steel requested that this permit be revised to remove those obsolete conditions and the Illinois EPA has granted this request. In order to denote where conditions have been removed, the draft of revised Permit 95010001 would have included explanatory notes identifying where conditions had been removed. For consistency, a note should also be included after Condition 18 in the revised permit stating that the "note" that previously accompanied this condition has been removed from the permit.

Revised Permit 95010001 includes the explanatory note requested by this comment. The purpose of the various explanatory notes that have been included in the revised permit is generally to avoid possible future confusion. Most importantly, they enable a person who is referring to the revised permit to understand why the conditions in the permit are not numbered consecutively and there are gaps in the numbering.[38] The change requested by this comment could also serve to avoid possible future confusion. It would make clear that

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[36] Former Condition 9(b) dealt with actions to be taken in the event of an outage of the continuous opacity monitoring system on the ESP. At this time, that condition is considered obsolete as it "contemplated" and directly provided for an interruption in the operation of the continuous opacity monitoring system on the ESP. Given the reliability of opacity monitors, it is not reasonable to expect such outages to now be a normal occurrence. Accordingly, any outages of the opacity monitoring system that would occur should be addressed in the context of potential enforcement. It should not be "condoned" as such outages have been contemplated and addressed by a condition in a permit that specifies the consequences that accompany any such outage. This is particularly true now that this opacity monitoring system for the ESP is required by the Iron and Steel NESHAP, as well as being implicitly required by this permit.
Moreover, former Condition 9(b) was also flawed as it indicated that in the event of monitor outage, human observations of opacity from the ESP stack were to be conducted during "any normal work day (i.e., Monday through Friday)." In the event of such outages, the timing of such observations should be a matter that is determined on an event-specific basis. For example, if an upset of the ESP occurred during an outage of the opacity monitor, it could well be appropriate for the source to immediately arrange for opacity observations to be made even if the event occurred on a Saturday or Sunday.

[37] Incidentally, the 20 percent opacity limit for the BOF shop in 35 IAC 212.446(c) should "be expected" to be identical to the 20 percent opacity limit in Condition 8, as set in Permit 95010001 in 1995. This is because 35 IAC 212.446(c) was subsequently adopted to codify the 20 percent opacity limit for the BOF shop set by the permit as part of Illinois' State Implementation Plan (SIP). The 20 percent opacity for the BOF shop is more stringent than the 30 percent opacity limit that would otherwise apply pursuant to 35 IAC 212.123.

[38] The preferred practice of the Illinois EPA when issuing revised construction permits is to retain the numbering of conditions from the previous permit as this can be practically and reasonably accomplished. This maintains continuity in the numbering of conditions between the old and new versions of a permit. It minimizes possible confusion that might occur if the conditions in a permit were simply renumbered when a revision adds or removes conditions from the permit.
In the absence of the explanatory notes that have been included in the revised permit, someone who was referring to the revised permit would be uncertain whether they were reviewing a complete copy of the permit or whether certain conditions had been in some way omitted from the particular copy of the permit.

the previous note, which provided a definition of a "BOF cycle," was intentionally removed in the revised permit.[39] Accordingly, the change requested by this commenter was made.

26. I appreciate the potential air quality benefits of this project and the work that US Steel and the Illinois EPA and have done for this project.

This comment, which does not request any changes to the draft permits, is acknowledged.

27. In the Project Summary for the revisions to Permit 95010001, the procedures that are being used to process this application are addressed in Footnote 13, which provides in relevant part:

> This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable.

In an effort to avoid any further delay in the issuance of a construction permit for the baghouse control system (Permit 11050006), US Steel agreed to a public comment period for the revisions to Permit 95010001. However, this should not be viewed as precedent for processing these type of administrative changes to a PSD permit, where the changes result in no increase in emissions and have no adverse impact on air quality.

The Illinois EPA agrees with the general observation made by this comment. The approach taken by the Illinois EPA in the processing of the revisions to Permit 95010001 should not be taken as a general precedent precluding the processing of revisions to PSD permits by administrative amendment, whereby certain revisions to PSD permits may be directly made by the permitting authority without a public comment period. Rather, the procedural approach that was taken for the revisions to Permit 95010001 reflects a narrow finding by the Illinois EPA for the appropriate procedures for this permitting action, considering the entirety of the circumstances for this action.[40]

28. The proposed revisions to Permit 95010001 are administrative in nature and are not required to be subject to a public comment period. Illinois EPA, on its own, could have administratively amended Permit 95010001 without a public comment period.

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[39] **The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle n the permit. It is inconsistent with the related definition for steel production cycle that USEPA adopted in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.**

[40] **Moreover, as the changes to Permit 95010001 involve emissions of particulate, it is debatable whether changes have even been made to a "PSD permit." The changes do not involve "PSD review requirements," e.g., Best Available Control Technology (BACT), because the project addressed by this permit was not a major modification for emissions of particulate. However, the Illinois EPA chose to proceed as if the entirety of Permit 95010001 is a PSD permit. As discussed, this should preclude any future question whether the procedures used for this revision of Permit 95010001 were adequate and sufficient, thereby assuring that the revised permit is legally authorized and the outdated provisions of the previous version of this permit are no longer applicable.**

As observed by this comment, the Illinois EPA could arguably have elected to revise Permit 95010001 by administrative amendment. However, this was not the approach that the Illinois EPA elected to take. Based on the nature of the requested revisions and the various surrounding circumstances, the Illinois EPA found that a public comment period was warranted before the permit was revised. Accordingly, the Illinois EPA prepared a draft of the revised permit. In response to the comments that were received on the draft permit, the revised permit that has now been issued differs from the draft permit in a number of respects, as has already been discussed.

29. USEPA developed a draft of guidance addressing the procedures for processing modifications of PSD permits, Revised Draft Policy on Permit Modifications and Extensions, USEPA, July 5, 1985 (Draft Guidance). Although this guidance was never finalized, it still provides direction on the appropriate procedures to be used for different categories of modifications to PSD permits. In this guidance, USEPA categorized proposed changes to PSD permits as administrative, minor, significant, or fundamental, based on the significance of the proposed changes and the extent of review that the permitting authority must conduct.[41] Of particular relevance for this action, is the guidance that is provided for proposed modifications to PSD permits that are categorized as administrative changes.[42, 43] In this regard, this guidance provided:

> Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emission or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decision originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or trading, must be carefully documented) and minor work clarifications. ...
>
> The lack of emissions and impact increases for amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to PSD permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in

[41]The categorization of proposed changes also considers whether the source or project is operating. USEPA explained that the guidance typically imposes a less rigorous process for changes at operating units because, among other factors, "a project in its earlier phases is much more flexible than one already operating."

[42]In the Draft Guidance, USEPA characterizes minor changes as entailing changes to applications or issued permits and a certain amount of additional review by the permitting authority, but not constituting either a fundamental or significant change. Emissions or impacts increase as a result of minor changes but not above the significance level.

Significant and fundamental changes were characterized as increasing emissions above significance levels and/or changing the basic nature of an emissions source.

Minor, significant, and fundamental changes to PSD permits are collectively described as revisions of PSD permits, as distinguished administrative amendments of PSD permits. For revisions of permits, unlike administrative amendments, the Draft Guidance would require public participation prior to issuance of any revised permit. Draft Guidance, page 15.

[43]In this case, these changes to Permit 95010001 would not constitute "revisions," as these changes do not address changes in the method of operation or result in a net significant emissions increase. Because the changes would not constitute revisions, a public comment period was not needed for these proposed changes to Permit 95010001.

> highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company are operated. See Draft Guidance, page 11.

Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The changes will not increase emissions and do not involve any fundamental changes at the source. Very little review and no reanalysis of the original PSD permit application was needed. The changes also would not adversely impact air quality or change regulatory requirements.

Based on the Draft Guidance, it was clearly reasonable and appropriate for the Illinois EPA to have provided for public participation on the proposed changes to Permit 95010001. This is because, as stated in the passage from the Draft Guidance cited by this comment, this guidance directs permitting authorities to provide for public participation on administrative amendments to PSD permits in instances where the proposed changes are sufficiently important to necessitate public participation.[44] Given both the nature of the proposed changes and the public interest in this source, the Illinois EPA reasonably found that this was the case.

The project is "important" as it relates to a significant improvement in control of particulate emissions in an area that is designated nonattainment for $PM_{2.5}$. This improvement will be the result of the Agreement between the Illinois EPA and US Steel While the overall objective in revising Permit 95010001 is simple, to accommodate this improvement, implementation has required consideration of a variety of changes to a number of conditions in the previous permit. The actual nature and reason for the various changes to affected conditions was not necessarily readily apparent or obvious.[45] This permitting action must also appropriately consider and be coordinated with the processing of the construction permit for the new baghouse control system and the CAAPP permit that has been issued for the Granite City Works. Because of this complexity, it was reasonable to provide a public comment period on this proposed action.

It is also unquestioned that the Granite City Works has historically been of interest to the public, as demonstrated by the interest in other recent permitting actions for this source.[46] This further supports the decision of the Illinois EPA to provide a public comment period on a draft of the planned revisions to Permit 95010001. Moreover, a public comment period is mandatory for the application for construction permit for the new baghouse control system,

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[44] As noted by this comment, the Draft Guidance provides that there may be instances "where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary." The example given for a case where public participation may be justified for an administrative amendment is a change in ownership of a "proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company were operated." Draft Guidance, page 11.

[45] The current changes to Permit 95010001 required the Illinois EPA to again, consider the requirements that were applicable to the BOFs in light of both the existing ESP and the new baghouse. In particular, the Illinois EPA had to evaluate the removal of operational requirements that had become outdated or would become infeasible with the new baghouse control system. The Illinois EPA's review also considered the removal of operational requirements for the BOFs that had been made obsolete by new regulatory requirements that now apply.

[46] Indeed, USEPA recently acted on a petition from the American Bottom Conservancy for USEPA review of the CAAPP permit for this source issued by the Illinois EPA. In its decision, *Order Granting in Part and Denying in Part Petition for Objection to Permit*, December 3, 2012, USEPA granted the petition in part and the Illinois EPA will in the future be appropriately responding to USEPA's Order.

Application 11050006.[47] Because the public comment period for processing the revision to Permit 95010001 was combined with the public comment period for Application 11050006, it should not significantly affect the overall timing for permitting of the new baghouse control system.

30. USEPA has issued administrative amendments to PSD permits without providing for public participation.[48]

The fact USEPA has made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the specific circumstances of this action. As already explained, the Illinois EPA's decision to hold a public comment period considered the entirety of circumstances for this requested permit revision.[49]

31. State and local permitting authorities have also approved administrative amendments to PSD permits.[50, 51]

The fact that state and local permitting authorities may have made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the particular circumstances in this case.[52]

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[47] **A public comment period is mandatory on the application for the construction permit for the new baghouse control system as part of the Integrated Processing of that application, whereby the construction permit that is issued would authorize certain changes to the CAAPP permit for the Granite City Works by administrative amendment.**

[48] For example, in 2008, Hovensa requested the removal of provisions for rolling averages from the CO emission limits for certain emission units in its PSD permit, since continuous emissions monitoring was not required, making rolling averages impractical. USEPA agreed with Hovensa, concluding that "there is no benefit in requiring compliance based on rolling averages." USEPA revised the PSD permit accordingly, further explaining ". . .these requested changes will not result in any increase in emissions or cause any adverse air quality impacts. Therefore, EPA is approving these revisions administratively." (Letter to K. Antoine, Environmental Director, Hovensa, LLC, from B. Finazzo, Director, Division of Environmental Planning and Protection, USEPA, Region II, October 13, 2008.)

[49] **Incidentally, the changes to the PSD permit for the Hovensa facility, which was cited in this comment, merely entailed the removal of provisions for 365-day rolling averaging from the CO limits for certain units at this facility. As such, the nature and effect of these changes is readily apparent. Without annual averaging, the stringency of the CO limits was, in fact, increased, with compliance with limits now required on a short-term basis, rather than on a long-term basis.**

[50] For example, a Nebraska facility obtained an administrative amendment to its PSD permit to extend compliance dates for new control equipment. In issuing this administrative amendment, the Nebraska Department of Environmental Quality (NDEQ) stated, "[t]he emissions and regulatory requirements for this facility will not change due to this modification." (Administrative Amendment to Prevention of Significant Deterioration Construction Permit for Abengoa Bioenergy Corporation, Nebraska Department of Environmental Quality, January 21, 2004.)

[51] In March 2012, in its Permit Evaluation and Statement of Basis for Minor Revision to the Major Facility Review Permit for Los Medanos Energy Center, LLC, Facility No. B1866, the Bay Area Air Quality Management District (BAAQMD) referenced USEPA's Draft Guidance, explaining that the change to the PSD permit for the Medanos Energy Center was considered administrative. In particular, on page 6 and 7 of this document, the BAAQMD stated, "The facility received an Authority to Construct and a PSD permit on 9/10/99. ... The changes to the changes in clearances in the compressor section, installation of the dry Low NOx combustors, and change out of the exhaust gas path components are considered an administrative change under the 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The scope of these changes will not increase permitted emissions of any PSD pollutants (e.g. NO_2, CO, PM_{10}, $PM_{2.5}$, VOC, Lead, Fluorides, Sulfuric Acid Mist, Hydrogen Sulfide, Total Reduced Sulfur) and will not require any changes to permit conditions established during the original PSD permitting action. PSD does not apply to this permitting action."

[52] **Incidentally, with respect to the permitting action by the NDEQ cited by this comment, the Illinois EPA could not find an "administrative amendment" issued to Abengoa Bioenergy on January 21, 2004 that extended certain compliance dates in**

32. In the Project Summary, Footnote 13, the Illinois EPA stated that the changes to Permit 95010001 are being processing separately from the processing of the baghouse construction permit in order to subject the changes to Permit 95010001 "to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124…." Although 40 CFR 124.1 indicates that Part 124 contains USEPA's "procedures for issuing, modifying, revoking and reissuing, or terminating all . . . PSD . . . 'permits' . . . ," Part 124 does not actually include procedures for revising PSD permits. In fact, 40 CFR 124.5(g)(1) is "Reserved for PSD Modification Provisions." Thus, Part 124 arguably does not apply to processing changes to PSD permits.

The observation made in this comment provides legal support for the administrative judgment that permitting authorities currently exercise in practice with respect to procedures that are used for processing revisions to PSD permits, including their reliance on USEPA's Draft Guidance. As USEPA has not codified the appropriate procedures for processing various types or classes of revisions to PSD permits, permitting authorities must exercise administrative judgment when selecting the appropriate procedure to use when processing a particular application for revisions to a PSD permit.

33. Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The requested changes result in no emissions increase at the source and no fundamental changes at the source. Very little review, if any, and no reanalysis of the original application, was necessary. The proposed changes in this case also would not increase emissions, adversely impact air quality or change any emissions or regulatory requirements. Accordingly, the proposed changes should have been made by administrative amendment.

As already discussed, the Illinois EPA does not disagree with the classification of the changes to Permit 95010001 as "administrative amendments" under the Draft Guidance. However, this guidance still directs permitting authorities to exercise discretion to provide for public participation for administrative amendments to PSD permits in instances where it may be warranted. More generally, irrespective of the Draft Guidance, the Illinois EPA had the authority and duty to appropriately consider whether public participation should be provided for the proposed changes to Permit 95010001. Given the circumstances of the proposed changes to this permit, including the nature of the changes and the public's previous interest in this source, the Illinois EPA reasonably elected to provide for public participation on a draft of the revised permit.

FOR ADDITIONAL INFORMATION

Questions about the permit decision should be directed to:

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an issued PSD permit. Rather, the Illinois EPA found a permit issued on this date to Abengoa Bioenergy for modifications to this source, for which the draft permit had been subject to public participation. (Prevention of Significant Deterioration (PSD) Construction Permit for Abengoa Bioenergy Corporation, NDEQ, January 21, 2004.)

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ATTACHMENT 1:

LISTING OF SIGNIFICANT CHANGES BETWEEN THE DRAFT PERMIT AND THE ISSUED PERMIT

Findings

Finding 1(a)*(revised)*: The scope of this finding, which generally describes the nature of revisions that have been made in the revised permit, has been reduced. In the issued permit, like the draft permit, this finding explains that the permit has been revised to remove requirements that would be inconsistent with the use of a separate control system for secondary emissions of the BOFs, as is planned. In the issued permit, this finding no longer mentions revision because of inconsistency with requirements of the Iron and Steel NESHAP. It also does not mention inconsistency with requirements in the Clean Air Act Permit Program (CAAPP) permit for the source. This change responds to a comment that the Illinois EPA, in the Project Summary, improperly indicated that certain operational and monitoring requirements need not be included in the revised PSD permit because of requirements that now exist in the Iron and Steel NESHAP and in the CAAPP permit for the source. As observed by this comment, the relationship between the revised permit, the Iron and Steel NESHAP, and the CAAPP permit is not as simple as would have been indicated by this finding in the draft permit. In particular, as the revised permit would rely on provisions of the Iron and Steel NESHAP, this should be and is now explicitly provided for by the revised permit. Accordingly, in the issued permit, this finding only generally explains that revisions have been made in the revised permit to address the new control system planned for the BOFs.

Finding 3(c)*(new)*[53]: This new finding provides that the revised permit will not become effective when it is issued. Rather, the effectiveness of the revised permit will be appropriately delayed to address the possibility that a petition for review of this permit is submitted to the USEPA's Environmental Appeals Board (Board), appealing the revised permit. In addition, if the revised permit is appealed, the revised permit would not become effective until either the Board declines the petition for review or it makes a decision on the merits that does not remand the permit back to the Illinois EPA. These provisions are consistent with the relevant provisions of 40 CFR Part 124 that deal with issuance of PSD permits.[54] This change to the permit resulted from further evaluation in response to comments concerning the administrative process being used for the revision of this permit. These comments, which are addressed in the body of this Responsiveness Summary, argued that the Illinois EPA could have issued this revised permit without holding a public comment period. While considering those comments, the Illinois EPA realized that the draft of the revised permit would not include provisions to accommodate an appeal of the issued permit in accordance with 40 CFR Part 124. The revised permit should accommodate such an appeal because the Illinois EPA has processed the revision of this permit as a revision to a PSD permit. Accordingly, new Finding 3(c) has been included in the revised permit to enable an appeal of the permit in a manner that is consistent with the provisions of 40 CFR Part 124.[55]

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[53]In the issued permit, a cross-reference to this new finding is now provided after the "Date Revision Issued" in the information block at the top of the permit.

[54]The USEPA's Environmental Appeals Board hears appeals of PSD permit actions taken by USEPA and by other delegated permitting authorities. The USEPA's administrative rules for these appeal proceedings are found in 40 CFR Part 124, Procedures for Decisionmaking.

[55]It should be noted that new Finding 1(c) does not indicate that the Illinois EPA has determined that the issuance of this revised permit is a PSD permit action. Rather, it reflects a belief that it is appropriate to proceed as if the changes that have been made to this permit entail issuance of a revised PSD permit. Among other things, this is because of the form of the original permit, the extent of the changes that have been made to the permit, and US Steel's expressed desire for certainty in the authoritativeness of the revised permit. However, this does not mean that the Board, in response to a petition for review of the revised permit, could not conclude that the issuance of this revised permit was

Conditions

Condition 8*(revised)*: Wording in this condition, which restates the applicable state standard for opacity of emissions from the roof monitor of a BOF shop, 35 IAC 212.446(c), has been corrected. In the issued permit, this condition addresses a standard that applies to the "opacity of emissions" rather than to "visible emissions." It is evident that this condition addresses opacity as the limit is expressed as a percentage.[56] The change is a result of a comment, which is addressed in the body of this Responsiveness Summary, that expressed concern about the addition of a regulatory citation to this condition. As part of the further consideration that occurred, it was decided that this simple correction should be made to the wording of Condition 8.[57]

Condition 9/ Former Conditions 9 and 10 *(revised)*[58]: Condition 9 now requires US Steel to operate and maintain the BOFs and associated capture and control systems in accordance with applicable requirements of the Iron and Steel NESHAP. This change was made in response to a comment that the removal of previous Conditions 9 and 10, as proposed in the draft of the revised permit would act to eliminate independent enforceability of the permit. To maintain such enforceability, this comment further suggested that, as the revised permit would rely on provisions of the Iron and Steel NESHAP in place of the provisions that would be removed, the revised permit should require compliance with applicable provisions of this NESHAP. This would make the requirements of the Iron and Steel NESHAP that would now take the place of Conditions 9 and 10 actually enforceable under the permit. As the change suggested by this comment would merely memorialize the basis for removal of former Conditions 9 and 10 from the permit and enhance the practical enforceability of the substantive requirements in the permit, the Illinois EPA has proceeded as requested by this comment.

In the issued permit, Condition 9 clarifies the relationship between the revised permit and the Iron and Steel NESHAP. Since provisions of this NESHAP will serve in place of the compliance procedures in former Conditions 9 and 10 of the permit, Condition 9 in the issued permit addresses operational and maintenance requirements for the BOFs and associated capture and control systems. It specifically requires US Steel to comply with applicable provisions of this NESHAP for operational monitoring, performance testing, operating parameter limits, and operation and maintenance of equipment. With regard to performance testing, Condition 9 also further provides that unless US Steel is willing to consider all particulate measured by NESHAP testing to be PM-10, tests must also be conducted for emissions of PM-10. This additional requirement was needed because this NESHAP does not require performance testing for PM-10 emissions, since it sets particulate limits in term of PM. This further provision will require testing to also be conducted for PM-10 emissions if US Steel elects to consider the distinction between PM and PM-10 when determining compliance with Condition 8 (35 IAC 212.458(b)(23)), which sets limits for particulate emissions in terms of filterable PM-10.

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not a PSD permit action. Notably, emissions of particulate, which are addressed through the provisions of the permit that have been revised, were not originally subject to PSD review.

[56]Standards for visible emissions do not set limits for the percentage of visible emissions. Such standards may simply prohibit such emissions. They may also restrict the amount of time during which such emissions occur. For example, visible emissions from flares are commonly restricted to a total of 5 minutes in any two-hour period.

[57]In addition, other changes have been made between the draft and issued revised permit that involve conditions that the draft permit would not have retained. As these other conditions will now be "temporarily" retained in the permit until the new control system starts operation, as will be discussed later, it was necessary to make corrections to the wording and structure of those conditions. As these changes have now been made to those other conditions, it was also appropriate that Condition 8 be changed so that it now refers to opacity of emissions.

[58]The parenthetical notes in the issued permit, which identify provisions of the previous permit that are not in the revised permit, have also been appropriately adjusted to address this change. In the revised permit, these notes no longer indicate that Condition 9, Conditions 11, 12 and 13 and Condition 39 have been removed from the permit.

In the issued permit, Condition 9 is also accompanied by a note that explains that compliance with the operational and maintenance requirements of the Iron and Steel NESHAP has been required as the means to verify ongoing compliance with the requirements of Conditions 7 and 8 of the permit and to address implementation of good air pollution control practice for the BOFs. This note is appropriate to clearly document the role of Condition 9 in the revised permit. In the absence of this explanation, one might improperly assume that the purpose of Condition 9 in the revised permit is merely to facilitate ongoing compliance with the Iron and Steel NESHAP.

Condition 11*(revised)*: In the issued permit, this condition, which deals with use of flame suppression to minimize emissions from tapping of the BOFs, has been revised rather than being removed, as was proposed. Condition 11 in the issued permit now requires that flame suppression be used until the new baghouse control system begins operation. The original Condition 11, which requires use of flame suppression, has been retained as Condition 11(a). New Condition 11(b) now provides that this requirement for flame suppression will terminate when US Steel begins operation of a capture and control system for secondary emissions from the BOFs, as now planned, which makes flame suppression infeasible or unnecessary. This change was made in response to a comment suggesting that the revised permit should retain requirements that would be applicable until the new baghouse control system begins operation, rather than simply relying on the presence of these requirements in the CAAPP permit for the source to maintain their continued effectiveness until they actually cease to apply. As the approach suggested by this comment would maintain the enforceability of the subject requirements under the PSD permit, where they originated, the Illinois EPA has proceeded as requested by this comment.

Because this comment also addressed other requirements that would only continue in effect until the new baghouse control system begins operation, new Condition 11(b) also addresses the effectiveness of those other requirements. In particular, Condition 11(b) also provides that the operational requirements and associated monitoring requirements that have now been retained in the permit as Conditions 12 and 13 would also terminate upon startup of a new control system for secondary emissions.

Conditions 12 and 13 *(revised)*: In the issued permit, these conditions, which deal with operational requirements for BOFs and associated monitoring requirements, have been revised rather than being removed, as was proposed. This change was also made in response to the comment that suggested that the revised permit should retain requirements that would be applicable until the new control system begins operation, rather than relying on the source's CAAPP permit to maintain the effectiveness of requirements until such time. As the suggested approach would maintain the enforceability of the subject requirements under the PSD permit, the Illinois EPA has proceeded as requested by this comment.

Since the revised permit now explicitly requires compliance with existing operational and monitoring requirements until the new baghouse control system begins operation, these requirements had to be appropriately carried over in the revised permit with editorial and technical corrections and updates to these requirements. First, the organization and order of requirements in the issued permit have been revised for clarity. The operational requirements have been kept in Condition 12.[59] All monitoring requirements are now in Condition 13.[60] Second, the wording of both Conditions 12 and 13 has been simplified to improve

[59]In Condition 12 in the revised permit, the first requirement (Condition 12(a)), is now the general requirement to operate the BOFs with the stack gas flow rate of the ESP at certain minimum levels. Condition 12(b) now addresses the values of minimum set points while only a single furnace is in operation. Condition 12(c) now addresses the operational requirements when both BOFs are operating.

[60]In Condition 13, the first requirement (Condition 13(a)), is that US Steel operate and maintain a continuous operational monitoring system for the gas flow rate in the stack for the ESP, with recordkeeping for the monitored flow rates for each steel production cycle for the different phases of BOF operation (former Conditions 12(c) and 12(e)). Condition 13(b) now addresses operational monitoring for waste gas suction in the main downcomer duct of

clarity and facilitate practical enforceability.[61, 62] Lastly, the contents of Condition 13 have been revised to reflect developments in permit requirements for operational monitoring systems, with similar requirements now set for both systems.[63] These revisions were needed because requirements for these monitoring systems have now been included in the revised permit and the permit should now reflect current practice in permitting for establishing requirements for operational monitoring systems, with similar requirements for both systems.

Explanatory note following Condition 18 *(new)*: This new note explains that the previous note that followed Condition 18 has not been included in the revised permit. This change was made in response to a comment requesting this change. The parenthetical explanatory notes in the revised permit generally explain where conditions have been removed as part of the revision of the permit to avoid possible future confusion. They enable someone who is referring to the revised permit to understand that the gaps in the numbering of conditions in the permit is intentional. The change requested by this comment could also serve to avoid possible future confusion. It would make clear that the previous note, which provided a definition of a "BOF cycle," was also intentionally removed in the revised permit.[64] Accordingly, the change requested by this comment was made.

Condition 39 *(revised)*: In the issued permit, this condition, which deals with reporting of deviations, has been revised rather than being removed, as was proposed. This change was made in response to a comment

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the ESP, again requiring recordkeeping for each production cycle for the different phases of operation (former Conditions 13(a) and 13(d)). Condition 13(c) now provides for quarterly calibration of both the monitoring system for waste gas suction, as well as the monitoring system for stack gas flow rate (former Condition 13(f)). Condition 13(d) now contains the general obligations for these monitoring systems, addressing both the monitoring system for stack gas flow rate, as well as the system for waste gas suction (former Condition 13(b)).

[61]For example, in revised Condition 12, the wording of Condition 12(a) (former Condition 12(c)), now clearly provides that the ESP does not need to be operated at the established set points for purposes of emissions testing. While allowing for alternative set points to be approved, the wording of the former condition improperly suggested that testing to evaluate alternative set points would have to be conducted while operating at the established set points. If applied literally, this would have meant that testing to evaluate alternative set points could not actually be conducted, since the ESP would have to be operated at the established set points during such testing.

Condition 12(c) (former Condition 12(b)) also imposes requirements related to overlapping of charging and tapping when both BOFs are in use. The revised condition now provides that all four of these requirements must be part of US Steel's Operating Procedures for the BOFs. As there are four distinct requirements, the Operating Procedures for the BOFs must include them all, rather than only two of them, as was formerly specified.

[62]In Condition 13 of the revised permit, various flaws in the wording of the requirements for monitoring in the former permit have been eliminated. For example, the basic provision for monitoring of ESP stack gas flow rate in the revised permit, Condition 13(a), now explicitly requires US Steel to conduct continuous operational monitoring for this parameter. The previous condition (former Condition 12(d)), did not directly require such monitoring. Instead, it required US Steel to calibrate, operate and maintain a continuous strip chart recorder for this parameter "as measured by the stack gas flow meter during ESP use." As such, the former condition permit did not directly address operation of a continuous monitoring system for ESP stack gas flow rate. In addition, this condition did not actually require "monitoring" whenever the BOFs were being operated, only when the ESP was being operated.

[63]In the issued permit, identical requirements are set for both the continuous monitoring system for stack flow rate and the continuous monitoring system for waste gas suction. Both systems must be operated, maintained and calibrated by US Steel. The data that is recorded for both systems must include data for each steel production cycle for each phase of operation (charging, refining and tapping). Both systems must be calibrated on at least a quarterly basis. Finally, both systems must be operated at all times that a BOF is in operation and shall be used as mechanisms to ensure that adequate draft is maintained.

[64]The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle in the permit since it is inconsistent with the related definition for steel production cycle adopted by USEPA in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production cycle as the operations conducted at a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

that the removal of Conditions 9 and 10, as was proposed in the draft of the revised permit, would act to eliminate independent enforceability of the permit. Changes were made in the revised permit to directly respond to this comment, as have been discussed. Changes with respect to Condition 39 were also appropriate in responsed to this comment. In particular, Condition 39 is now retained so that the revised permit independently addresses reporting of deviations from permit requirements and does not rely solely on the parallel provisions of the CAAPP permit for reporting of any deviations from the requirements of the permit. As Condition 39 is now retained in the revised permit, necessary technical and editorial corrections have been to this condition.[65]

[65] In the revised permit, Condition 39 requires reporting of "deviations" rather than "exceedances," with such reporting required even if the deviations have been determined or identified by US Steel by a means other than the records required by the permit. As deviations are now addressed, which may include matters other than emissions exceedances, information is not required for the amount of emissions released. If a deviation involves excess emissions, information on the amount or nature of excess emissions would typically be included as part of the required description of the deviations. Finally, as reporting of deviations is also now addressed in the CAAPP permit for the source, the condition recognizes that the CAAPP permit may specify other requirements for reporting of deviations.

Kras, Kim

From: Frost, Brad
Sent: Tuesday, May 21, 2013 9:07 AM
To: Kras, Kim
Cc: Carter, Sally
Subject: FW:
Attachments: US Steel PSD Revision Responsiveness Summary Letter.docx

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
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brad.frost@illinois.gov

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

From: Frost, Brad
Sent: Monday, December 17, 2012 2:13 PM
To: Romaine, Chris; Carter, Sally
Subject:

Revised letter

Brad Frost
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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/782-7027
217/782-9143 TDD

December 17, 2012

Name
Address
City, Illinois Zip

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Name,

Thank you for your participation during the comment period for revisions to Construction Permit/Prevention of Significant (PSD) Approval 95010001 to accommodate an emission reduction project for the basic oxygen furnace at U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit 95010001. During this public comment period, the Illinois EPA also solicited comments on the actual emission reduction project that is the subject of a separate application for a construction permit, Application 11050006, and necessary revisions to the current Clean Air Act Permit Program (CAAPP) permit for the Granite City Works, Permit 96030056. A final decision on the construction permit for the emission reduction project and required revisions to the CAAPP permit have not been made. You will be notified separately when that decision is made.

The Illinois EPA has prepared a Responsiveness Summary addressing comments and questions raised during the public comment period. Copies of the final permit decision and Responsiveness Summary for revisions to Permit 95010001can be obtained by the following means:

1. From the Illinois EPA's website:

   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

   Illinois EPA
   Bradley Frost, Office of Community Relations
   888/372-1996 Toll Free – Environmental Helpline
   217/782-7027 – Desk Line
   217/782-9143 – TDD
   217/524-5023 – Facsimile
   brad.frost@illinois.gov

To obtain a printed copy of the documents free of charge, please contact the Illinois EPA through the contact information listed in #3 above.

When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's procedures for Decision Making, 40 CFR 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the US Environmental Protection Agency (USEPA) to review the issued permit. In addition, any person who failed to file comments or failed to participate in the public hearing on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision.

As comments were submitted on the draft PSD permit for the proposed source that requested a change in the draft permit, the issued PSD permit does not become effective until after the period for filing an appeal has passed. This letter is the service of notice that a final permit decision has been made. The federal procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA for the revised PSD permit by a means other than regular mail, refer to the USEPA's Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

Kras, Kim

From: Romaine, Chris
Sent: Monday, December 17, 2012 1:24 PM
To: Jouett, Pam; Scott, Jim
Subject: US Steel Production Permit Increase Revision construction only "draft final" 12-17.doc
Attachments: US Steel Production Permit Increase Revision construction only final 12-17.doc

Draft of a revised permit, which I hope to issue today, for formatting, etc..

119813AAI 95010001

By the way, when it is finalized, the previous version of the permit should be saved. This is because this new version will not take effect immediately.

Thanks

217/782-2113

CONSTRUCTION PERMIT/PSD APPROVAL
REVISED

PERMITTEE

U.S. Steel Granite City
Attn: Bryan Kresak, Environmental Director
Route 203 and 20th Street
Granite City, Illinois 62040

Application/Permit No.: 95010001 I.D. No.: 119813AAI
Applicant's Designation: Date Orig. Issued: January 25, 1996
Subject: Production Increase
Date Revision Request: May 30, 2012
Date Revision Issued: December 17, 2012 (See Finding 1(c))
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in the allowable production rate of iron (from 2,372,500 to 3,165,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year) as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

FINDINGS

1a. Various changes have been made to the provisions of this permit for the Basic Oxygen Furnaces (BOF's), at the request of the Permittee, so that the permit will accommodate an emission reduction project that is planned for particulate emissions from the BOFs. In particular, the revised permit does not include requirements for the operation of these BOF's and the existing electrostatic precipitator (ESP) control system that would be inconsistent with the use of a separate control system with a baghouse for secondary emissions of the BOFs, as is now planned (see Construction Permit Application 11050006).

b. Prior to issuance of this revised permit, a draft of the revised permit underwent a public comment period, including a public hearing.

c. This revised permit will become effective 33 days after the date of issuance unless a petition for review is filed, in accordance with 40 CFR Part 124, with the USEPA's Environmental Appeals Board (Board), in which case, this revised permit will only take effect when and if the Board declines the petition for review or the Board issues a decision on the merits of the appeal that does not include a remand of the proceeding.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOF's) shall not exceed 11,000 net tons per day, averaged over any calendar month; and

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(23).

8. Opacity of emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis, pursuant to 35 IAC 212.446(c).

9. The Permittee shall operate and maintain the BOF's and associated capture and control systems in accordance with applicable requirements of the National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, including requirements for operational monitoring, performance testing for opacity and emissions of particulate matter,* operation of capture and control systems within established limits for operating parameters, implementation of specified operation and maintenance practices, recordkeeping and reporting.

* As related to testing of emissions, if the Permittee is not willing to consider all particulate matter measured by testing to be PM-10, as provided for by 35 IAC 212.108(a)(3), performance tests for emissions of particulate

matter shall also include measurements for emissions of PM-10 in accordance with 35 IAC 212.108(a)(1) or (2).

Note: This condition requires the Permittee to comply with the operating and maintenance requirements of 40 CFR 63 Subpart FFFFF as the means to verify ongoing compliance with the requirements of Conditions 7 and 8 and to address implementation of good air pollution control practice for the BOF's.

(Former Condition 10 has been removed in this revised permit.)

11a. Flame suppression shall be used and maintained during the entire tapping process.

b. The above requirement for flame suppression and the various requirements for the BOF's in Condition 12 and 13 shall end after the Permittee begins operation of a capture and control system for secondary emissions from the BOF's that makes these requirements infeasible or unnecessary, as explicitly recognized by Construction Permit 11050006 or other construction permit issued by the Illinois EPA for a capture and control system for secondary emissions.

12a. Except for purposes of emissions testing as related to the set points for the capture system for the BOF's, this capture system shall be operated at the following minimum set points for gas flow rate in the ESP stack until and unless the Illinois EPA approves lower minimum set point(s) based on a demonstration that a better level of particulate matter capture efficiency would now be achieved by the charging hoods and primary hoods.

b. Set points requirements while only a single BOF vessel is in operation:

i. Minimum set point during charging process: 550,000 cfm.

ii. Minimum set point during refining process: 650,000 cfm.

iii. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition).

c. i. During dual operation of BOF vessels (a.k.a., overlapping BOF operation), the minimum set point shall be 700,000 cfm.

ii. In addition, overlapping operation of the BOF vessels is subject to the following requirements. These requirements shall be part of the Standard Operating Procedure for the BOFs.

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. Sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

13a. i. The Permittee shall operate, maintain and calibrate a continuous operational monitor to ESP stack gas flow rate.

ii. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

b. i. The Permittee shall operate and maintain a continuous operational monitor for waste gas suction, i.e., the static pressure in the main downcomer duct of the ESP.

ii. The Permittee shall record the waste gas suction for each process (i.e., for each charge, each refine, each tap) of each steel production cycle.

c. These monitoring systems shall be calibrated on at least a quarterly basis.

d. These monitoring systems shall be operated at all times that a BOF is in operation and shall be used as mechanisms to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts.

(Former Conditions 14 through 17 have been removed in this revised permit.)

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

(The note that previously accompanied Condition 18 has been removed in this revised permit.)

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

    a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year;

    b. Blast Furnace Gas (BFG) usage: 30,800 million ft^3 per month and 185,030 million ft^3 per year;

    c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

    b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

        i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

        ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

        iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

        iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

        v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the

Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

a. The date (and time for the gate areas) each road or area was treated;

b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in

the most recent production schedule provided to the Agency that shows compliance with the following requirements.

B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in conditions 2(b) and 6(b).

C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

(Former Condition 33 has been removed from this revised permit.)

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{mmft}^3 \text{ BFG per month} = \frac{(4.585277 \text{ NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month.} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft³ per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source as of January 15, 1996 and supersede such conditions in cases where a conflict exists.

38a. The following tests shall be performed by no later than August 6, 1997 to demonstrate compliance with the conditions of this permit.

i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Agency for review and approval. This plan shall describe the specific procedures for testing, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate
- determined emission factor
- compliance demonstrated - Yes/No
- any other pertinent information

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

(Condition 38 required emission testing following the initial operation of the source with the expansion that has already been conducted by the Permittee. This revised permit does not require that this testing be repeated.)

REPORTING

39. Unless otherwise provided for by the provisions for reporting of deviations in the Clean Air Act Permit Program (CAAPP) permit for the source, if there is a deviation from the requirements of this permit, the Permittee shall submit a report to the Illinois EPA within 30 days after the deviation. The report shall include a description of the deviation, the probable cause of the deviation, the corrective actions that were taken and any preventative measures taken to prevent similar deviations in the future.

40. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Iron and steel production (tons/month and tons/yr, each);

b. Natural gas and BFG usage ($mmft^3$/month and $mmft^3$/yr, each);

c. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF MAJOR SOURCE RULES

41a. As a consequence of the above conditions, this permit is issued based upon the following changes in emissions, as further described in Table 6, accompanying increased production as allowed by this permit:

i. The increases in emissions of lead and VOM are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration;

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	- 52.0	238.8	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Explanatory Note:

PM	=	particulate matter = particulate;
PM-10	=	particulate matter less than or equal to 10 micrometers in size;
SO_2	=	sulfur dioxide;
NO_x	=	nitrogen oxides;
VOM	=	volatile organic material;
CO	=	carbon monoxide;
mm	=	million;
gr/dscf	=	grains per dry standard cubic foot;
acfm	=	actual cubic feet per minute;
mmcf	=	million cubic feet;
Mgal	=	thousands of gallons.

If you have any questions on this permit, please call Kevin Smith at 217/782-7048.

Edwin C. Bakowski, P.E. Date Signed:_____
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:kls

cc: IEPA, FOS Region 3

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping) - captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO_2	0.2006	422.0
NO_x	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.031	49.06
PM-10	0.0155	24.53
SO_2	0.0104	21.94
NO_x	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO_2	0.0100	15.83

TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.02548	40.32
PM-10	0.02548	40.32
SO_2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00279	6.01
PM-10	0.00279	6.01

TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.16	262.80
PM-10	0.16	262.80
NO_x	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.1934 lbs/hr	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0987	176.71
PM-10	0.06614	118.40
Lead	0.0129 lbs/hr	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.03721	58.88
PM-10	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09 tons/yr

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00032	0.57
PM-10	0.00032	0.57

TABLE 2 (cont.)

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0016	2.86
PM-10	0.0016	2.86

6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0050	7.94
PM-10	0.0050	7.94

TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Throughput = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00715	12.80
PM-10	0.00715	12.80

2. Deslagging Station and Material HS.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00355	6.35
PM-10	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.006	10.74
PM-10	0.006	10.74
NO_x	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00852	15.25
PM-10	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0071	12.71
PM-10	0.0071	12.71

TABLE 3 (cont.)

6. Slab Ripping

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00722	12.92
PM-10	0.00722	12.92

TABLE 4

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage ($mmft^3/Yr$)
NATURAL Gas (Total)	1,346
BFG	185,030
Fuel Oil	365 thousand gallons/yr

1. Natural Gas

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	5.1	3.43
PM-10	5.1	3.43
SO_2	0.6	0.40
NO_x	306	205.94
VOM	2.8	1.88
CO	40	26.92

2. BFG

Pollutant	Emission Factor (Lbs/mmcf)	Maximum Emissions (Tons/Yr)
PM	2.9	268.29
PM-10	2.9	268.29
SO_2	6.65	615.22
NO_x	5.28	488.48
CO	13.7	1,267.46

TABLE 4 (cont.)

3. Fuel Oil

Pollutant	Emission Factor (Lbs/Mgal)	Maximum Emissions (Tons/Yr)
PM	9.72	1.77
PM-10	9.72	1.77
SO_2	141.3	25.79
NO_x	55	10.04
VOM	0.28	0.05
CO	5.0	0.91
Lead	0.336	0.06 (waste oil)

TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

Units = tons/year

	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
Blast Furnace Operations	218	194	474	24	157	--	--
BOF Shop	510	451	--	70	12	16,097	1.43
Continuous Casting Operations	71	71	--	90	--	--	--
Certain Fuel Combustion Units[A]	274	274	641	706	2	1,295	0.06
Roadways	27	27	--	--	--	--	--
Material Handling	2	2	--	--	--	--	--
	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
TOTAL	1,102	1,019	1,115	890	171	17,392	1.49

[A] Blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	-52.0	238.8	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

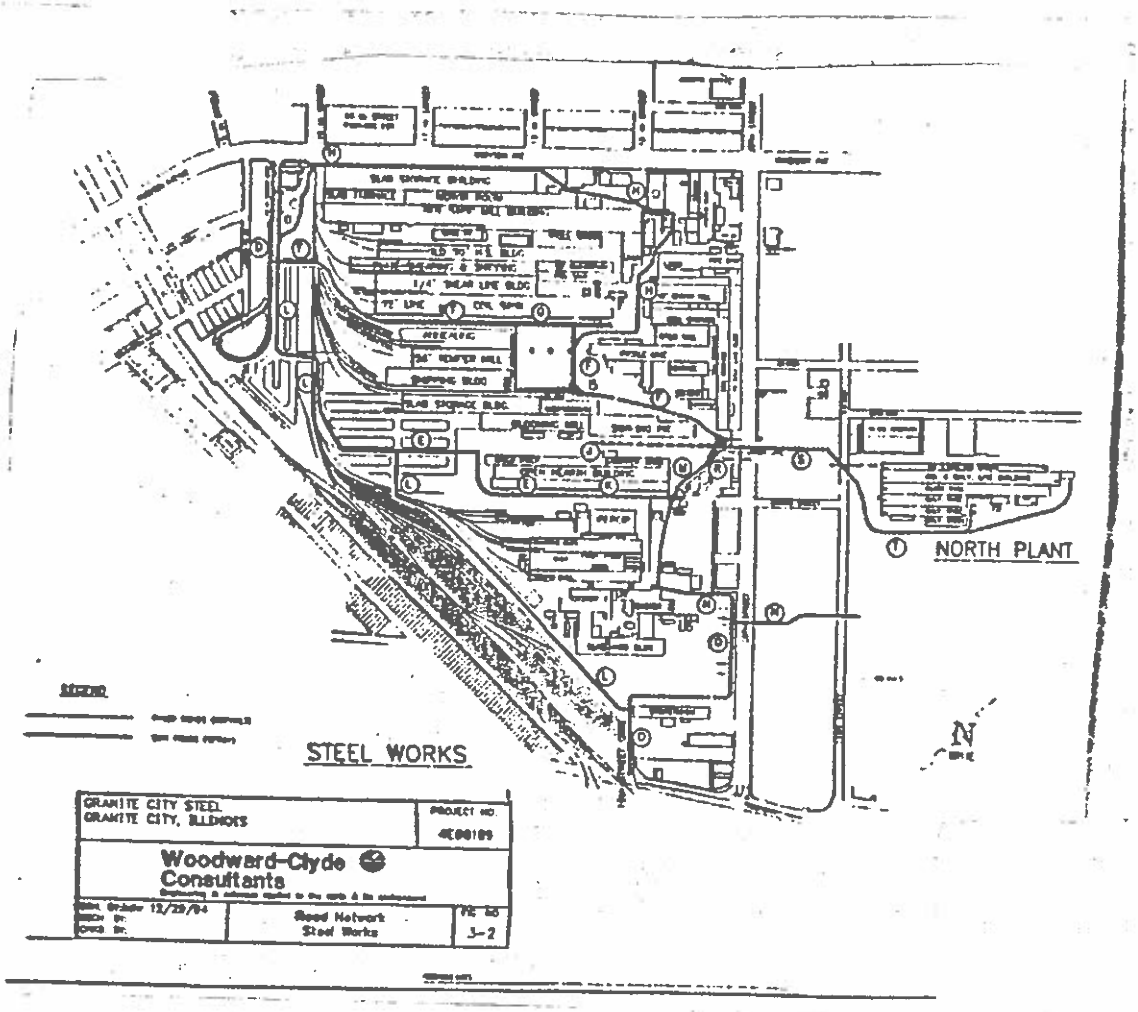
PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

ATTACHMENT A

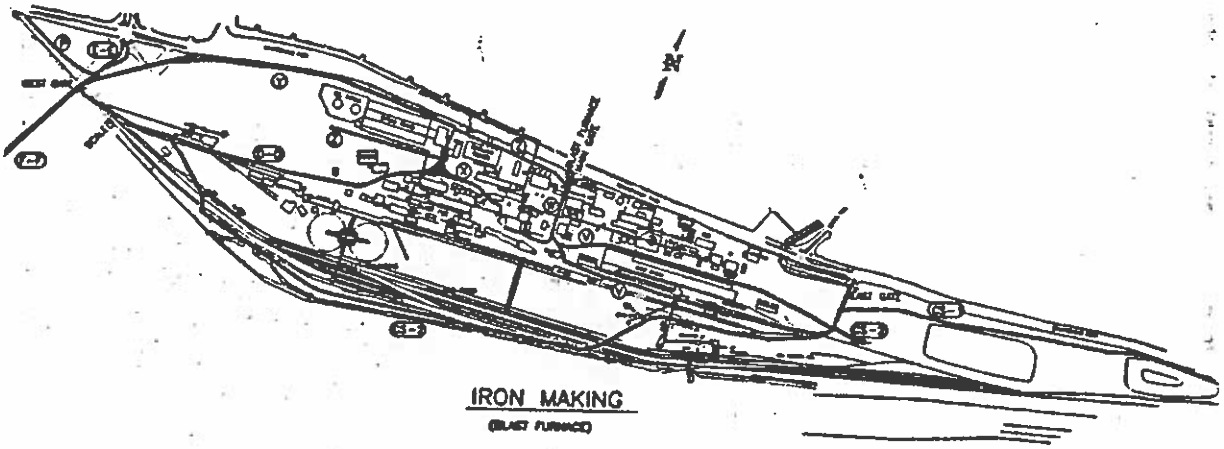
(Former Attachment A has been removed in this revised permit.)

ATTACHMENT B

ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND
MAPS SHOWING THE ROAD SEGMENTS



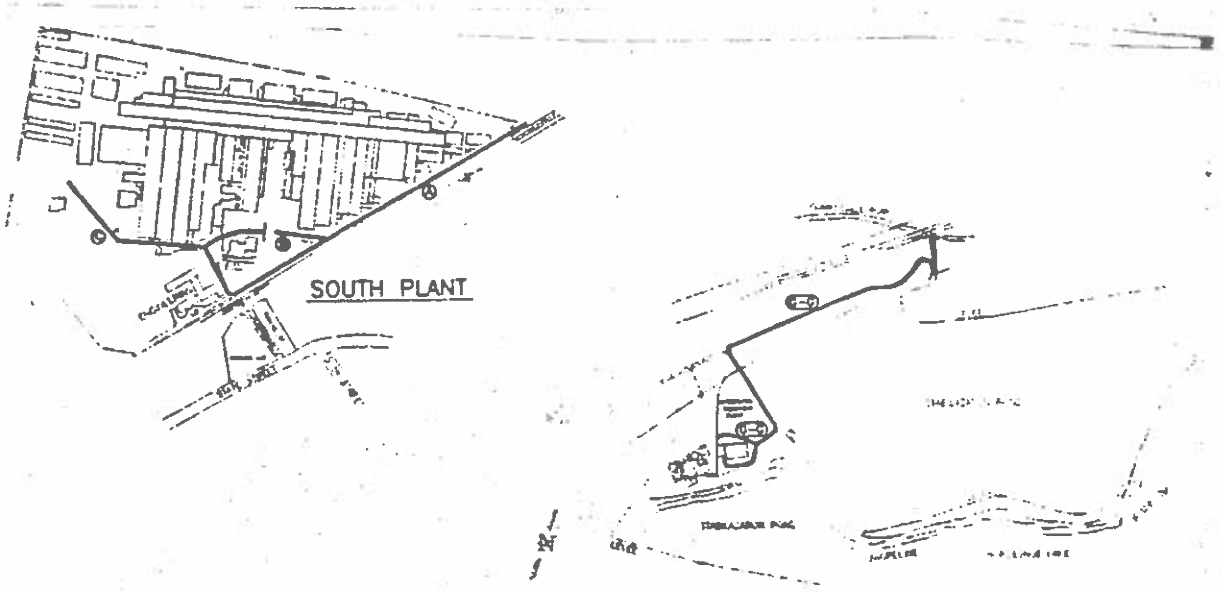
ATTACHMENT B (cont.)



LEGEND

GRANITE CITY STEEL GRANITE CITY, ILLINOIS	PROJECT NO. 4E98189
Woodward-Clyde Consultants	
Road Network Iron Making Area	FIG. NO. 3-3

ATTACHMENT B (cont.)



GRANITE CITY STEEL GRANITE CITY, ILLINOIS	PROJECT NO. 4E88189
Woodward-Clyde Consultants	
Date: 12/29/94 Drawn By: Check By:	Road Network South Plant & WWTP
	FIG. NO. 3-4

ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE
EMISSIONS OF PM-10

- Historic roadway emissions of 428 tons/yr, minus future potential roadway emissions of 27 tons/yr, equals a resulting reduction in roadway emissions of 401 tons/yr

- Historic material handling emissions of 17 tons/yr minus future potential material handling emissions of 2 tons/yr, equals a resulting reduction in material handling emissions of 15 tons/yr.

- Emission reductions resulting from the sweeping of city streets = 52 tons/yr*

- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/yr*

Total reductions in the emissions of PM-10 as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 480 tons/yr

* These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

KLS:jar

Kras, Kim

From: Frost, Brad
Sent: Tuesday, May 21, 2013 9:07 AM
To: Kras, Kim
Cc: Carter, Sally
Subject: FW:
Attachments: US Steel PSD Revision Responsiveness Summary Letter.docx

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
217/524-5023 fax
brad.frost@illinois.gov

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

From: Frost, Brad
Sent: Monday, December 17, 2012 10:00 AM
To: Carter, Sally
Subject:

I cannot find the hearing/comment list so tomorrow is probably a better day. However, I am having Dean bring the file up and if there are few enough attendees/comments, I will do the list myself instead of waiting tomorrow for Linda.

Attached is the letter for your review.

Brad

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
217/524-5023 fax
brad.frost@illinois.gov

217/782-7027
217/782-9143 TDD

Date

Name
Address
City, Illinois Zip

Notice of Final Permit Decision: U. S. Steel Corporation PSD Revision (Permit #95010001)

Dear Name,

Thank you for your participation during the comment period concerning the construction permit (Permit #11050006) for an emission reduction project, the PSD permit revision (Permit #95010001), and a proposed administrative amendment to the Title V permit for U. S. Steel Corporation's Granite City Works. The Illinois EPA has made a final decision to issue the revision to PSD permit #95010001. A final decision on the permit for the emission reduction project has not been made. You will be notified separately when that decision is made.

The Illinois EPA has prepared a Responsiveness Summary addressing comments and questions raised during the public comment period. Copies of the final permit decision and Responsiveness Summary can be obtained by the following means:

1. From the Illinois EPA's website:

   http://www.epa.state.il.us/public-notices/general-notices.html

2 By viewing documents at one of the following repositories:

Illinois EPA 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave. E., Springfield, IL 62794 217/782-7027	Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/346-5120

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

   Illinois EPA
   Bradley Frost, Office of Community Relations
   888/372-1996 Toll Free – Environmental Helpline
   217/782-7027 – Desk Line
   217/782-9143 – TDD
   217/524-5023 – Facsimile
   brad.frost@illinois.gov

To obtain a printed copy of the documents free of charge, please contact the Illinois EPA through the contact information listed in #3 above.

The permit being issued grants approval to construct pursuant to the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21. Accordingly, individuals who filed comments on the draft permit or participated in the public hearing may petition the U.S. Environmental Protection Agency (USEPA) to review the PSD provisions of the issued permit. In addition, any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review but only to the extent changes were made to the draft permit by the final permit decision.

As comments were submitted on the draft permit for the proposed source that requested a change in the draft permit, the issued permit does not become effective until after the period for filing of an appeal has passed. This letter is the service of notice that a final permit decision has been made. The procedures governing appeals of PSD permits are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA by a means other than regular mail, refer to the Environmental Appeals Board website at http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf (look under the link "Frequently Asked Questions" for instructions). If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001
Telephone: 202/233-0122

If you have any questions about the permit, please call me at 217/782-7027.

Sincerely,

Bradley Frost
Office of Community Relations

Kras, Kim

From: Carter, Sally
Sent: Tuesday, December 04, 2012 12:59 PM
To: Romaine, Chris
Subject: RE: Current (final?) version of revised US Steel Production Increase PSD Permit

okay

From: Romaine, Chris
Sent: Tuesday, December 04, 2012 12:55 PM
To: Carter, Sally
Subject: RE: Current (final?) version of revised US Steel Production Increase PSD Permit

No.

Effectively, nothing has changed.

From: Carter, Sally
Sent: Monday, December 03, 2012 3:29 PM
To: Romaine, Chris
Subject: RE: Current (final?) version of revised US Steel Production Increase PSD Permit

Have you run this by Benbenek?

From: Romaine, Chris
Sent: Sunday, December 02, 2012 11:55 PM
To: Carter, Sally
Subject: Current (final?) version of revised US Steel Production Increase PSD Permit

FYI

Kras, Kim

From: Romaine, Chris
Sent: Tuesday, December 04, 2012 12:55 PM
To: Carter, Sally
Subject: RE: Current (final?) version of revised US Steel Production Increase PSD Permit

No.

Effectively, nothing has changed.

From: Carter, Sally
Sent: Monday, December 03, 2012 3:29 PM
To: Romaine, Chris
Subject: RE: Current (final?) version of revised US Steel Production Increase PSD Permit

Have you run this by Benbenek?

From: Romaine, Chris
Sent: Sunday, December 02, 2012 11:55 PM
To: Carter, Sally
Subject: Current (final?) version of revised US Steel Production Increase PSD Permit

FYI

Kras, Kim

From: Frost, Brad
Sent: Tuesday, May 21, 2013 9:06 AM
To: Kras, Kim
Cc: Carter, Sally
Subject: FW: Notice Letter - USS

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
217/524-5023 fax
brad.frost@illinois.gov

From: Romaine, Chris
Sent: Tuesday, December 04, 2012 12:53 PM
To: Carter, Sally
Cc: Frost, Brad
Subject: RE: Notice Letter - USS

It has not been prepared yet.

So the answers are nobody and no or yes, depending on how you approach this.

From: Carter, Sally
Sent: Monday, December 03, 2012 3:57 PM
To: Romaine, Chris
Cc: Frost, Brad
Subject: Notice Letter - USS

Who has it and can I see it?

Kras, Kim

From: Romaine, Chris
Sent: Monday, December 03, 2012 12:34 AM
To: Carter, Sally
Subject: US Steel Baghouse Project Revised PSD Permit - Response to Comments
Attachments: US Steel Baghouse Project PSD Response to Comments 12022012.docx

FYI

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

December 2012

Responsiveness Summary For Public Questions and Comments on the Revision to Construction Permit/PSD Approval 95010001 To Accommodate an Emission Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois

Source Identification No.: 119813AAI
Permit No.: 95010001

DECISION

On November XX, 2012, the Illinois Environmental Protection Agency (Illinois EPA) revised Permit 95010001, for United States Steel Corporation, Granite City Works (US Steel), to accommodate a planned emission reduction project for the two basic oxygen furnaces (BOFs) at this steel mill. In response to comments, the revised permit that has been issued, as compared to the draft of a revised permit prepared by the Illinois EPA, clarifies current compliance procedures for the BOFs, which will continue to apply while the new control system for the BOFs is being constructed. The issued permit also clarifies future compliance procedures for the BOFs, which will apply after the new control system begins operation.

BACKGROUND

US Steel requested revisions to Construction Permit/PSD Approval 95010001, originally issued in 1996, to accommodate an emission reduction project for the two basic oxygen furnaces (BOFs). This project will involve the installation of a new control system with a filter or "baghouse" for secondary particulate emissions from the BOFs, i.e., the particulate emissions from charging and tapping of the BOFs. This new control system is the subject of an Agreement between US Steel and the Illinois EPA. The actual construction of this system is the subject of a separate application for a construction permit, Application 11050006, which is still pending with the Illinois EPA, Bureau of Air.[1]

Revisions to Permit 95010001 have been made to address certain operational requirements in this permit for the BOFs that will no longer be appropriate or possible when the new control system begins operation. The revisions to Permit 95010001 will also remove operational requirements for the BOFs that are now considered obsolete or outdated given new requirements that apply to the BOFs, notably new emission standards and associated operating requirements for BOFs adopted by USEPA. However, the revisions do not involve the emission limits for the BOFs that were originally set by Permit 95010001.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions. Applications for air pollution control permits must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial review of US Steel's application for revisions to Permit 95010001, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a revised permit and prepared a draft of a revised version of Permit 95010001 for public review and comment. The comment period for the revised permit was combined with the comment period for a draft of a construction permit for the new baghouse control system, Application 11050006.

The public comment period began with the publication of a notice in the Granite City Press Record on May 30, 2012. The notice ran again in the Granite City Press Record on June 6th and 13th, 2012. A public hearing was held on July 18, 2012 at the Granite City Township office to receive oral comments and answer questions regarding the two applications and the draft permits (the draft of revised Permit

[1] The construction permit application for the baghouse control system, Application 11050006, is being processed using "Integrated Processing." Accordingly, the construction permit for this system, if issued, would also authorize related changes to be made by administrative amendment to the Clean Air Act Permit Program (CAAPP) permit for the Granite City Works. (The Clean Air Act Permit Program (CAAPP) is Illinois' operating permit program pursuant to Title V of the federal Clean Air Act for major source of emissions and certain other sources of emissions.) In the draft of the construction permit for the baghouse control system that the Illinois EPA has prepared, the specific changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate this system would be identified in Part 2 of the permit.

95010001 and the draft of the new Construction Permit 11050006[2]). The comment period closed on August 17, 2012.

Following the close of the comment period, the Illinois EPA reviewed the oral comments that were made at the public hearing and the written comments that were submitted. This document was prepared to document this review of comments by the Illinois EPA to accompany the issuance of revised Permit 95010001. As related to US Steel's application for a construction permit for the new baghouse control system, which is still pending, when the Illinois EPA takes final action on that application, the Illinois EPA will prepare a separate responsiveness summary to accompany that action.

AVAILABILITY OF DOCUMENTS

The revision of Permit 95010001 issued by the Illinois EPA and this responsiveness summary are available at the Illinois EPA's internet site, http://www.epa.state.il.us/public-notices/.[3] Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The Illinois EPA administers the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, for sources in Illinois pursuant to a delegation agreement with USEPA. When Permit 95010001 was originally issued, it provided approval to construct pursuant to the PSD rules. For PSD permits, USEPA's Procedures for Decision Making, 40 CFR Part 124, provides that individuals who submitted comments on the draft of a PSD permit or otherwise participated in the public comment period for a draft of a PSD permit may petition the USEPA to review the issued PSD permit. In addition, any person who failed to file comments or failed to participate in the public comment period on a draft PSD permit may petition for administrative review but only to the extent changes were made to the draft PSD permit by the final permit decision. If comments were submitted on the draft PSD permit that requested changes in the permit, the PSD permit will not become effective until after the period for filing an appeal has passed. The federal procedures governing appeals of PSD permit are contained in the Code of Federal Regulations, "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19.

To accommodate an appeal of revised Permit 95010001 to USEPA, the revised permit does not immediately take effect upon issuance. The effectiveness of the permit is delayed to provide time for appeal of the permit to USEPA and, if such an appeal is filed, for the appropriate resolution of the appeal.

If an appeal will be submitted to USEPA for the revised permit by a means other than regular mail, refer to the website of the USEPA's Environmental Appeals Board for instructions http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf). If an appeal will be sent by regular mail, it should be sent on a timely basis to the following address:

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

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[2] This draft permit also identifies the related changes that would be authorized to be made by administrative amendment to the CAAPP permit for the Granite City Works to accommodate the new baghouse control system.

[3] This information may also be available on the internet database that USEPA Region 5 maintains for certain air pollution control permits issued in Illinois, Illinois Permit Database, available at http://www.epa.gov/reg5oair/permits/ilonline.html.

Telephone: 202/233-0122

QUESTIONS AND COMMENTS WITH RESPONSES BY THE AGENCY

COMMENTS FROM HEARING

1. The new baghouse would control emissions from tapping and charging of the BOFs, but emissions from refining would continue to be controlled by the existing ESP. Is there a reason that the baghouse could not also control refining?

   The new baghouse system is not designed to control the refining or "primary emissions" of the BOFs because that is not the main target of the Agreement. The bulk of the improvement in control of particulate emissions that is sought is for the secondary emissions of the BOFs, i.e., emissions from charging and tapping of the BOFs. This is where the current control system on the BOFs may be greatly improved to obtain significant benefits for ambient air quality.

   Moreover, baghouses commonly are not considered suitable for control of the primary emissions of a BOF. If one attempted to use a baghouse to control these emissions, the high moisture level in the flue gas entering the baghouse would quickly blind the filter material, interfering with proper operation of the baghouse. The high moisture level is a consequence of the water sprays that are used to cool the flue gas before it enters the baghouse or other control device. This cooling is needed to both protect the control device from damage and, as the volume of flue gas is reduced by cooling, to facilitate effective control of emissions. Accordingly, the primary emissions of BOFs are controlled with ESPs or scrubbers.[4] In this case, primary emissions would continue to be controlled by the existing ESP. The performance of the existing ESP should be expected to improve significantly when it is no longer being relied upon for control of secondary emissions and can be operated for control of only primary emissions.[5]

2. While I am grateful that a baghouse system will be installed on the BOFs, could the system be better? It has taken many years to get to this point. As long as US Steel is installing a baghouse system for the BOFs, why not install the most protective one available, with the greatest emission reduction that can be made. It will be better for public health and perhaps the area can truly meet the National Ambient Air Quality Standards (NAAQS) for particulate matter.

   The Illinois EPA appreciates this sentiment. However, the planned project for the BOFs is appropriate. Secondary emissions from the BOFs will be controlled by a baghouse control system that is specifically designed for effective capture and control of secondary emissions. with substantially greater capacity. This system will be connected to a large baghouse designed for control of secondary emissions, rather than being served by an ESP that must also control the primary emissions of the BOFs.

3. The baghouse at Gateway Energy, the new coke plant in Granite City, is required to remove 99.99 percent of the $PM_{2.5}$ emission. The baghouse proposed to be used for the BOP furnaces

[4] For example, the particulate emissions of the other BOFs in Illinois, at Mittal Steel, in Riverdale, in the Chicago area, controlled by the combination of an ESP system for primary emissions and a baghouse system for secondary emissions.
[5] Accordingly, the Agreement appropriately provided for a new baghouse system for control of emissions from charging and tapping. The Agreement also sets a more stringent limit for the ESP, 0.01 gr/scf, compared to 0.02 gr/scf, However, it did not provide for a new control system be installed for refining emissions of the BOFs, replacing the existing ESP.

would only have 97 percent removal. Why won't the new baghouse for the BOFs be as good as the baghouse at Gateway Energy?

The main baghouse at Gateway Energy and the new baghouse planned for the BOFs at the Granite City Works should not be directly compared in the way that they have been in this comment. In fact, the proposed baghouse at US Steel would be subject to the same performance requirement for as the main baghouse at the existing Gateway Energy plant, i.e., a limit of 0.005 gr/scf for filterable particulate matter in the exhaust from the baghouse.[6]

The cited efficiency values for these baghouses actually address different aspects of the performance of these two control systems. As such, they do not provide a direct comparison of the two baghouse and do not indicate that the new baghouse for the BOFs would not be as "good" as the baghouse at Gateway Energy. For the Gateway baghouse, the efficiency value is actually a specification for the removal capability of the filter fabric, not the overall control efficiency of the baghouse. In contrast, the cited efficiency value for the new control system for the BOFs actually addresses the design control efficiency of the new baghouse for secondary emissions from the existing BOFs at the Granite City Works. As such, it considers the actual nature and loading of particulate matter in the stream that would be entering the baghouse. For baghouses, these are critical factors for the numerical value of control efficiency that is achieved by a baghouse when it is used in a particular application. Accordingly, the performance of filter-type control devices is more appropriately addressed, from a technical perspective, in terms of the outlet dust loading that is achievable or required. On this basis, the requirements for these two baghouses are identical.

4. USEPA has certified numerous filters for 99.99 percent removal efficiency for $PM_{2.5}$. According to the construction permit application, the proposed baghouse for the BOFs will have 97 percent removal efficiency for PM.

The Illinois EPA is not aware of any "filters," i.e., baghouses, that USEPA has certified for their removal efficiency. USEPA has certified various <u>filtration materials</u> for achievement of 99.99 percent removal for $PM_{2.5}$. These certifications are based on evaluations of samples of those materials made in a laboratory using a standardized analytical methodology. This methodology involves introducing a stream of particulate matter of uniform size at a constant rate to the sample of filter material that is being tested. As such, USEPA's certifications for filtration materials do not reflect the performance of the filtration fabrics in actual applications, much less the performance of entire baghouse systems. Accordingly, this comment does not provide meaningful data against which to compare the new baghouse control system for the BOFs.

5. Is this the best baghouse and filter available? Comparing the proposed baghouse to other baghouse units, will this be the best baghouse available? Are the full capabilities of the baghouse going to be used? Could the baghouse achieve a higher efficiency?

As reflected in the construction permit, the new baghouse control system must meet emission limits for particulate matter established by USEPA as Maximum Achievable Control Technology, under the NESHAP, 40 CFR 63 Subpart FFFFF. As such, a modern baghouse is required. While better baghouses could theoretically be used for this project,

[6] Refer to Condition 4.1.5(a) of Construction Permit/PSD Approval 06070020.

this is not what US Steel has proposed. It also is not required by applicable rules since the new control system is an emission reduction project..

Incidentally, it is expected that, in practice, the overall performance of the new baghouse will be better than 97 percent, which is a design specification for this device that was provided in the application.

6. If there is a baghouse control system or filter that would be more protective, that is what I want. I am thrilled about this project but I think of its cost. USEPA is going to set revised NAAQS for $PM_{2.5}$ and ambient air quality in Granite City is not going to meet them. It seems like this is the appropriate time to just get it done. Otherwise, it might not happen for a long time.

The Illinois EPA appreciates the desire to have the most efficient and protective baghouse control system for the BOFs. However, the planned project for the BOFs is a reasonable project that US Steel has committed to implement for control of secondary emissions. A modern capture system connected to a large baghouse will be installed, taking the place of the existing ESP for control of secondary emissions.[7]

7. The draft construction permit for the new baghouse control system would limit its emissions of particulate as particulate matter (PM) but not as PM_{10} or $PM_{2.5}$. For PM_{10} and $PM_{2.5}$, the permit would only require emissions testing followed by submission of a onetime report evaluating PM_{10} and $PM_{2.5}$ emissions with the new control system, presumably for purposes related to the state implementation plan. Why is there no ongoing accountability for PM_{10} and $PM_{2.5}$ emissions?

The permit addresses the particulate emissions of the BOFs in terms of PM because this currently is the most effective and practical way to address these emissions. This is also reason why the Agreement between US Steel and the Illinois EPA addressed the particulate emissions of the BOFs in terms of PM. This is possible because PM, PM_{10} and $PM_{2.5}$ are all different approaches to the measurement and quantification of particulate.[8] As a consequence, limits on the particulate emissions of an emission unit in terms of PM also act in practice to generally address and restrict the unit's emissions of PM_{10} and $PM_{2.5}$. In the simplest terms, a lower limit for particulate emissions in terms of PM, also results in lower emissions of particulate as PM_{10} and $PM_{2.5}$.

Currently, the most effective way to address control of particulate emissions from BOFs is as PM because this is how the particulate emissions of BOFs and their control systems have historically been addressed. There is a body of emission testing upon which to rely when making projections for the PM emission rates that are or will be achievable from BOFs with the use of certain control technology. A similar body of data does not exist for the control of emissions in terms of PM_{10} or $PM_{2.5}$. As a consequence, emission limits expressed in terms of PM can effectively be more stringent than limits expressed in terms of PM_{10} or $PM_{2.5}$. Since they have a better basis, they do not need to account for the high level of uncertainty

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[7] There also have been significant improvements in ambient air quality in the Granite City area, with monitoring in recent years showing attainment of the current federal National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$.

[8] USEPA categorizes particulate as supercoarse, coarse, fine and ultra fine. Supercoarse particulate has an aerodynamic diameter of greater than 10 microns, coarse particulate has an aerodynamic diameter between 2.5 and 10 microns, fine particulate has an aerodynamic diameter between 2.5 and 0.1 microns, and ultrafine particulate has an aerodynamic diameter of 0.1 microns or less. PM_{10} is composed of coarse, fine, and ultrafine particulate. $PM_{2.5}$ is composed of fine and ultrafine particulate. As such, $PM_{2.5}$ is a subset or component of PM_{10}.

that would need to be considered if limits were set in terms of PM_{10} or $PM_{2.5}$.[9] Emission limits in terms of PM are also expected to be more effective because procedures for testing PM emissions have been used for decades and the conditions needed for accurate measurements are well understood. This is not the case for PM_{10} or $PM_{2.5}$.[10] This means that another source of uncertainty that would be present for limits in terms of PM_{10} or $PM_{2.5}$ is avoided when limits are set for PM.

In this case, limits in terms of PM are also more practical because the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, addresses particulate emissions from BOFs in terms of PM. Accordingly, the performance testing that is required pursuant to this NESHAP will also serve to address compliance with the permit limits for particulate. As such, compliance with particulate limits in terms of PM will be easier to implement.

Moreover, it should be apparent that the Agreement between US Steel and the Illinois EPA was made possible because it addresses particulate emissions in terms of PM, rather than $PM_{2.5}$. This enabled US Steel to make commitments for the emissions of the new baghouse control system that US Steel was confident could be met. It also minimized US Steel's burden for additional emissions testing that would not be required by the NESHAP. At the same time, limits for the new control system could still be set in the Agreement that should significantly reduce the secondary emissions of the BOFs, including emissions as $PM_{2.5}$.

8. Since there is a difference between $PM_{2.5}$ and PM_{10}, why would the draft construction permit for the new baghouse control system not set limits for $PM_{2.5}$.

As discussed, in this case, the difference between PM and $PM_{2.5}$ is not sufficient to support setting an emission limit in this construction permit in terms of $PM_{2.5}$. Reductions in the particulate emissions of the BOFs can be achieved with an emissions limit for the baghouse system that is in terms of PM.

x. How significant is it that the Agreement between US Steel and the Illinois EPA sets emission limits for particulate in terms of PM? Does this act to this preclude the establishment of emissions limits in terms of $PM_{2.5}$ in the construction permit?

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[9] For example, if $PM_{2.5}$ makes up approximately 20 percent of the particulate emissions of an emission unit after control, a limit of 0.005 gr/scf for PM is generally equivalent to a limit of 0.001 gr/scf for $PM_{2.5}$. (0.005 gr/scf x 0.20 = 0.001 gr/scf). In actual practice, when relying upon the relationship between different forms for particulate, one should consider the accuracy and reliability of the available data for particle size distribution (i.e., the percentage of the PM emissions that are of different sizes). The better the data for particle size distribution and the lower the variability in this data, the simpler and more consistent the relationship. For example, if the available data is only sufficient to indicate that between 10 and 30 percent of the PM emissions are $PM_{2.5}$ (i.e., 20 ± 10 percent), a limit for $PM_{2.5}$ based on a PM emission rate of 0.005 gr/scf would reasonably be set at 0.0015 gr/scf. To provide the necessary assurance that the limit can be complied with and is "achievable," the limit must be based on the upper bound for the fraction of PM that may be $PM_{2.5}$. In this example, this results in a $PM_{2.5}$ limit of 0.0015 gr/scf. (0.005 gr/scf x 0.30 = 0.0015 gr/scf).

Incidentally, if condensable particulate is present, another consideration for this relationship is the data that is available for emissions of condensable particulate. The relationship between emissions of PM, PM_{10} and $PM_{2.5}$ is most direct when condensable particulate is not a significant fraction of the particulate emissions, as is the case for the emissions of BOFs. The need for any of these considerations is avoided if limits for particulate can simply be set in terms of PM.

[10] For example, USEPA has not yet developed a reference method for testing emissions of filterable PM_{10} or $PM_{2.5}$ from "wet stacks." In a wet stack, moisture in the flue gas may lead to agglomeration of individual particles as they pass through the test apparatus. This prevents reliable and accurate measurements of PM_{10} or $PM_{2.5}$ emissions. The current test methods for filterable PM_{10} and/or $PM_{2.5}$ were developed for "dry stacks," where agglomeration is not a factor, and accordingly are only appropriate for testing of dry stacks.

The Agreement does not directly preclude the establishment of limits for $PM_{2.5}$ in the construction permit for this emission reduction project. However, the approach taken to particulate emissions in the Agreement is significant as it is a reflection of the various considerations that culminated with an Agreement that addresses particulate emissions with limits that were expressed in terms of $PM_{2.5}$.

9. Given that the purpose of the new baghouse control system is to reduce the $PM_{2.5}$ emissions of the BOFs, that the Granite City area is designated nonattainment for $PM_{2.5}$ and could well be nonattainment under revisions to the $PM_{2.5}$ NAAQS that USEPA has proposed, is there anything that prevents Illinois EPA from putting a $PM_{2.5}$ limit in the construction permit.

As discussed, a variety of considerations lead to a construction permit that addresses control of particulate emissions from the BOFs in terms of $PM_{2.5}$. Most significantly, a limit that addresses the particulate emissions of the BOFs in terms of PM also addresses emissions of $PM_{2.5}$, likely more effectively than if a limit were to be established in terms of $PM_{2.5}$. Accordingly, factors cited by this comment do not provide an adequate basis to set limits in terms of $PM_{2.5}$ in the construction permit for the new baghouse control system.

10. It seems that the draft construction permit for the baghouse control system has many provisions that are not in the Agreement. This suggests to me that the Illinois EPA chose not to put a $PM_{2.5}$ limit in the permit.

The draft construction permit would not set any emission limits that are not established by the Agreement or by applicable emission standards. The "other" provisions in this draft permit, which are broadly referred to by this comment, would deal with testing, operational monitoring, recordkeeping and reporting. These provisions would serve to verify ongoing compliance with the applicable emission limits. These provisions would also be needed to address the transition from the current requirements for testing, operational monitoring, recordkeeping and reporting to the new requirements that will apply with the baghouse control system. Finally, the permit would rely upon the general authority of the Illinois EPA to reasonably require sources to gather emission and emission related data. These provisions in the draft construction permit would be reasonable and appropriate, addressing aspects and implications of this emission reduction project that were not explicitly addressed in the Agreement. The presence of these provisions in the draft construction permit does not show that it would be appropriate for the construction permit for the baghouse system to set limits for $PM_{2.5}$ emissions.

11. Under what circumstances would the Illinois EPA set a $PM_{2.5}$ limit in a construction permit?

Construction permits issued by the Illinois EPA currently include limits for $PM_{2.5}$ emissions when federal or state "New Source Review" (NSR) rules necessitate such limits because of the nature and circumstances of the projects that are the subjects of the permits. The NSR rules do not provide a basis to set limits for emissions of $PM_{2.5}$ in the construction for the new baghouse control system for the BOFs. This is because this project will reduce the emissions of $PM_{2.5}$ from the BOFs[11]

[11] In general, construction permits currently set emission limits in terms of $PM_{2.5}$ for two types of projects relative to emissions of $PM_{2.5}$, "minor projects" and "major projects." For minor projects, which are far more common, construction permits set limits for $PM_{2.5}$ emissions as needed to address applicability of NSR. The limits for $PM_{2.5}$ emissions in these permits restrict emissions or the increases in emissions of $PM_{2.5}$ from a source or project to less than the emission thresholds at which the project would be considered major under the applicable NSR rules for its $PM_{2.5}$ emissions. However, since limits for PM emissions also serve to restrict emissions of $PM_{2.5}$, limits in terms of $PM_{2.5}$ are

12. Do any BOF shops at steel mills in the United States have limits for $PM_{2.5}$ emissions?

Given the current circumstances for control and regulation of $PM_{2.5}$ emissions, the Illinois EPA does not believe that any existing BOF shops in the United States, similar to this BOF shop, are subject to limits expressed in terms of $PM_{2.5}$ emissions.[12] In any case, it would not be an appropriate use of Illinois EPA resources to conduct a survey to definitively answer this question. This is because even if another existing BOF shop in the country is subject to limits for $PM_{2.5}$ emissions, it would not show that it is appropriate to include such limits in this construction permit. As already discussed, emissions of $PM_{2.5}$ can be addressed and restricted by limits for emissions of PM. This is because $PM_{2.5}$ is a component of PM so limits for PM emissions act in practice to also constrain $PM_{2.5}$ emissions.

13. There are gaps in the description of the new baghouse in the application for the new baghouse control system that make it difficult to evaluate the draft construction permit. On the general data and information form for the baghouse, the manufacturer and model number of the baghouse are shown as "to be determined." On the form for filter control equipment, the filter material is described simply as "polyester." The filtering area is also "to be determined." Inlet emission stream parameters, including mean particle diameter are unknown. Are there reasons why these details are not provided or were marked the way they were? Has Illinois EPA obtained any more information for the baghouse, such as the supplier, model number, or filter area or details concerning the operation of the baghouse?

The application contains the information that is currently available for the new control system. US Steel has not yet entered into a contract for this project and the new baghouse has not yet been designed.[13] The application is based on a preliminary or conceptual design that US Steel had prepared for the project, including the performance specifications that are to be met by the baghouse, i.e., a PM emission rate of no more than 0.005 grains/dry standard cubic foot. Given the cost of this project, US Steel will not enter into a contract for the baghouse until after this project is fully permitted. Only then will a firm be selected to provide the baghouse and the engineering design of this device be started.

14. Even though the draft construction permit would not set limits for emission of $PM_{2.5}$, it would require testing for emissions for $PM_{2.5}$, which I am not questioning. What use does the Illinois EPA plan to make of the results from this testing?

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only set when limits in terms of PM or, in some cases, PM_{10} will also not be sufficient to address applicability of NSR rules to a project for $PM_{2.5}$ emissions.

For major projects for emissions of $PM_{2.5}$, which are far less common, NSR rules now generally require that the construction permits for such projects explicitly address $PM_{2.5}$ emissions, with limits that represent Best Available Control Technology or the Lowest Achievable Emission Rate that are in terms of $PM_{2.5}$ emissions.

The relevant emissions thresholds under the NSR rules that distinguish minor projects from major projects, i.e., major new sources and major modifications, are as follows:

Thresholds for a major source:

Federal PSD rules, 40 CFR 52.21 - Either 100 or 250 tons/year, depending on the category of source

State nonattainment NSR rules, 35 IAC Part 203 – 100 tons/year

Threshold for a major modification for emissions of $PM_{2.5}$ - 10 tons/year

[12] It is expected that only BOFs that recently underwent permitting for proposed modifications, if any, will be subject to limits that address emissions of $PM_{2.5}$. Such limits would be a consequence of the New Source Review rules that apply to modifications and, even if technically sound, would not provide any insight as to an appropriate limit for these BOFs as they are not being modified.

[13] Due its size and other project-specific considerations, the baghouse for this project will be designed by the selected manufacturer specifically for the project. The baghouse will not be a stock model of baghouse.

This testing would identify the specific relationship between the emissions of PM, PM_{10} and $PM_{2.5}$ from the BOFs. As such, $PM_{2.5}$ emission data gathered by this testing would improve the data used in future air quality modeling that is conducted for the Granite City area or the St. Louis region for $PM_{2.5}$ air quality. If found to be necessary for the attainment of the NAAQS for $PM_{2.5}$, including attainment of the anticipated future revisions to the $PM_{2.5}$ NAAQS by USEPA, the data gathered by this testing could assist in development of new standards for the BOFs, either in terms of PM, PM_{10} or $PM_{2.5}$ emissions, as appropriate.[14] Finally, the data gathered by these tests would support future permitting in Illinois and in other states in circumstances in which NSR rules do require that limits be set for particulate emissions as $PM_{2.5}$.[15]

15. Condition 3-1(b)(ii) of the draft construction permit, as it addresses the required testing for emissions of filterable PM_{10} and $PM_{2.5}$, should not specify that this testing must be conducted with USEPA Method 201 or 201A. Rather, use of only Method 201A should be specified. This is because Method 201 only measures PM_{10} emissions, whereas Method 201 can be used for measurements of both PM_{10} and $PM_{2.5}$.

The error in the draft permit identified by this comment will be corrected in any construction permit that is issued. That is, the measurements of PM_{10} and $PM_{2.5}$ emissions that are required must be made using USEPA Method 201A.

16. Condition 3-1 (e)(iii) of the Draft Construction Permit would require the final report for emission testing that is submited to the Illinois EPA to contain the operating parameter limits for the new baghouse control system that are proposed by US Steel based on such testing. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what are the procedure and the timeframe in which Illinois EPA reviews and establishes them?

The provisions of the Iron and Steel NESHAP, including 40 CFR 63.9(h)(2)(ii), 63.7790(b)(1), 63.7800(b)(3) and 63.7824(a) and (c), govern the operating parameters limits for the BOFs with baghouse control system that are addressed by this comment. This NESHAP does not provide for approval of a source's proposed operating parameters limits by a permitting authority. Rather the limits that are established for operating parameters under this NESHAP are the levels of operating parameters during performance testing. These levels are contained or documented in the current Operating and Maintenance Plan for a subject facility which the source must maintain pursuant to this NESHAP, which plan specifies how the subject facility must be operated.[16]

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[14] It should not be expected that this testing would ever be used to demonstrate compliance with standards or limits for $PM_{2.5}$ emissions, as there would not be any limits in terms of $PM_{2.5}$ emissions when this testing is conducted.

[15] US Steel would also use the results of this testing in preparing the "performance report" required for this project by Condition 6(d) of the construction permit. In this report, US Steel must evaluate the reduction in emissions that is achieved by this project for emissions of particulate as $PM_{2.5}$.

[16] In this case, to revise or set new operating parameter limits for the capture system on the BOFs under the Iron and Steel NESHAP, US Steel must first submit a written notification or request to the Illinois EPA to conduct performance tests that would be the basis of the new operating parameters limits. In this case, this notification would address the "initial performance test" conducted for the BOFs with the new baghouse control system. It is expected that this notification would also address the initial operation of the BOFs with the baghouse system, until the performance tests are conducted. During this period, the current limits for operating parameters of the capture system, with control of secondary emissions with the existing ESP, would no longer be applicable but testing will not yet have been conducted to demonstrate the adequacy of the new limits for operating parameters with the baghouse system. In conjunction with US Steel's written notification for planned testing, subject to any directives from the Illinois EPA in response to this notification, US Steel must also revise its operation and maintenance plan under the NESHAP. This revision would need

17. Condition 3-2(a) of the draft construction permit would require US Steel to make measurements in order to determine the PM efficiency of the new baghouse. The condition would allow for these measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

These measurements, which would relate to the efficiency of the new baghouse control system,[17] are being required to obtain information on the amount of PM collected by this system. This information is of interest to the Illinois EPA as related to the overall reduction in particulate emissions of the BOFs that is achieved in actual practice by this new system.[18] The required measurements are not needed to confirm compliance with an applicable limit or control requirement. As such, it is reasonable and appropriate for the construction permit to provide flexibility in the approach that US Steel uses for these measurements. At this time, this is especially true, as neither approach to measurements is preferred. Direct measurements of the PM loading into the baghouse would be expected to be more precise and correlate directly with measurements of emissions. However, these measurements would be taken over a relatively short period of time so would not necessarily be more accurate than indirect measurements, based on the amount of particulate collected by this system over a week or month. Indirect measurements would likely be more accurate as they address a longer period of operation of the BOFs. However, they would be less precise, as much larger amounts of material would be involved. As such, there is not a clear preference for the approach that should be taken to the measurements.

18. Currently with the ESP, the PM emissions of the BOP furnaces are reported to be 439.5 tons/year. With the new baghouse system, they would be 405.4, which boggles my mind.

The emission data cited by this comment, which was provided by US Steel for the application for a construction permit, is a very conservative evaluation of the change in emissions that would accompany this project. It reflects maximum operation of the BOFs, at their annual capacity, and a minimum level of improvement in control of emissions by the new baghouse system. Accordingly, this data overstates both current emissions and future emissions. A better assessment for the change in emissions is provided later, in response to another comment.

USEPA COMMENTS

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to address the levels of operating parameters during the initial operation of the BOFs with the baghouse, consistent with US Steel's description of operation during this period as provided in the written notification for testing.

The next step in setting new operating parameter limits is for performance tests to be conducted for the BOFs to demonstrate the adequacy of the new limits. These performance tests would be conducted with the new baghouse control system operating at the levels of operating parameters that US Steel seeks to establish as the new limits. Following the date of testing, US Steel would be expected to continue to operate at or above the levels of parameters present during testing if testing demonstrated compliance while operating at those levels.

The final step in the process of setting new operating parameter limits is US Steel's submittal to the Illinois EPA of the report for this testing, with the new values for these limits.[16] With this report, US Steel must also certify that the BOFs operated at these values of operating parameters during testing and that the testing was properly conducted for the purpose of setting new limits for operating parameters. As part of this step, US Steel must also revise its operating and maintenance plan to reflect that these new limits for operating parameters are applicable on a continuing basis.

[17]The efficiency of a baghouse, in percent, is calculated as follows:

100 x [1 – (Inlet Mass – Outlet Mass)/Outlet Mass] = Percent Control Efficiency

[18]Based on public comments, this information is also of concern to the public as it would support comparison between the new baghouse control system and baghouse systems at other sources.

19. The USEPA appreciates the potential air quality benefits of the project and the work that US Steel and the Illinois EPA and have done for this project.

This comment, which does not request any changes to the draft permits, is acknowledged.

20. For certain conditions that are rendered "unnecessary" only after the new baghouse control system becomes operational,[19] revised Permit 95010001 should specify that the current conditions remain in effect until the new baghouse becomes operational. This would ensure that the source continues to demonstrate compliance with permit limits in the manner currently provided while the baghouse is being constructed, until the time that the new baghouse becomes operational.

Revised Permit 95010001, as issued by the Illinois EPA, includes the provision suggested by this comment (new Condition 11(b)). This condition explicitly requires that the source continue to comply with certain conditions or requirements of the previous permit during the period until the new baghouse control system becomes operational.[20] The draft of the revised permit would have relied on the fact that these requirements, which will continue in effect until the new control system begins operation, are also contained in the Clean Air Act Permit Program (CAAPP) permit for the source.[21] However, the continued applicability of these requirements until the new system begins operation can also be explicitly provided for in the revised permit.

It should be noted that the approach that is now being taken in revised permit has added further complexity to the permit. Since the revised permit now explicitly requires compliance with existing requirements while the baghouse control system is being constructed, the various conditions that contain these requirements must be appropriately carried over in the revised permit. In particular, minor technical corrections and updates must also be made to the requirements for continuous operational monitoring for stack gas flow rate and waste gas suction (former Conditions 12 and 13, revised Condition 12), which would not have been needed if these requirements had not been carried over in the revised permit. In particular, in the revised permit, these requirements must reflect developments in permit requirements for monitoring systems, with similar requirements set for both systems and provision for use of computerized systems for recording of data.[22]

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[19] The Project Summary indicates that the following conditions that are proposed for deletion would be rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e) (recordkeeping for ESP flow rates for charging and tapping), 13(a), (c) and (d) (monitoring for waste gas suction, measured as static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, pages 3 - 6.

[20] New Condition 11(b) also addresses the possibility that the baghouse control system that is now planned does not go forward but another emission reduction project with a control system for secondary emissions from the BOF would occur in the future. This condition generally provides that the subject requirements in the original permit remain in effect until either the new baghouse control system that is now planned begins operation or another control system for secondary emissions begins operation. This is because any other new control system for secondary emissions would present similar issues as the planned baghouse system, making the subject requirements that were originally established in 1995 in Permit 95010001 unnecessary.

[21] The changes to the CAAPP permit for the source that are planned to address the new baghouse control system would maintain the effectiveness of the subject conditions until this new control system becomes operational.

[22] In addition, former Condition 12(c) improperly suggested that emissions testing to evaluate alternative set points for the capture system would have to be conducted at the established set points. This would paradoxically mean that testing to evaluate alternative set points would not actually be possible, since such testing would have to conducted at the established set points.

21. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: Conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP));[23] and Condition 10 and Attachment A (procedures to ensure proper operation of the BOF's ESP). The Illinois EPA states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and the federal National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, pages 1 - 3. The key element of this rationale is that the monitoring provisions of the Iron and Steel NESHAP are sufficient to assure compliance with the relevant permit limits as originally established. Accordingly, USEPA recommends that the permit clearly establish a connection between the permit and the Iron and Steel NESHAP. Such a connection could be made by including conditions in the permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant permit limits. (This information would then be appropriately re-iterated in the CAAPP permit.) This is of concern because USEPA believes that the CAAPP permit may not be used to supersede, replace, or otherwise eliminate the independent enforceability of the terms and conditions in the PSD permit.[24]

In place of the current compliance provisions in Permit 95010001 that would be rendered inappropriate or unnecessary with the new baghouse control system,[25] the revised permit that has been issued includes a condition, as requested by this comment, requiring that the source comply with all applicable requirements of the Iron and Steel NESHAP for the BOFs, including operation, maintenance, testing, monitoring and recordkeeping requirements. (See Condition 9 in the revised permit 95010001.[26]) When the new baghouse control system begins operation and starts to control particulate emissions from charging and tapping of the BOFs, the various requirements of the Iron and Steel NESHAP will take the place of the compliance provisions in the current permit that will no longer apply. As a consequence, the revisions that have been made to Permit 95010001 would maintain the "independent enforceability" of this permit.[27]

22. The revised PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the permit rather than to the related conditions of the

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[23] Condition 9(a) of the current permit requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using USEPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

[24] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, May 20, 1999. Available at http://www.epa.gov/ttn/caaa/15_memoranda/hodan7.pdf.

[25] **As already been discussed in the response to Comment 20, monitoring requirements that will be rendered inappropriate have not necessarily been physically removed from revised Permit 95010001. Rather, to appropriately maintain continuity of requirements, the subject requirements are physically present in the revised permit but will cease to be effective when the new baghouse control system begins operation.**

[26] **New Condition 9 in Permit 95010001 broadly requires that the source comply with applicable requirements of the Iron and Steel NESHAP for BOFs, without specifying the particular requirements that are applicable. This is sufficient as the Iron and Steel NESHAP is a federal regulation, codified in the Code of Federal Regulations, and is directly enforceable. In addition, relevant requirements of this regulation as applicable to the source are recapitulated in the CAAPP permit for the source. This also avoids the need for future revisions to Permit 95010001 as might be needed if the Iron and Steel NESHAP is revised in the future by USEPA. (Based on the Information Collection Requests made by USEPA in 2011 for the steel industry, it is anticipated that USEPA will be making revisions to this NESHAP.)**

[27] **It is noteworthy that the guidance from USEPA cited by this comment does not directly apply to the current action. The cited guidance addressed actions that may be taken in a Title V permit. In the present action, the Illinois EPA has issued a revised construction permit, taking a permitting action under Title I of the Clean Air Act, not an action under Title V of the Clean Air Act.**

CAAPP permit that address the provisions of the NESHAP. As a construction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

The changes to the revised permit would maintain the independent enforceability of the PSD permit. This is because the compliance procedures of the current PSD permit that address control of particulate would be directly replaced with provisions of the NESHAP, with an approach to compliance that is equal to or better than that in the original PSD permit. For example, operational monitoring of stack flow rate would be replaced with monitoring in the duct work. Specific operational practices for the ESP would be replaced with operational practices that would be codified in an operation and maintenance plan, which would evolve in response to improvements and other changes in practices.[28]

23. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 CFR 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at page 8. Clarification is needed to ascertain the actual amount of the projected overall emissions reduction due to the project.

The Illinois EPA does not believe that the information requested by this comment, which relates to the planned issuance of a construction permit for the new baghouse control system, is needed to support that proposed action. This is because an essential element of a modification under New Source Review is that a proposed project would act to increase emissions of one or more pollutants that are regulated under New Source Review. As discussed, the proposed baghouse system would be an emission reduction project for particulate emissions of the BOFs and would be carried out to meet provisions of the Agreement. The new baghouse system would not increase the capacity or efficiency of the BOFs. There also would not be any collateral increases in emissions of other, non-target pollutants from the operation of the system. As such, the new baghouse system should not be considered a modification for purposes of New Source Review.[29]

Even though the reduction in particulate emissions need not be quantified in response to this comment, the Illinois EPA has further examined the amount of the emissions reduction that may be assumed for this project. This evaluation has been conducted in terms of emissions of PM_{10} because underlying emission data is more reliable for PM_{10} than for $PM_{2.5}$. For purposes of PSD, 40 CFR 52.21, the historic actual emissions of the BOFs are appropriately assumed to be on the order of 314 tons of PM_{10} per year.[30] The future

[28] The revised PSD permit would not attempt to make other enhancements to the PSD permit, as might be needed to address deficiencies in the compliance procedures in the original PSD permit. As confirmed by the guidance from USEPA cited by this commenter, those enhancements are appropriately made in the CAAPP permit for the source as part of the process of establishing appropriate periodic monitoring for the source.

[29] For example, refer to correspondence from USEPA concerning a proposed improvement of particulate matter control at Lehigh Portland Cement in Mitchell, Indiana (Letter, February 12, 2001, Pamela Blakley, USEPA Region 5, Air Programs Branch, to Paul Dubenetzky, Office of Air Management, Indiana Department of Environmental Management.)

[30] The average of the PM_{10} emissions reported by US Steel in its Annual Emission Reports for the peak years of production during the last ten years, 2004 and 2005, is 313.90 tons per year. In each of these years, the BOFs operated at about 72 percent of their permitted annual rate.

emissions of projected future actual emissions should be expected to be at most about 260 tons of PM_{10} per year.[31] This yields a reduction of 54 tons of PM_{10} per year.

Comment [e1]: USEPA indicates that it was commenting on the PSD permit

24. Condition 8 of Permit 95010001, which limits the opacity of emissions from the BOF shop to 20 percent, would be revised to require compliance with this 20 percent opacity limit using the procedures in 35 IAC 212.446(e) instead of the procedures prescribed by previous Conditions 9(a) and (b). The permit record does not indicate that Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(e). Condition 8 in the current permit appears to be more stringent than in the draft of the revised permit since Conditions 9(a) and 9(b) of the current permit requires opacity observations to be conducted on at least a weekly basis. Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(e), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

The changes to the permit addressed by this comment do not act to relax the stringency of the opacity standard for the BOF shop, as suggested by this comment. Rather these changes involve either changes to the compliance procedures that accompany this standard that are appropriate to address the installation of the new baghouse control system[32] or are straightforward clarifications or corrections to technical elements of those compliance procedures.

Former Condition 9(a) dealt with opacity observations that the source was required to conduct for the BOF shop to verify compliance with the established opacity standard for the BOF shop, 20 percent. The source was required to conduct these observations at least weekly. The source of emissions/opacity from the BOF shop is secondary emissions from the BOFs that are not captured. Former Condition 9(a) set a frequency for these opacity observations by the source for a BOF shop in which the furnaces did not have a separate control system for their secondary emissions. However, when secondary emissions of the furnaces are controlled with the new baghouse control system, weekly observations of opacity from the BOF shop by the source should not be needed. The new baghouse control system, with its improved capture hooding and baghouse, will control secondary emissions more effectively than the current control system, which uses a single ESP for control of both primary and secondary emissions. In this regard, the Iron and Steel NESHAP does not require any observations for the opacity of emissions from a BOF shop by a source other than observations made in conjunction with periodic testing of stack emissions of particulate matter. Rather, this NESHAP appropriately relies on continuous operational monitoring for the capture system for secondary emissions of BOFs to address continuous compliance with an opacity standard of 20 percent, 3-minute average. This NESHAP provides appropriate base compliance procedures for the construction permit recognizing

[31] The future emissions were conservatively calculated assuming that the BOFs would actually operate near their permitted annual rate compared to the maximum rate that US Steel has achieved in practice, i.e., 90 percent compared to 75 percent. To account for the normal operation of control devices, the baghouse and ESP were also conservatively assumed to comply with applicable emission standards under the new control configuration by 40 and 20 percent respectively. For example, rather than having emissions of 31.9 pounds per hour (745,200 scfm/min x 60 min/hr ÷ 7,000), on annual basis basis, actual PM_{10} emissions would be 19.2 pounds/hr (31.9 x 0.6 = 19.14 pounds/hour).

[32] The stringency of this opacity limit is unaffected by the revision of the permit. The limit continues to apply at all times. The source is not excused from an obligation to conduct opacity observations as needed in practice to confirm compliance with this limit. Compliance can also be independently determined by observations by members of the Illinois EPA staff that are certified opacity observers.

that the control measures used on the furnaces may improve over time. As such, the appropriate compliance procedures that are appropriate for the current configuration of control(s) must be addressed each time that the CAAPP/Title V permit for the source is renewed, as these permits must provide for Periodic Monitoring.

The procedures by which opacity observations are to be made for the BOF shop was addressed by former Condition 9(c), not Condition 9(b). (Condition 9(b) dealt with actions to be taken in the event of an outage of the continuous opacity monitoring system on the ESP.[33]) As related to Condition 9(c), the procedures for observations of opacity from the BOF shop, the removal of this condition from the permit does not affect the stringency of the opacity limit. This is because Condition 8 now cites 35 IAC 201.446(c), the state emission standard that limits opacity from the BOF shop to 20 percent. Like former Condition 9(c), 35 IAC 212.446(c) provides that compliance with the 20 percent opacity limit is to be determined using USEPA Method 9. Unlike former Condition 9(c), 35 IAC 212.446(c) also further provides that "compliance shall be determined by averaging any 12 consecutive observations taken at 15 second intervals." This is a necessary clarification as Method 9 would otherwise provide that compliance with the opacity is to be determined as a 6 minute average, based on 24 individual observations.[34]

US STEEL - COMMENTS

25. ~~In Application 11050006,~~ US Steel has applied for a construction permit for an emissions reduction project that involves a new baghouse control system for secondary emissions of the BOFs. Because operation of this new control system will render certain requirement of existing Permit 95010001 obsolete, US Steel requested that this permit be revised to remove those obsolete conditions and the Illinois EPA has grant this request. In order to denote where conditions have been removed, the draft of revised Permit 95010001 would have included explanatory notes identifying where conditions had been removed. For consistency, a note should also be included after Condition 18 in the revised permit stating that the "note" that previously accompanied this condition has been removed from the permit.

Revised Permit 95010001 includes the explanatory note requested by this comment. The purpose of the various explanatory notes that have been included in the revised permit is generally to avoid possible future confusion. Most importantly, they enable a person that is referring to the revised permit to understand why the conditions in the permit are not

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[33] With respect to former Condition 9(b), this condition is now considered obsolete as it "contemplates" and directly provides for an interruption in the operation of the continuous opacity monitoring system on the ESP. Given the reliability of opacity monitors, it is not reasonable to expect such outages to be a normal occurrence. Accordingly, any outages of the opacity monitoring system that would occur should be addressed in the context of potential enforcement. It should not be "condoned" as such outages have been contemplated and addressed by a condition in a permit that specifies the consequences that result from any such outage. This is particularly true now that this opacity monitoring system for the ESP is required by the Iron and Steel NESHAP, as well as being implicitly required by this permit.
Moreover, former Condition 9(b) was also flawed as it indicated that in the event of monitor outage, human observations of opacity from the ESP stack were to be conducted during "any normal work day (i.e., Monday through Friday)." In the event of such outages, the timing of such observations should be a matter that is determined on an event-specific basis. For example, if an upset of the ESP occurred during an outage of the opacity monitor, it could well be appropriate for the source to immediately arrange for opacity observations to be made even if the event occurred on a Saturday or Sunday.

[34] Incidentally, the 20 percent opacity limit for the BOF shop in 35 IAC 212.446(c) should "be expected" to be identical to the 20 percent opacity limit in Condition 8, as set in Permit 95010001 in 1995. This is because 35 IAC 212.446(c) was subsequently adopted to codify the 20 percent opacity limit for the BOF shop set by the permit as part of Illinois' State Implementation Plan (SIP). The 20 percent opacity for the BOF shop is more stringent than the 30 percent opacity limit that would otherwise apply pursuant to 35 IAC 212.123.

numbered consecutively and there are gaps in the numbering.[35] The change requested by this comment could also serve to avoid possible future confusion. It would make clear that the previous note, which provided a definition of a "BOF cycle," was intentionally removed in the revised permit.[36] Accordingly, the change requested by this commenter was made.

x. Condition 1(b) of the draft construction would require US Steel to submit its initial revisions to the plans required by the Iron and Steel NESHAP, i.e., the operation and maintenance plan and the startup, shutdown and malfunction plan, to address the BOFs with the new baghouse control system at least 30 days in advance of initial operation with this system. However, the revision to this plan should not be submitted until after the initial performance testing is performed and completed, as required pursuant to Condition 3-1(a)(i). As this performance testing is needed to establish new limits for operating parameters, it is necessary for the testing to be completed in order to accurately revise this plan.

This comment does not support any changes to the construction permit. As observed by this comment, a revision to the operation and maintenance plan will be needed after performance testing is conducted. However, an earlier revision to this plan will also be needed, as addressed by Condition 1(b). This is necessary so that the BOFs are always being operated in accordance with a current plan. This would not be the case if the source does not make any revisions to its operation and maintenance plan until after initial performance testing with the new baghouse control system is completed.

x. Condition 3-1(a)(i) of the draft construction permit would require that the source promptly conduct a performance testing for PM emissions in accordance with the NESHAP following initial operation of the BOFs with the baghouse, to establish new operating limits for the capture system for the BOFs. This condition should provide that "promptly" means that the performance test will be conducted after shakedown. It should also specify that the performance testing be conducted to demonstrate not only compliance with the emission limit in Condition 2(a) and applicable NESHAP limits for the baghouse and the ESP but also to establish new operational limits for the baghouse and revised operational limits for the ESP. In addition, this condition should specify that U.S. Steel will submit a revised O&M plant after the new and revised operational limits for the controls have been determined.

Comment [e2]: What operational limits?

Comment [e3]: Already discussed and not necessary to be stated, since explicitly required by the NESHAP.

This comment is not accompanied by any support for the requested changes to the condition. In particular, the Iron and Steel NESHAP does not provide that performance testing to establish new limits for operating parameters may be deferred until after

[35] The preferred practice of the Illinois EPA when issuing revised construction permits is to retain the numbering of conditions in the original permit as this can be practically and reasonably accomplished. This serves to maintain continuity in the numbering of conditions between the past and current versions of a permit when a permit is revised. It minimizes possible future confusion that might occur if conditions in a permit were simply renumbered when a permit was revised adding or removing conditions from the permit.
In the absence of the explanatory notes, a person who was referring to the revised/current permit would be uncertain whether a complete version of the permit was being examined or whether certain conditions were in some manner omitted from the particular copy of the permit.

[36] The note that has been removed from the permit defined the BOF cycle as the period from the beginning of charging through the end of the tapping process. It is no longer appropriate to include this definition for the BOF cycle n the permit. It is inconsistent with the related definition for steel production cycle that USEPA adopted in the Iron and Steel NESHAP, 40 CFR 63.7852. USEPA defined the steel production as the operations conducted at the a BOF to produce each batch of steel, beginning with charging of scrap and ending with deslagging.

"shakedown" of a new control system is completed.[37] Accordingly, the burden is on US Steel to show that the testing needed to establish new operating parameter limit is conducted as soon as is reasonably and practically possible, i.e., "promptly."

x. Condition 3-1(a)(ii) of the draft construction permit would requires emissions testing for PM, filterable PM_{10} and $PM_{2.5}$, condensable PM, NO_x, CO, VOM and lead within one year of initial operation of the baghouse controlling charging and tapping from the BOPFs. Since the baghouse does not remove gaseous pollutants, such as NO_x, CO or VOM, emission testing for these pollutants should not be required. In addition, since there are no applicable NO_x, CO or VOM limits for emissions from the baghouse, emissions testing for these pollutants from the baghouse would yield results that are only minimally useful. Also not, that according to the Iron and Steel MACT (40 CFR Part 63, Subpart FFFFF) and a recent information collection request, NO_x, CO and VOM are not pollutants of concern from BOP secondary emissions control devices, and accordingly, only PM and metal HAPs should be subject to testing requirement. U.S Steel requests that the testing for NO_x, CO and VOM required by this condition be removed from the draft baghouse permit.

If the Illinois EPA requires testing for NO_x, CO and VOM it is better to require testing for these pollutants only on the primary emissions control device, such as the ESP, which is not only more effective, but also more feasible and consistent with historical practice. This type of testing on the primary emissions controls is the approach taken by the Iron and Steel MACT. In addition, should testing for NO_x, CO and VOM be required on the primary control device, results can be compared to the applicable limits in the CAAPP permit. See CAAPP Permit No. 96030056 at Condition 7.5.6(c) (BOF ESP Stack Emissions).

x. Condition 3-1(b)(i) and (ii) of the draft construction permit would provide that PM testing should be conducted using applicable procedures specified in the NESHAP and testing of other pollutants shall be conducted using applicable USEPA procedures. In subsection (b)(ii), the draft baghouse permit lists methods for filterable PM_{10} and $PM_{2.5}$ and condensable PM, which seems inconsistent with the statement in subsection (b)(ii) to use applicable USEPA methods for testing pollutants other than PM. Subsection (b)(ii) also creates ambiguity in that it is unclear whether the listed PM test methods are intended to apply to testing for other pollutants, which does not seem appropriate. U.S. Steel seeks clarification regarding the applicable test methods for PM and other pollutants.

Comment [e4]: Material that will not be included in the Responsiveness Summary for the revised PSD permit

USS - PROCESS FOR CHANGES TO PSD PERMITS

26. In the Project Summary for the revisions to Permit 95010001, the procedures that are being used to process this application are addressed in Footnote 13, which provides in relevant part:

> This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for

[37] In addition, the requested change would be problematic because the term "shakedown" is not defined by the Iron and Steel NESHAP.

Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable.

In an effort to avoid any further delay in the issuance of a construction permit for the baghouse control system (Permit 11050006), US Steel agreed to a public comment period for the revisions to Permit 95010001. However, this should not be viewed as precedent for processing these type of administrative changes to a PSD permit, where the changes result in no increase in emissions and have no adverse impact on air quality.

The Illinois EPA agrees with the general observation made by this comment. The approach taken by the Illinois EPA in the processing of the revisions to Permit 95010001 should not be taken as a general precedent precluding the processing of revisions to PSD permits by administrative amendment, whereby certain revisions to PSD permits may be directly made by the permitting authority without a public comment period. Rather, the procedural approach that was taken for the revisions to Permit 95010001 reflects a narrow finding by the Illinois EPA for the appropriate procedures for this permitting action, considering the entirety of the circumstances for this action.[38]

27. The proposed revisions to Permit 95010001 are administrative in nature and are not required to be subject to a public comment period. Illinois EPA, on its own, could have administratively amended Permit 95010001 without a public comment period.

As observed by this comment, the Illinois EPA could arguably have elected to revise Permit 95010001 by administrative amendment. However, this was not the approach that the Illinois EPA elected to take. Based on the nature of the requested revisions and the various surrounding circumstances, the Illinois EPA found that a public comment period was warranted before the permit was revised. Accordingly, the Illinois EPA prepared a draft of the revised permit. In response to the comments that were received on the draft permit, the revised permit that has now been issued differs from the draft permit in a number of respects, as has already been discussed.

28. USEPA developed a draft of guidance addressing the procedures for processing modifications of PSD permits, Revised Draft Policy on Permit Modifications and Extensions, USEPA, July 5, 1985 (Draft Guidance). Although this guidance was never finalized, it still provides direction on the appropriate procedures to be used for different categories of modifications to PSD permits. In this guidance, USEPA categorized proposed changes to PSD permits as administrative, minor, significant, or fundamental, based on the significance of the proposed changes and the extent of review that the permitting authority must conduct.[39] Of particular relevance for this action, is the

[38] **Moreover, as the changes to Permit 95010001 involve emissions of particulate, it is debatable whether changes have even been made to a "PSD permit." The changes do not involve "PSD review requirements," e.g., Best Available Control Technology (BACT), because the project addressed by this permit was not a major modification for emissions of particulate. However, the Illinois EPA chose to proceed as if the entirety of Permit 95010001 is a PSD permit. As discussed, this should preclude any future question whether the procedures used for this revision of Permit 95010001 were adequate and sufficient, thereby assuring that the revised permit is legally authorized and the outdated provisions of the previous version of this permit are no longer applicable.**

[39] The categorization of proposed changes also considers whether the source or project is operating. USEPA explained that the guidance typically imposes a less rigorous process for changes at operating units because, among other factors, "a project in its earlier phases is much more flexible than one already operating."

guidance that is provided for proposed modifications to PSD permits that are categorized as administrative changes.[40, 41] In this regard, this guidance provided:

> Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emission or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decision originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or trading, must be carefully documented) and minor work clarifications. ...
>
> The lack of emissions and impact increases for amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to PSD permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company are operated. See Draft Guidance, page 11.

Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The changes will not increase emissions and do not involve any fundamental changes at the source. Very little review and no reanalysis of the original PSD permit application was needed. The changes also would not adversely impact air quality or change regulatory requirements.

Based on the Draft Guidance, it was clearly reasonable and appropriate for the Illinois EPA to have provided for public participation on the proposed changes to Permit 95010001. This is because, as stated in the passage from the Draft Guidance cited by this comment, this guidance directs permitting authorities to provide for public participation on administrative amendments to PSD permits in instances where the proposed changes are sufficiently important to necessitate public participation.[42] Given both the nature of the

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[40] In the Draft Guidance, USEPA characterizes minor changes as entailing changes to applications or issued permits and a certain amount of additional review by the permitting authority, but not constituting either a fundamental or significant change. Emissions or impacts increase as a result of minor changes but not above the significance level.

Significant and fundamental changes were characterized as increasing emissions above significance levels and/or changing the basic nature of an emissions source.

Minor, significant, and fundamental changes to PSD permits are collectively described as revisions of PSD permits, as distinguished administrative amendments of PSD permits. For revisions of permits, unlike administrative amendments, the Draft Guidance would require public participation prior to issuance of any revised permit. Draft Guidance, page 15.

[41] In this case, these changes to Permit 95010001 would not constitute "revisions," as these changes do not address changes in the method of operation or result in a net significant emissions increase. Because the changes would not constitute revisions, a public comment period was not needed for these proposed changes to Permit 95010001.

[42] **As noted by this comment, the Draft Guidance provides that there may be instances "where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation**

proposed changes and the public interest in this source, the Illinois EPA reasonably found that this was the case.

The project is "important" as it relates to a significant improvement in control of particulate emissions in an area that is designated nonattainment for $PM_{2.5}$. This improvement will be the result of an Agreement between US Steel and the Illinois EPA. While the overall objective in revising Permit 95010001 is simple, to accommodate this improvement, implementation has required consideration of a variety of changes to a number of conditions in the previous permit. The actual nature and reason for the individual changes to individual condition is not necessarily readily apparent or obvious.[43] This permitting action must also appropriately consider and be coordinated with the construction permit for the baghouse control system and the CAAPP permit that has been issued for the Granite City Works. Because of this complexity, it was reasonable to provide a public comment period on this proposed action.

It is also unquestioned that the Granite City Works has historically been of interest to the public, as demonstrated by the interest in other recent permitting actions for this source.[44] This further supports the decision of the the Illinois EPA to provide a public comment period on a draft of the planned revisions to Permit 95010001. Moreover, a public comment period is mandatory for the application for construction permit for the new baghouse control system, Application 11050006.[45] Because the public comment period for processing the revision to Permit 95010001 was combined with the public comment period for Application 11050006, it should not significantly affect the overall timing for permitting of the new baghouse control system.

29. USEPA has issued administrative amendments to PSD permits without providing for public participation.[46]

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is necessary." The example given for a case where public participation may be justified for an administrative amendment is a change in ownership of a "proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company were operated." Draft Guidance, page 11.

[43] The current changes to Permit 95010001 required the Illinois EPA to again, consider the requirements that were applicable to the BOFs in light of both the existing ESP and the new baghouse. In particular, the Illinois EPA had to evaluate the removal of operational requirements that had become outdated or would become infeasible with the new baghouse control system. The Illinois EPA's review also considered the removal of operational requirements for the BOFs that had been made obsolete by new regulatory requirements that now apply.

[44] Indeed, a petition is currently pending before USEPA for review of the CAAPP permit that the Illinois EPA issued for this source, *Petition Requesting that the Administrator Object to the Issuance of the Revised Title V/CAAPP Operating Permit for the US Steel Granite City Works Facility*, dated August 16, 2011. USEPA is currently engaged in preparing a response to this petition, with the deadline for USEPA to complete its response is currently December 3, 2012. That planned action related to the CAAPP permit for this source may be relevant as provisions of the revised PSD permit are Title I requirements that must be transferred into and included in the CAAPP permit.

[45] A public comment is mandatory on the application for the construction permit for the new baghouse control system as part of the Integrated Processing of that application, whereby the construction permit that is issued would authorize certain changes to the CAAPP permit for the Granite City Works by administrative amendment.

[46] For example, in 2008, Hovensa requested the removal of provisions for rolling averages from the CO emission limits for certain emission units in its PSD permit, since continuous emissions monitoring was not required, making rolling averages impractical. USEPA agreed with Hovensa, concluding that "there is no benefit in requiring compliance based on rolling averages." USEPA revised the PSD permit accordingly, further explaining "[. . .these requested changes will not result in any increase in emissions or cause any adverse air quality impacts. Therefore, EPA is approving these revisions administratively." (Letter to K. Antoine, Environmental Director, Hovensa, LLC, from B. Finazzo, Director, Division of Environmental Planning and Protection, USEPA, Region II, October 13, 2008.)

The fact USEPA has made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the specific circumstances of this action. As already explained, the Illinois EPA's decision to hold a public comment period considered the entirety of circumstances for this requested permit revision.[47]

30. State and local permitting authorities have also approved administrative amendments to PSD permits.[48, 49]

The fact that state and local permitting authorities may have made revisions to PSD permits administratively, without providing for public participation, shows that this may be appropriate in certain cases. However, it does not show that the procedures used by the Illinois EPA for the revision of Permit 95010001 were not appropriate given the particular circumstances in this case.[50]

31. In the Project Summary, Footnote 13, the Illinois EPA stated that the changes to Permit 95010001 are being processing separately from the processing of the baghouse construction permit in order to subject the changes to Permit 95010001 "to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124…." Although 40 CFR 124.1 indicates that Part 124 contains USEPA's "procedures for issuing, modifying, revoking and reissuing, or terminating all . . . PSD . . . 'permits' . . . ," Part 124 does not actually include procedures for revising PSD permits. In fact, 40 CFR 124.5(g)(1) is "Reserved for PSD Modification Provisions." Thus, Part 124 arguably does not apply to processing changes to PSD permits.

The observation made in this comment provides legal support for the administrative judgment that permitting authorities currently exercise in practice with respect to

---

[47] **Incidentally, the changes to the PSD permit for the Hovensa facility, which was cited in this comment, merely entailed the removal of provisions for 365-day rolling averaging from the CO limits for certain units at this facility. As such, the nature and effect of these changes is readily apparent. Without annual averaging, the stringency of the CO limits was, in fact, increased, with compliance with limits now required on a short-term basis, rather than on a long-term basis.**

[48] For example, a Nebraska facility obtained an administrative amendment to its PSD permit to extend compliance dates for new control equipment. In issuing this administrative amendment, the Nebraska Department of Environmental Quality (NDEQ) stated, "[t]he emissions and regulatory requirements for this facility will not change due to this modification." (Administrative Amendment to Prevention of Significant Deterioration Construction Permit for Abengoa Bioenergy Corporation, Nebraska Department of Environmental Quality, January 21, 2004.)

[49] In March 2012, in its Permit Evaluation and Statement of Basis for Minor Revision to the Major Facility Review Permit for Los Medanos Energy Center, LLC, Facility No. B1866, the Bay Area Air Quality Management District (BAAQMD) referenced USEPA's Draft Guidance, explaining that the change to the PSD permit for the Medanos Energy Center was considered administrative. In particular, on page 6 and 7 of this document, the BAAQMD stated, "The facility received an Authority to Construct and a PSD permit on 9/10/99. … The changes to the changes in clearances in the compressor section, installation of the dry Low NOx combustors, and change out of the exhaust gas path components are considered an administrative change under the 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The scope of these changes will not increase permitted emissions of any PSD pollutants (e.g. NO_x, CO, PM_{10}, $PM_{2.5}$, VOC, Lead, Fluorides, Sulfuric Acid Mist, Hydrogen Sulfide, Total Reduced Sulfur) and will not require any changes to permit conditions established during the original PSD permitting action. PSD does not apply to this permitting action."

[50] **Incidentally, with respect to the permitting action by the NDEQ cited by this comment, the Illinois EPA could not find an "administrative amendment" issued to Abengoa Bioenergy on January 21, 2004 that extended certain compliance dates in an issued PSD permit. Rather, the Illinois EPA found a permit issued on this date to Abengoa Bioenergy for modifications to this source, for which the draft permit had been subject to public participation. (Prevention of Significant Deterioration (PSD) Construction Permit for Abengoa Bioenergy Corporation, NDEQ, January 21, 2004.)**

procedures that are used for processing revisions to PSD permits, including their reliance on USEPA's Draft Guidance. As USEPA has not codified the appropriate procedures for processing various types or classes of revisions to PSD permits, permitting authorities must exercise administrative judgment when selecting the appropriate procedure to use when processing a particular application for revisions to a PSD permit.

32. Based on the Draft Guidance, the Illinois EPA should have treated the requested changes to Permit 95010001 as administrative amendments, without holding a public comment period. The requested changes result in no emissions increase at the source and no fundamental changes at the source. Very little review, if any, and no reanalysis of the original application, was necessary. The proposed changes in this case also would not increase emissions, adversely impact air quality or change any emissions or regulatory requirements. Accordingly, the proposed changes should have been made by administrative amendment.

As already discussed, the Illinois EPA does not disagree with the classification of the changes to Permit 95010001 as "administrative amendments" under the Draft Guidance. However, this guidance still directs permitting authorities to exercise discretion to provide for public participation for administrative amendments to PSD permits in instances where it may be warranted. More generally, irrespective of the Draft Guidance, the Illinois EPA had the authority and duty to appropriately consider whether public participation should be provided for the proposed changes to Permit 95010001. Given the circumstances of the proposed changes to this permit, including the nature of the changes and the public's previous interest in this source, the Illinois EPA reasonably elected to provide for public participation on a draft of the revised permit.

FOR ADDITIONAL INFORMATION

Questions about the permit decision should be directed to:

Bradley Frost, Community Relations Coordinator
Illinois Environmental Protection Agency
Office of Community Relations
1021 North Grand Avenue, East
P.O. Box 19506
Springfield, Illinois 62794-9506

217-782-7027 Desk line
217-782-9143 TDD
217-524-5023 Facsimile

brad.frost@illinois.gov

ATTACHMENT 1: LISTING OF SIGNIFICANT CHANGES BETWEEN THE DRAFT PERMIT AND THE ISSUED PERMIT

THIS STILL NEEDS TO BE DEVELOPED!

Kras, Kim

From: Frost, Brad
Sent: Tuesday, May 21, 2013 9:06 AM
To: Kras, Kim
Cc: Carter, Sally
Subject: FW: Notice Letter - USS

Brad Frost
Office of Community Relations
Illinois EPA
1021 North Grand Avenue, East
PO Box 19506
Springfield, IL 62794-9506
217/782-7027
217/524-5023 fax
brad.frost@illinois.gov

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From: Carter, Sally
Sent: Monday, December 03, 2012 3:57 PM
To: Romaine, Chris
Cc: Frost, Brad
Subject: Notice Letter - USS

Who has it and can I see it?

Illinois EPA FOIA Exemption Reference Sheet

R009783 SID: 23108

Agency ID: 170000125683 Media File Type AIR
Bureau ID: 119813AAI
Site Name: US Steel Granite City
Site Address1: 1951 State St
Site Address2: Granite City Div
Site City: Granite City State: IL Zip: 62040-

This record has been determined to be partially or wholly exempt from public disclosure

Exemption Type:

Exempt in Whole

Exempt Doc #: 129 **Document Date:** 12/2 /2012 **Staff:** JRM

Document Description: MEMO: ROMAINE TO CARTER W/ATTACHMENT

Category ID: 03L **Category Description:** AIR PERMIT - OPERATING **Exempt Type:** Exempt in Whole

Permit ID: **Date of Determination:** 8 /23/2013

Kras, Kim

Subject: reschedule meeting covering US Steel PSD
Location: permit section conference room

Start: Tue 7/31/2012 2:00 PM
End: Tue 7/31/2012 3:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Smith, Kevin L.
Required Attendees: Romaine, Chris; Carter, Sally; David Ogulei
Optional Attendees: Schnepp, Jason; Bakowski, Ed

All,

Sorry, David had a conflict with the earlier time so we're trying to set up a new tentative meeting time of 2pm for the same day.

Please note, this is **tentative** meeting time until we know for sure if Chris can make it so please wait to respond if this time doesn't work for you until I hear back from Chris, at which time I'll let all parties know if Chris can make it or not before we continue the rescheduling game. Thanks

Kevin

p.s.
David, I still need a number where I can reach you for the meeting.

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Kras, Kim

Subject:	Canceled: US Steel PSD emission reduction permit
Location:	permit section conference room
Start:	Tue 7/31/2012 10:30 AM
End:	Tue 7/31/2012 11:30 AM
Show Time As:	Free
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Smith, Kevin L.
Required Attendees:	David Ogulei; Romaine, Chris; Carter, Sally
Optional Attendees:	Schnepp, Jason; Bakowski, Ed
Importance:	High

To All,

David O. would like to discuss his intentions to file written comments on the US Steel "PSD Production Increase Permit." ; one of the permits recently sent to notice for the emissions reduction project at US Steel.
Do to scheduling conflicts the first possible time for all necessary personal to attend this call would be July 31st. However, it is unknown whether Chris Romaine will be back and available for this meeting at this time. Therefore it is being scheduled as tentative. If it turns out that Chris is unavailable at the proposed time I will schedule a new date and time.

David, please include in your response a number at which I can reach you for this call.

Thank You

Kevin Smith

Kras, Kim

From: Romaine, Chris
Sent: Tuesday, July 24, 2012 1:26 PM
To: Smith, Kevin L.
Subject: Accepted: reschedule meeting covering US Steel PSD

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Kras, Kim

From: David Ogulei [Ogulei.David@epamail.epa.gov]
Sent: Friday, July 20, 2012 11:29 AM
To: Smith, Kevin L.
Subject: Accepted: reschedule meeting covering US Steel PSD

Description.htm Comments.htm

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Kras, Kim

From: Smith, Kevin L.
Sent: Wednesday, May 23, 2012 10:49 AM
To: Carter, Sally
Subject: RE: PSD Permit Change Application

No.

From: Carter, Sally
Sent: Wednesday, May 23, 2012 10:47 AM
To: Smith, Kevin L.
Cc: Romaine, Chris
Subject: RE: PSD Permit Change Application

Was there a mention of the removal of condition 38 from the permit somewhere within the application?

From: Smith, Kevin L.
Sent: Wednesday, May 23, 2012 10:44 AM
To: Carter, Sally
Subject: RE: PSD Permit Change Application

Sally,

Found a couple things that may or may not be needed
On the signature block of the 199 form there wasn't a date
On the cross reference table there was no mention of the removal of condition 38 from the permit (testing)

I'm trying to dig up an old electronic copy of the permit to make sure that all the comments they included in the cross reference table make sense...the conditions are removed from the new draft so hard to verify everything claimed.

Otherwise it looks good
I'll let you know once I've completed a review of the original permit and compared it to the cross reference table.

Kevin

From: Carter, Sally
Sent: Wednesday, May 23, 2012 9:48 AM
To: Smith, Kevin L.
Cc: Romaine, Chris
Subject: FW: PSD Permit Change Application

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Here you go. Let us know if you think we need anything else.

From: Jason K Braxton [mailto:JKBraxton@uss.com]
Sent: Monday, May 21, 2012 3:24 PM
To: Carter, Sally
Cc: David W Hacker; Romaine, Chris
Subject: PSD Permit Change Application

Sally,

PSD permit change application attached. Check will be sent with hardcopy in the mail.

Lets us know if you need anything else.

Thanks

-Jason

Jason K. Braxton
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200
Pittsburgh, PA 15222-4211
Tel: (412) 433-6544-office
Tel: (205) 296-5093-mobile
Fax: (412) 433-5920 fax
jkbraxton@uss.com

Romaine, Chris

From: Medina, Rachel [RMedina@atg.state.il.us]
Sent: Friday, May 11, 2012 3:14 PM
To: Carter, Sally; Romaine, Chris
Subject: FW: USS/IEPA/AGO Conf. Call Follow-Up Comments

Sally and Chris,

Here are the comments promised by U.S. Steel per our call earlier in the week.

Rachel R. Medina, AAG
Office of the Attorney General
Environmental Bureau
Phone: 217-782-9031

[illegible] confidential [illegible] electronic mail message, including any attachments, is for the [illegible] recipient [illegible] confidential [illegible] privileged or otherwise protected or exempt from disclosure under applicable law. If you are not a [illegible] recipient, [illegible] you are named [illegible] you received this e-mail in error, please notify the sender immediately by telephone or return e-mail and promptly delete this e-mail and [illegible] attachments and copies thereof from your system. If you are not the intended recipient, please be aware that [illegible] distribution, dissemination, disclosure or other use of this e-mail and any attachments is unauthorized and prohibited. Your receipt of this message is not intended to waive any applicable privilege or claim of confidentiality, [illegible] prohibited or unauthorized disclosure is not binding on the sender or the Office of the Illinois Attorney General. Thank you for your cooperation.

From: Monica T. Rios [mailto:mrios@hddattorneys.com]
Sent: Friday, May 11, 2012 3:02 PM
To: Medina, Rachel
Cc: Katherine D. Hodge; David W Hacker (DWHacker@uss.com)
Subject: USS/IEPA/AGO Conf. Call Follow-Up Comments

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Rachel, as we discussed earlier this week, please see our comments below regarding several issues. If you have any questions, please let us know. Thanks, Monica

NESHAP/Shakedown

During our conference call on May 9, an issue was raised concerning whether the Iron and Steel MACT allows for a shakedown period for the installation of a control device. Based on review of USEPA guidance, it appears that the NESHAP regulations intend for a shakedown period after the installation of a control device.

In a rulemaking adopting regulations governing the construction, reconstruction, or modification of major sources of HAPs, USEPA stated in regards to Section 63.43(k), which requires that the permitting authority establish compliance dates for MACT:

> For constructed and reconstructed major sources subject to a "new source MACT" level of control, compliance upon startup is required. Some commenters requested that compliance be required by the date 180 days after startup to allow for a "shakedown" period for controls. However, sources subject to this rule are also subject to the relevant requirements of subpart A of this part (the general provisions for part 63), including compliance requirements. Since subpart A does not require the first performance test until 180 days after startup, the EPA believes that a "shakedown" period for controls is already
> accounted for through subpart A.

61 FR 68384, 68396 (Dec. 27, 1996) (Emphasis added.) In addition, in a separate rulemaking, USEPA stated in regards to performance test deadlines:

> Many commenters said that sources should be allowed more than 120 days from startup or other triggering milestones to conduct a performance test. Most suggested 180 days as a more appropriate time period. Hazardous air pollutant

performance testing is perceived to be more complicated than performance testing for criteria pollutants. Additional argument is that the part 60 general provisions (§60.8(a)) provide 180 days in which to conduct performance tests after startup and that the part 63 requirements should be consistent.

The Agency agrees that, in many cases, 180 days to conduct performance tests may be necessary, and there is also some merit in having the performance testing deadlines in parts 60 and 63 be consistent. Therefore, the EPA has modified §63.7(a)(2) to set performance test deadlines within 180 days of the effective date of the relevant standards, the initial startup date, or the compliance date, as applicable.

59 FR 12408, 12424 (Mar. 16, 1994).

In terms of the baghouse construction permit, the current draft includes the following provision:

Following completion of the shakedown period for the affected BOPF baghouse system, the emissions of particulate matter (PM) from the affected BOPF baghouse, as would be measured by USEPA Method 5, 5D or 17, shall not exceed 0.005 grains per dry standard cubic foot (gr/dcsf).

Incorporating this condition into the CAAPP permit revision allows for operation of baghouse during a shakedown period and requires compliance with the 0.005 gr/dcsf following shakedown. Since the construction permit allows for a shakedown period, the CAAPP permit must also account for such a period.

Timing of Administrative Amendment

As discussed during the call, US Steel agrees that the PSD permit should be sent to public notice and subsequently issued by IEPA prior to the issuance of the baghouse construction permit. Once the appeal period for the PSD permit lapses, Illinois EPA should issue the construction permit. Upon issuance of the construction permit, US Steel will submit an administrative amendment to incorporate the changes into the CAAPP permit. US Steel will submit the AA as soon as possible after the issuance of the construction permit in order to effectuate a smooth transition. As previously discussed, the statute, regulations, and the most recent MOA between IEPA and USEPA do not require that construction of the baghouse commence prior to the submittal of the AA.

Proposed Revisions to Footnote 14 in PSD Permit Project Summary

As discussed, US Steel requests that footnote 14 be revised as follows:

Also note that in the case of ~~As applied to the~~ Granite City Works, ~~a further concern is posed by the superficial similarity of operational requirements of the NESHAP, 40 CFR 63 Subpart FFFFF, and of the construction permit. T~~The similarity of the operational requirements of the NESHAP, 40 CFR 63 Subpart FFFFF and in 1996 the construction permit ~~acts to~~ make implementation and oversight of both sets of ~~those~~ requirements unnecessarily more difficult and resource intensive since they both serve to ensure proper operation of the capture systems and control devices. ~~To the extent that the operational requirements of NESHAP serves to address and satisfy relevant compliance concerns for the BOP furnaces at the Granite City Works, e.g., proper operation of capture systems and control devices, it~~ It is preferable for only the operational requirements of the NESHAP to be applicable, rather than both NESHAP requirements and permit based requirements, since the NESHAP served to address and satisfy relevant compliance concerns for the BOP furnaces at the Granite City Works, e.g., proper operation of capture systems and control devices. Permit based operational requirements should only be imposed as ~~they are~~ necessary to address particular aspects of compliance that are not adequately addressed by the NESHAP ~~and those requirements can be justified based on the need to address those other aspects of compliance~~.

Accepting all changes shown above, footnote 14 states:

Also note that in the case of Granite City Works, the similarity of the operational requirements of the NESHAP, 40 CFR 63 Subpart FFFFF and in the 1996 construction permit make implementation and oversight of both sets of requirements unnecessarily more difficult and resource intensive since they both serve to ensure proper operation of the capture systems and control devices. It is preferable for only the operational requirements of the NESHAP to be applicable, rather than both NESHAP requirements and permit based requirements, since the NESHAP serves to address and satisfy relevant compliance concerns for the BOP furnaces at the Granite City Works, e.g., proper operation of capture systems and control devices. Permit based operational requirements should only be imposed as necessary to address particular aspects of compliance that are not adequately addressed by the NESHAP.

Background/Project Description

US Steel has reviewed the sections for consistency, and we have no additional comments beyond those provided in the previous markup.

Monica T. Rios
mrios@hddattorneys.com
HODGE DWYER & DRIVER
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900
(217) 523-4948 (Facsimile)

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Kras, Kim

From: Carter, Sally
Sent: Wednesday, May 23, 2012 10:47 AM
To: Smith, Kevin L.
Cc: Romaine, Chris
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United States Steel Corporation
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United States Steel Corporation
Penn Liberty Plaza I

1350 Penn Avenue - Suite 200
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Cc: Romaine, Chris
Subject: FW: PSD Permit Change Application
Attachments: Signed Cover Page 5-21-12.pdf; 197-fee signed.pdf; 199-caapp signed.pdf; Cross reference tablenew.pdf

Here you go. Let us know if you think we need anything else.

From: Jason K Braxton [mailto:JKBraxton@uss.com]
Sent: Monday, May 21, 2012 3:24 PM
To: Carter, Sally
Cc: David W Hacker; Romaine, Chris
Subject: PSD Permit Change Application

Sally,

PSD permit change application attached. Check will be sent with hardcopy in the mail.

Lets us know if you need anything else.

Thanks

-Jason

Jason K. Braxton
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200
Pittsburgh, PA 15222-4211
Tel: (412) 433-6544-office
Tel: (205) 296-5093-mobile
Fax: (412) 433-5920 fax
jkbraxton@uss.com

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

May 21, 2012

CERTIFIED MAIL NO 7011 1150 0001 0452 9595
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield Illinois 62794

Subject: U.S. Steel - Granite City Works, Granite City, Ill
Facility ID No. 119813AAI
Application for Revision to Construction Permit #95010001

United States Steel Corporation-Granite City Works (U. S. Steel) is hereby requesting a revision to construction permit #95010001 originally issued in 1996. The principal purpose of the requested revision to this permit is to accommodate an emission reduction project for particulate emissions that U. S. Steel is planning for the two basic oxygen process (BOP) furnaces at the Granite City facility. This emission reduction project is the subject of a separate application for a construction permit, Application #11050006. As discussed in the application materials, the requested revisions to Construction Permit #95010001 would remove certain operational requirements for the BOP furnaces that would no longer be appropriate or practicable with the planned project. The requested revisions to Construction Permit #95010001 would also replace obsolete requirements for the BOP Shop with more stringent requirements adopted by USEPA pursuant to the promulgation of MACT standards. While the project is an emissions reduction project, the requested revisions to the permit would not affect the applicable emission standards and emission limits that apply to the BOP furnaces. Please find the following documents included with this application:

1. 199-CAAPP form
2. 197-CAAPP form-Check for $500
3. Cross Reference Table documents
4. Construction Permit #95010001

If you have any questions or require any additional information, please contact Jason Braxton at JKBraxton@uss.com or by phone at 412-433-6544 or contact Bryan Kresak at BMKresak@uss.com or by phone at 618-451-3391.

Sincerely,

Michael Terry
Division Manager, Steelmaking
United States Steel Corporation
Granite City Works

Illinois Environmental Protection Agency

Bureau of Air • 1021 North Grand Avenue East • P.O. Box 19506 • Springfield • Illinois • 62794-9506

FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION

FOR AGENCY USE ONLY

ID Number: _____ Permit #: _____

☐ Complete ☐ Incomplete Date Complete: _____

Check Number: _____ Account Name: _____

This form is to be used to supply fee information that must accompany all construction permit applications. This application must include payment in full to be deemed complete. Make check or money order payable to the Illinois Environmental Protection Agency, Division of Air Pollution Control - Permit Section at the above address. Do NOT send cash. Refer to instructions (197-INST) for assistance.

Source Information

1. Source Name: United States Steel Corporation-Granite City Works
2. Project Name: Permit #95010001 Change for BOP ER project
3. Source ID #: (if applicable) 119813AA1
4. Contact Name: Bryan Kresak
5. Contact Phone #: (618) 451-3391

Fee Determination

6. The boxes below are automatically calculated.

Section 1 Subtotal $0.00 + Section 2, 3 or 4 Subtotal $500.00 = $500.00 Grand Total

Section 1: Status of Source/Purpose of Submittal

7. Your application will fall under only one of the following five categories described below. Check the box that applies. Proceed to applicable sections. For purposes of this form:

- **Major Source** is a source that is required to obtain a CAAPP permit.
- **Synthetic Minor Source** is a source that has taken limits on potential to emit in a permit to avoid CAAPP permit requirements (e.g.,FESOP).
- **Non-Major Source** is a source that is not a major or synthetic minor source.

☑ Existing source without status change or with status change from synthetic minor to major source or vice versa. Proceed to Section 2.

☐ Existing non-major source that will become synthetic minor to major source. Proceed to Section 4.

☐ New major or synthetic minor source. Proceed to Section 4.

☐ New non-major source. Proceed to Section 3.

☐ AGENCY ERROR. If this is a timely request to correct an issued permit that involves only an agency error and if the request is received within the deadline for a permit appeal to the Pollution Control Board. Skip Sections 2, 3 and 4. Proceed directly to Section 5.

$0.00 Section 1 Subtotal

This agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 ET SEQ. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Section 2: Special Case Filing Fee

8. **Filing Fee.** If the application only addresses one or more of the following, check the appropriate boxes, skip Sections 3 and 4 and proceed directly to Section 5. Otherwise, proceed to Section 3 or 4 as appropriate.

☐ Addition or replacement of control devices on permitted units.

☐ Pilot projects/trial burns by a permitted unit

☐ Land remediation projects $500.00

☐ Revisions related to methodology or timing for emission testing

☑ Minor administrative-type change to a permit

Section 3: Fees for Current or Projected Non-Major Sources

9. This application consists of a single new emission unit or no more than two modified emission units. ($500 fee)

10. This application consists of more than one new emission unit or more than two modified units. ($1,000 fee)

11. This application consists of a new source or emission unit subject to Section 39.2 of the Act (i.e., Local Siting Review); a commercial incinerator or a municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or an emission unit designated as a complex source by agency rulemaking. ($15,000 fee)

12. A public hearing is held (see instructions). ($10,000 fee)

13. Section 3 subtotal. (lines 9 through 12 - entered on page 1) 13. $0.00

Section 4: Fees for Current or Projected Major or Synthetic Minor Sources

Application contains modified emission units only	14. For the first modified emission unit, enter $2,000.	
	15. Number of additional modified emission units = x $1,000.	
	16. Line 14 plus line 15, or $5,000, whichever is less.	16. $0.00
Application contains new and/or modified emission units	17. For the first new emission unit, enter $4,000.	
	18. Number of additional new and/or modified emission units = x $1,000.	
	19. Line 17 plus line 18, or $10,000, whichever is less.	19. $0.00
Application contains netting exercise	20. Number of individual pollutants that rely on a netting exercise or contemporaneous emissions decrease to avoid application of PSD or nonattainment area NSR = x $3,000.	20. $0.00
Additional Supplemental Fees	21. If the new source or emission unit is subject to Section 39.2 of the Act (i.e. siting); a commercial incinerator or other municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or one or more other emission units designated as a complex source by Agency rulemaking, enter $25,000.	
	22. If the source is a new major source subject to PSD, enter $12,000.	
	23. If the project is a major modification subject to PSD, enter $6,000.	
	24. If this is a new major source subject to nonattainment area (NAA) NSR, enter $20,000.	
	25. If this is a major modification subject to NAA NSR, enter $25,000.	
	26. If the application involves a determination of MACT for a pollutant and the project is not subject to BACT or LAER for the related pollutant under PSD or NSR (e.g., VOM for organic HAP), enter $5,000 per unit for which a determination is requested or otherwise required. x $5,000.	26. $0.00
	27. If a public hearing is held (see instructions), enter $10,000.	
28. Section 4 subtotal (line 16 and lines 19 through 28) to be entered on page1		28. $0.00

Section 5: Certification

NOTE: Applications without a signed certification will be deemed incomplete.

29. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the information contained in this fee application form is true, accurate and complete.

by: _____ Signature

Michael Terry
Typed or Printed Name of Signatory

Division MGR, Steelmaking - U. S. Steel GCW
Title of Signatory

5/21/13
Date

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Construction Permit Application for a Proposed Project at a CAAPP Source

For Illinois EPA use only
ID No.:
Appl. No.:
Date Rec'd:
Chk No./Amt:

This form is to be used to supply general information to obtain a construction permit for a proposed project involving a Clean Air Act Permit Program (CAAPP) source, including construction of a new CAAPP source. Detailed information about the project must also be included in a construction permit application, as addressed in the "General Instructions For Permit Applications," Form APC-201.

Proposed Project

1. Working Name of Proposed Project:
U.S. Steel Granite City Works BOF Secondary Emissions Control System

2. Is the project occurring at a source that already has a permit from the Bureau of Air (BOA)?
☐ No ☒ Yes If Yes, provide BOA ID Number: 1 1 9 8 1 3 A A 1

3. Does this application request a revision to an existing construction permit issued by the BOA?
☐ No ☒ Yes If Yes, provide Permit Number: 9 5 0 1 0 0 0 1

4. Brief Description of Proposed Project:
The principal purpose of the requested revision to this permit is to accommodate an emission reduction project for particulate emissions that U. S. Steel is planning for the two basic oxygen process (BOP) furnaces at the Granite City facility.

Source Information

1. Source name:* United States Steel Corporation - Granite City Works

2. Source street address:* 1951 State Street

3. City: Granite City	4. County: Madison	5. Zip code:* 62040

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.

6. Is the source located within city limits? ☒ Yes ☐ No
If no, provide Township Name: Granite City

7. Description of source and product(s) produced:	8. Primary Classification Code of source:
Integrated Iron and Steel Making Facility	SIC: 3312 or NAICS:

9. Latitude (DD:MM:SS.SSSS):	10. Longitude (DD:MM:SS.SSSS):
38 42' 1.2241"	90 8' 56.4272"

* Is information different than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Identification of Permit Applicant

1. Who is the applicant?	2. All correspondence to: (check one)
☒ Owner ☐ Operator	☒ Source ☐ Owner ☐ Operator

3. Applicant's FEIN:	4. Attention name and/or title for written correspondence:
25-1897152	Bryan Kresak/Environmental Director

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Owner Information*		
1. Name: United States Steel Corporation		
2. Address: 600 Grant Street		
3. City: Pittsburgh	4. State: PA	5. Zip code: 15219

* Is this information idifferent than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Operator Information (if different from owner)*		
1. Name United States Steel Corporation - Granite City Works		
2. Address: 1951 State Street		
3. City: Granite City	4. State: IL	5. Zip code: 62040

* Is this information different than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Technical Contacts for Application	
1. Preferred technical contact: (check one) ☒ Applicant's contact ☐ Consultant	
2. Applicant's technical contact person for application: Jason Braxton, Environmental Engineer	
3. Contact person's telephone number(s) 412-433-6544	4. Contact person's e-mail address: jkbraxton@uss.com
5. Consultant for application: None	
6. Consultant's telephone number(s): N/A	7. Consultant's e-mail address: N/A

Other Addresses for the Permit Applicant	
ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.	
1. Address for billing Site Fees for the source: ☒ Source ☐ Other (provide below):	
2. Contact person for Site Fees: Bryan Kresak	3. Contact person's telephone number: 618-451-3391
4. Address for Annual Emission Report for the source: ☒ Source ☐ Other (provide below):	
5. Contact person for Annual Emission Report: Bryan Kresak	6. Contact person's telephone number: 618-451-3391

Review Of Contents of the Application	
NOTE: ANSWERING "NO" TO THESE ITEMS MAY RESULT IN THE APPLICATION BEING DEEMED INCOMPLETE	
1. Does the application include a narrative description of the proposed project?	☒ Yes ☐ No
2. Does the application clearly identify the emission units and air pollution control equipment that are part of the project?	☒ Yes ☐ No
3. Does the application include process flow diagram(s) for the project showing new and modified emission units and control equipment, along with associated existing equipment and their relationships?	☒ Yes ☐ No
4. Does the application include a general description of the source, a plot plan for the source and a site map for its location?	☐ Yes ☐ No ☒ N/A* * Material previously provided
5. Does the application include relevant technical information for the proposed project as requested on CAAPP application forms (or otherwise contain all relevant technical information)?	☒ Yes ☐ No
6. Does the application include relevant supporting data and information for the proposed project as provided on CAAPP forms?	☒ Yes ☐ No
7. Does the application identify and address all applicable emission standards for the proposed project, including: State emission standards (35 IAC Chapter I, Subtitle B); Federal New Source Performance Standards (40 CFR Part 60)?	☒ Yes ☐ No
8. Does the application address whether the project would be a major project for Prevention of Significant Deterioration, 40 CFR 52.21?	☐ Yes ☐ No ☒ N/A
9. Does the application address whether the project would be a major project for "Nonattainment New Source Review," 35 IAC Part 203?	☐ Yes ☐ No ☒ N/A
10. Does the application address whether the proposed project would potentially be subject to federal regulations for Hazardous Air Pollutants (40 CFR Part 63) and address any emissions standards for hazardous air pollutants that would be applicable?	☐ Yes ☐ No ☒ N/A* * Source not major ☐ Project not major ☒
11. Does the application include a summary of annual emission data for different pollutants for the proposed project (tons/year), including: 1) The requested permitted emissions for individual new, modified and affected existing units*, 2) The past actual emissions and change in emissions for individual modified units* and affected existing units*, and 3) Total emissions consequences of the proposed project? (* Or groups of related units)	☐ Yes ☐ No ☒ N/A * The project does not involve an increase in emissions from new or modified emission units.
12. Does the application include a summary of the current and requested potential emissions of the source (tons/year)?	☒ Yes ☐ No ☐ N/A* * Applicability of PSD, NA NSR or 40 CFR 63 to the project is not related to the source's emissions.
13. Does the application address the relationships and implications of the proposed project on the CAAPP Permit for the source?	☒ Yes ☐ No ☐ N/A* * CAAPP Permit not issued
14. If the application contains information that is considered a TRADE SECRET, has it been properly marked and claimed and all requirements to properly support the claim pursuant to 35 IAC Part 130 been met? Note: "Claimed" information will not be legally protected from disclosure to the public if it is not properly claimed or does not qualify as trade secret information.	☐ Yes ☒ No ☐ N/A* * No information in the application is claimed to be a TRADE SECRET
15. Are the correct number of copies of the application provided? (See Instructions for Permit Applications, Form 201)	☒ Yes ☐ No
16. Does the application include a completed "FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION," Form 197-FEE, a check in the amount indicated on this form, and any supporting material needed to explain how the fee was determined?	☒ Yes ☐ No

Signature Block

Authorized Signature:

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete and that I am a responsible official for the source, as defined by Section 39.5(1) of the Environmental Protection Act.

BY: _____
AUTHORIZED SIGNATURE

Division MGR,Steelmaking-US Steel GCW
TITLE OF SIGNATORY

Michael Terry
TYPED OR PRINTED NAME OF SIGNATORY

_____
DATE

Attachment 1:

Summary of Proposed Revisions to Construction Permit 95010001

Proposed Revisions to Construction Permit 95010001			
Permit Condition	**Nature of Change**	**Description/Explanation**	**Related Condition in CAAPP Permit**
9(a) Opacity Observations for the BOF Shop	Remove	Requirement for observations of opacity of emissions from the BOF shop on at least a weekly basis. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the BOF shop pursuant to the CAAPP permit for the mill. In this regard, Condition 7.5.8(e)(i) of the current CAAPP permit (planned future Condition 7.5.8-1(a))) requires observations of opacity on five out of seven operating days until the new baghouse control system is in place for tapping emissions from the furnaces. Thereafter, the frequency of observations would be related to the level of opacity observed during preceding opacity observations, with opacity observations required on five of seven operating unless preceding observation show compliance by a clear margin. This is more stringent than Condition 9(a) of the construction permit. More generally, it is now appropriate for requirements for opacity observations for this BOF shop to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement and evolution of these requirements as part of the processing of CAAPP permits for the source. In addition, as changes to operational may occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit for the source) without having to separately revise this requirement in the historic construction permit.	7.5.8(e)(i)
9(b) Opacity Observations for the ESP	Remove	Requirement for observations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor on the ESP that exceeds two consecutive hours. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the ESP pursuant to the CAAPP permit. Periodic Monitoring will provide for regular review and appropriate refinement of monitoring requirement for the ESP as part the processing of the CAAPP permits for the mill. This conclusion is not altered by the fact that the relevant Periodic Monitoring provision in the CAAPP permit (Condition 7.5.8(e)(iii)/planned Condition 7.5.8-1(c)) is currently identical to this condition in the construction permit that would be removed. As changes to this requirement for opacity observation may	7.5.8(e)(iii)

R009805

		be appropriate in the future, such changes should be able to be made as part of consideration of Periodic Monitoring during the processing of the CAAPP permit without having to also process a revised construction permit to make related changes to that permit. Moreover, because continuous opacity monitoring is now required for the ESP by the NESHAP, an argument could be made that the identical requirement in the CAAPP permit should already be considered inappropriate or unnecessary. This is because it would provide for a departure from the monitoring explicitly required by the NESHAP.	
9(c) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. This requirement in the construction permit is now unnecessary and inaccurate. The procedures by which opacity is to be determined for purposes of various standards for opacity are also specified by those standards. For example, for purposes of the NESHAP, visible observations of opacity from the BOF shop are to be determined by an average of 12 readings, rather than 24 reading, as generally provided for by USEPA Method 9. For the ESP, continuous opacity monitoring is required. Condition 9(c) is misleading as it generally suggests that opacity of emissions shall be determined using the procedures in Method 9. Incidentally, the flaws in this condition of the construction permit have been addressed in the related condition in the current CAAPP permit (Condition 7.5.8(e)(iii)(b)/planned Condition 7.5.8-1(c)(ii)). That condition, specifying that opacity shall be determined by Method 9, only applies to determinations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor.	7.5.8(e)(iii)(B)
10 and Attachment A General Operating Procedures for the BOF	Remove	Requirement to follow certain operating procedures and requirements for the BOFs and the existing ESP control system, as detailed in Attachment A of the construction permit. This requirement in the construction permit is now unnecessary and inaccurate. First, the NESHAP now generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, detailed requirements for proper operation of the BOFs and ESP system should not be "predetermined" by the terms of a construction permit. Second, as Attachment A of the construction permit sets out detailed requirements, it will become outdated and obsolete as appropriate operating procedures for the BOF evolve and improve over time. The planned emission reduction project is simply another such change that has made the detailed operational requirements in Attachment A of the construction permit outdated. Moreover, as certain changes to the operational requirements for the BOFs may be appropriate in the future, such changes should be able to be made during the processing of the CAAPP permit without having to also act to revise the related requirements in the construction permit. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would serve to confirm that the Illinois EPA has already determined that this requirement is obsolete.	-

R009806

11 Flame Suppression for Tapping	Remove	Requirement for use of flame suppression for alloy addition. Use of flame suppression would become unnecessary when tapping is controlled by local capture hoods and a baghouse as part of the planned emission reduction project. This new equipment will provide better overall control of particulate emissions from tapping. Continued use of flame suppression would also act to reduce the capture efficiency of the new hoods. This is because the volume of a gas expands with temperature. Continued use of flame suppression would increase the temperature of the air in the area in which tapping occurs, acting to reduce the amount of air actually drawn in by the new capture hoods. Continued use of flame suprression would also pose a physical threat to the new capture system due to the higher temperature that would result and increased carryover of sparks into the ductwork. As a more general matter, an explicit requirement for use of flame suppression is not needed in the construction permit. First, the BOFs must be operated to comply with operating parameter limits pursant to the NESHAP. As the performance tests that set such limits are conducted with use of flame suprression, this emission control measure is appropriately considered an element of the operating parameter limit. This would not be the case only if a performance test showed compliance without use of flame suppression. Second, as other changes to control measures for tapping could occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit) without having to separately revise this requirement in the historic construction permit.	7.5.5-3(a)(ii)
12(a), (b)(i) and (c) Requirements for Minimum Set Points	Remove	Specific sets points for the ESP (i.e., minimum numerical requirements for the exhaust gas flow rate at the stack of the ESP) during different portions of the steel production cycle would be removed. When the new baghouse control system begins operating, these requirements would become outdated. The requirements that apply for tapping and charging or overlapping operation would cease to be relevant when tapping and charging are not controlled by the ESP. The requirement for refining when only a single furnace is operating would also cease to be relevant. When the new baghouse control system begins operation, the only gas flow from the ESP will be from the covers on the hoods and air flow associated with the refining step, without leakage from the charging hoods and associated ducts. Incidentally, the construction permit contemplated future changes to set points. Condition 12(c) allowed for the establishment of lower set points, requiring use of less aspiration air, based on a demonstration that a better level of control would occur. It also provided that the established set points would not apply during testing that was conducted for the purposes of revising set points. However, it did not address how such revised set point were to be approved or address future circumstances in which set points for certain modes of operation would no longer be appropriate. More generally, the existing requirements are made obsolete by the operating parameter limits for capture systems for the BOPFs that are established under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). These operating parameter limits more directly address operation of capture systems on BOPFs than the requirements that would be removed. This is because they address the operation of	7.5.6(h)(i) & (ii) and 7.5.5-3(b)(i)

R009807

		the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOPFs or their associated control systems. The installation of the new baghouse control system is only an example of such a change under the NESHAP, which will trigger a requirement to conduct additional performance testing to establish new operating parameter limit for both the new and enhanced capture systems for charging and tapping and the existing covers on the BOF vessels.	
12(b)"(iii)" Requirements for Staggered Operation	Remove	Operational requirements related to staggering of the oxygen blowing of the BOPFs, the charging of hot metal and alloy addition during tapping would be removed. This change would be made because the new baghouse control system will be designed with sufficient capacity to simultaneously control charging of one BOF and tapping of the other. Accordingly, staggering of these operational steps by the BOFs will no longer be necessary for the BOFs to comply with applicable emission standards. More generally, the existing requirements for staggered operation of the BOFs are made obsolete by the operational requirements for the BOFs under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). The NESHAP directly requires that the BOFs be operated in a manner that is consistent with that during a performance test in which compliance with applicable emission standards has been shown. As such, the NESHAP would preclude overlap of different steps in the operation of the two BOFs if performance testing has not demonstrated the ability to comply when such steps overlapped. As such, only the most basic restriction on overlapping operation of the BOFs would be maintained, consistent with the construction permit for the baghouse control system, which does not allow simultaneous oxygen blowing of both vessels unless approved by a separate permit. This approach recognizes the current capacity of the control system for oxygen blowing (refining), which is currently insufficient for the oxygen blowing of both furnace vessels simultaneously, while also providing for possible improvements to the control system in the future.. Lastly, the operating parameter limits under the NESHAP more directly address operation of capture systems for secondary emissions from BOPFs than the requirements that would be removed. As related to the manner of operation, the NESHAP addresses the operation of the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack of the particulate control device. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOFs or their associated control systems. The installation of the new baghouse control system is such a change under the NESHAP, which will trigger a requirement to conduct further performance testing to establish new operating parameter limits for the new and enhanced capture systems for charging and tapping.	7.5.5-3(a)(i)

R009808

12(d) and (f) Requirements for Monitoring of ESP Stack Gas Flow Rate	Remove	Requirements for operational monitoring for ESP stack flow rate. This change would be made because the underlying requirements for minimum stack gas flow rate would be removed. Monitoring of individual capture systems and the air flow into the ESP would more directly address proper operation of the ESP control system. See also above discussion for Conditions 12(b)"(iii)."	7.5.8(d)(ii) & (iii)
12(e) Recordkeeping for ESP Flow Rate for Charging, Refining and Tapping	Remove	Requirement that records for ESP stack gas flow rate be kept for charging, refining and tapping. This requirement will become obsolete with the baghouse control system because the ESP would no longer be used to control charging and tapping. More generally, it is now appropriate for operational monitoring requirements for the BOFs, including monitoring requirements for the capture systems for the BOFs, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements as part the processing of CAAPP permits for the source.	7.5.9(b)(vii)
13(a) and (c) Operational Monitoring for Waste Gas Suction for the ESP System	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping. More generally, operational monitoring requirements for the BOFs, including monitoring related to the capture systems, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements.	7.5.8(d)(i) & (i)(B)
13(b) Role of the Operational Monitoring for Waste Gas Suction for the ESP	Remove	Provision that the waste gas suction monitor for the ESP will be used to ensure that sufficient draft is maintained in the capture systems on the BOFs so as to maximize capture of emissions. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping.	7.5.8(d)(i)(A)
13(d) Operational Monitoring for Static Pressure in the ESP Downcommer Duct	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle would be removed. This change would be made because, with the baghouse control system, the ESP would no longer be used to control charging and tapping. In addition, this monitoring requirement is made obsolete by the NESHAP, which now provides a comprehensive approach to operational monitoring for capture system for secondary emissions from BOFs.	7.5.8(d)(i)(C)
14(a and (b) Requirements for Visual Inspections of the Capture Systems in the ESP Control System	Remove	Requirements for regular inspections of capture systems associated with the ESP. This requirement is made obsolete by the work practices required by the NESHAP. Monthly inspection of the equipment that is important to the performance of the total capture system and repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. In addition, when the new baghouse system begins operation, these requirements would no longer address the existing capture systems for charging.	7.5.8(d)(iv)(A) & (B)
14(c)	Remove	Requirement for prompt repair of leaks or areas otherwise noted to be in need of repair.	7.5.8(d)(iv)(C)

R009809

Requirement for Prompt Repair of Leaks and Other Defects		This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) Repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. This would require that timely maintenance be performed as necessary to maintain compliance.	
15(a) Requirement to Operate, Maintain and Repair the BOF ESP to Comply with the Permit	Remove	Requirement to generally operate, maintain and repair the ESP to comply with this construction permit. This requirement is obsolete as it would inappropriately impose a redundant obligation to comply with other requirements in the construction permit. As those other requirements would be present and applicable, as reflected in an appropriate permit for the Granite City Works, US Steel would already legally be obligated to take necessary actions to comply with those requirements. To the extent that US Steel was generally being required to properly operate and maintain the ESP, that requirement should exist independent of the other conditions of the permit. In this regard, this obligation for good air pollution control practice is now explicitly required by the NESHAP.	7.5.5-3(b)(ii)
15(b) Requirement for an Adequate Inventory of Spare Parts	Remove	Requirement to maintain an adequate inventory of spare parts for the ESP. This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. Moreover, the requirement does not directly address maintenance of the ESP as should facilitate proper operation of the ESP. Rather, a separate requirement would be established related to the ESP that is not directly related to either maintenance or operation of the ESP.	
16 Requirement for Written Operating Procedures for the BOF ESP	Remove	Requirement to maintain written operating procedures This requirement in the construction permit is now unnecessary. The NESHAP now generally requires operation of the BOFs in accordance with good air control practice with preparation and implementation of a written operation and maintenance plan for the BOFs. (See 40 CFR 63.7800(b).)	
17 Required Recordkeeping for the ESP	Remove	Requirements for keeping certain records related to the BOFs and the existing ESP control system would be removed, including records for: (i) Operating time of the BOFs; (ii) Operating time of the capture systems and certain operating data for these systems; (iii) Operating times of the ESP and certain performance data for the ESP; and (iv) Inspection and maintenance records for the existing capture systems and the ESP. The recordkeeping requirement would be removed because they have been replaced by requirements that more directly address proper operation of the ESP, including recordkeeping requirements of the NESHAP. In particular, records for "operating times" of the BOFs, the ESP capture systems and the ESP itself do not directly address lapses in control of particulate emissions, i.e., periods when a BOF operates without proper capture and control of emissions. The NESHAP, 40 CFR 63.7834, includes recordkeeping for preventative maintenance that is performed and corrective actions that are taken.	7.5.9(b)(i) thru (iv)

R009810

18 and Table 2	Revise	A parenthetical phrase would be removed from this condition, which contains permit limits for the emissions of the ESP. The phrase indicates that the emissions of the ESP include emissions from charging, refining and tapping of the BOPF. The phrase would be removed because it would no longer be accurate when charging and tapping emissions are controlled by the new baghouse control system.	-
Note (following Condition 18)	Remove	Explanatory note describing the steel production cycle would be removed. The note would be removed because it is inconsistent with the definition of the steel production cycle in the NESHAP, 40 CFR 63.7852, which indicates that the steel production ends after slag is removed from the BOF vessel, rather than at the end of the tapping process.	-
33(a) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. See discussion for Condition 9(c), which is essentially identical to Condition 33(a).	-
33(b) Requirement for Personnel to Conduct Opacity Observations	Remove	Requirement that the source have "...at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit." This requirement is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from various operations at the Granite City Works. The Periodic Monitoring established by the CAAPP permit directly addresses the opacity observation that the source must conduct or have conducted. By contrast, this requirement of the construction only indirectly addresses opacity observations, as it deals with the staffing that must be available to conduct such observations. Moreover, as such, it could be construed to provide for a failure to actually conduct opacity observations if US Steel had otherwise met with this requirement related to availability of personnel for such observations. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would simply confirm that the Illinois EPA has already determined this requirement to be obsolete.	-
37 Coordination with Other Existing Permits	Revise	Provision would be revised to further define "existing operating permits" as permits issued for the Granite City Works as of January 15, 1996. This change would be made so that the issuance of a revised construction permit would not affect the hierarchy of permits for the source based on their chronology. In particular, the construction permit would only supersede operating permits that were issued before the original issuance of the construction permit and not subsequent operating permits issued for the source, including the CAAPP permits.	-
39 Requirement for Reporting of Deviations	Remove	Requirement for reporting deviations from the construction permit. This requirement is obsolete because reporting of deviations is now a routine element of CAAPP permits, including the CAAPP permit for the Granite City Works.	-

R009811

Kras, Kim

From: Romaine, Chris
Sent: Tuesday, May 22, 2012 12:02 PM
To: Smith, Kevin L.
Subject: FW: PSD Permit Change Application
Attachments: Signed Cover Page 5-21-12.pdf; 197-fee signed.pdf; 199-caapp signed.pdf; Cross reference tablenew.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

fyi

From: Jason K Braxton [mailto:JKBraxton@uss.com]
Sent: Monday, May 21, 2012 3:24 PM
To: Carter, Sally
Cc: David W Hacker; Romaine, Chris
Subject: PSD Permit Change Application

Sally,

PSD permit change application attached. Check will be sent with hardcopy in the mail.

Lets us know if you need anything else.

Thanks

-Jason

Jason K. Braxton
Environmental Affairs
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue - Suite 200
Pittsburgh, PA 15222-4211
Tel: (412) 433-6544-office
Tel: (205) 296-5093-mobile
Fax: (412) 433-5920 fax
jkbraxton@uss.com

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 23 2013
REVIEWER JRM

Granite City Works
United States Steel
20th & State Streets
Granite City, Illinois 62040
(618) 451-3456

May 21, 2012

CERTIFIED MAIL NO 7011 1150 0001 0452 9595
RETURN RECEIPT REQUESTED

Mr. Edwin C. Bakowski, P.E.
Manager of Permit Section
Division of Air Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield Illinois 62794

Subject: U.S. Steel - Granite City Works, Granite City, Ill
Facility ID No. 119813AAI
Application for Revision to Construction Permit #95010001

United States Steel Corporation-Granite City Works (U. S. Steel) is hereby requesting a revision to construction permit #95010001 originally issued in 1996. The principal purpose of the requested revision to this permit is to accommodate an emission reduction project for particulate emissions that U. S. Steel is planning for the two basic oxygen process (BOP) furnaces at the Granite City facility. This emission reduction project is the subject of a separate application for a construction permit, Application #11050006. As discussed in the application materials, the requested revisions to Construction Permit #95010001 would remove certain operational requirements for the BOP furnaces that would no longer be appropriate or practicable with the planned project. The requested revisions to Construction Permit #95010001 would also replace obsolete requirements for the BOP Shop with more stringent requirements adopted by USEPA pursuant to the promulgation of MACT standards. While the project is an emissions reduction project, the requested revisions to the permit would not affect the applicable emission standards and emission limits that apply to the BOP furnaces. Please find the following documents included with this application:

1. 199-CAAPP form
2. 197-CAAPP form-Check for $500
3. Cross Reference Table documents
4. Construction Permit #95010001

If you have any questions or require any additional information, please contact Jason Braxton at JKBraxton@uss.com or by phone at 412-433-6544 or contact Bryan Kresak at BMKresak@uss.com or by phone at 618-451-3391.

Sincerely,

Michael Terry
Division Manager, Steelmaking
United States Steel Corporation
Granite City Works

Illinois Environmental Protection Agency

Bureau of Air • 1021 North Grand Avenue East • P.O. Box 19506 • Springfield • Illinois • 62794-9506

FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION

FOR AGENCY USE ONLY

ID Number: _____ Permit #: _____

☐ Complete ☐ Incomplete Date Complete: _____

Check Number: _____ Account Name: _____

This form is to be used to supply fee information that must accompany all construction permit applications. This application must include payment in full to be deemed complete. Make check or money order payable to the Illinois Environmental Protection Agency, Division of Air Pollution Control - Permit Section at the above address. Do NOT send cash. Refer to instructions (197-INST) for assistance.

Source Information

1. Source Name: United States Steel Corporation-Granite City Works
2. Project Name: Permit #95010001 Change for BOP ER project
3. Source ID #: (if applicable) 119813AA1
4. Contact Name: Bryan Kresak
5. Contact Phone #: (618) 451-3391

Fee Determination

6. The boxes below are automatically calculated.

Section 1 Subtotal $0.00 + Section 2, 3 or 4 Subtotal $500.00 = $500.00 Grand Total

Section 1: Status of Source/Purpose of Submittal

7. Your application will fall under only one of the following five categories described below. Check the box that applies. Proceed to applicable sections. For purposes of this form:

- **Major Source** is a source that is required to obtain a CAAPP permit.
- **Synthetic Minor Source** is a source that has taken limits on potential to emit in a permit to avoid CAAPP permit requirements (e.g.,FESOP).
- **Non-Major Source** is a source that is not a major or synthetic minor source.

☑ Existing source without status change or with status change from synthetic minor to major source or vice versa. Proceed to Section 2.

☐ Existing non-major source that will become synthetic minor to major source. Proceed to Section 4.

☐ New major or synthetic minor source. Proceed to Section 4.

☐ New non-major source. Proceed to Section 3.

☐ AGENCY ERROR. If this is a timely request to correct an issued permit that involves only an agency error and if the request is received within the deadline for a permit appeal to the Pollution Control Board. Skip Sections 2, 3 and 4. Proceed directly to Section 5.

$0.00 Section 1 Subtotal

This agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 ET SEQ. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Section 2: Special Case Filing Fee

8. **Filing Fee.** If the application only addresses one or more of the following, check the appropriate boxes, skip Sections 3 and 4 and proceed directly to Section 5. Otherwise, proceed to Section 3 or 4 as appropriate.

☐ Addition or replacement of control devices on permitted units.

☐ Pilot projects/trial burns by a permitted unit

☐ Land remediation projects $500.00

☐ Revisions related to methodology or timing for emission testing

☑ Minor administrative-type change to a permit

Section 3: Fees for Current or Projected Non-Major Sources

9. This application consists of a single new emission unit or no more than two modified emission units. ($500 fee)

10. This application consists of more than one new emission unit or more than two modified units. ($1,000 fee)

11. This application consists of a new source or emission unit subject to Section 39.2 of the Act (i.e., Local Siting Review); a commercial incinerator or a municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or an emission unit designated as a complex source by agency rulemaking. ($15,000 fee)

12. A public hearing is held (see instructions). ($10,000 fee)

13. Section 3 subtotal. (lines 9 through 12 - entered on page 1) 13. $0.00

Section 4: Fees for Current or Projected Major or Synthetic Minor Sources

Application contains modified emission units only	14. For the first modified emission unit, enter $2,000.	
	15. Number of additional modified emission units = x $1,000.	
	16. Line 14 plus line 15, or $5,000, whichever is less.	16. $0.00
Application contains new and/or modified emission units	17. For the first new emission unit, enter $4,000.	
	18. Number of additional new and/or modified emission units = x $1,000.	
	19. Line 17 plus line 18, or $10,000, whichever is less.	19. $0.00
Application contains netting exercise	20. Number of individual pollutants that rely on a netting exercise or contemporaneous emissions decrease to avoid application of PSD or nonattainment area NSR = x $3,000.	20. $0.00
Additional Supplemental Fees	21. If the new source or emission unit is subject to Section 39.2 of the Act (i.e. siting); a commercial incinerator or other municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or one or more other emission units designated as a complex source by Agency rulemaking, enter $25,000.	
	22. If the source is a new major source subject to PSD, enter $12,000.	
	23. If the project is a major modification subject to PSD, enter $6,000.	
	24. If this is a new major source subject to nonattainment area (NAA) NSR, enter $20,000.	
	25. If this is a major modification subject to NAA NSR, enter $25,000.	
	26. If the application involves a determination of MACT for a pollutant and the project is not subject to BACT or LAER for the related pollutant under PSD or NSR (e.g., VOM for organic HAP), enter $5,000 per unit for which a determination is requested or otherwise required. x $5,000.	26. $0.00
	27. If a public hearing is held (see instructions), enter $10,000.	
28. Section 4 subtotal (line 16 and lines 19 through 28) to be entered on page1		28. $0.00

Section 5: Certification

NOTE: Applications without a signed certification will be deemed incomplete.

29. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the information contained in this fee application form is true, accurate and complete.

by: _____
Signature

Michael Terry
Typed or Printed Name of Signatory

Division MGR, Steelmaking - U. S. Steel GCW
Title of Signatory

5/21/19
Date

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Construction Permit Application for a Proposed Project at a CAAPP Source	For Illinois EPA use only
	ID No.:
	Appl. No.:
	Date Rec'd:
	Chk No./Amt:

This form is to be used to supply general information to obtain a construction permit for a proposed project involving a Clean Air Act Permit Program (CAAPP) source, including construction of a new CAAPP source. Detailed information about the project must also be included in a construction permit application, as addressed in the "General Instructions For Permit Applications," Form APC-201.

Proposed Project

1. Working Name of Proposed Project:
U.S. Steel Granite City Works BOF Secondary Emissions Control System

2. Is the project occurring at a source that already has a permit from the Bureau of Air (BOA)?
☐ No ☒ Yes If Yes, provide BOA ID Number: 1 1 9 8 1 3 A A 1

3. Does this application request a revision to an existing construction permit issued by the BOA?
☐ No ☒ Yes If Yes, provide Permit Number: 9 5 0 1 0 0 0 1

4. Brief Description of Proposed Project:
The principal purpose of the requested revision to this permit is to accommodate an emission reduction project for particulate emissions that U. S. Steel is planning for the two basic oxygen process (BOP) furnaces at the Granite City facility.

Source Information

1. Source name:* United States Steel Corporation - Granite City Works

2. Source street address:* 1951 State Street

3. City: Granite City	4. County: Madison	5. Zip code:* 62040

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.

6. Is the source located within city limits? ☒ Yes ☐ No
If no, provide Township Name: Granite City

7. Description of source and product(s) produced:	8. Primary Classification Code of source:
Integrated Iron and Steel Making Facility	SIC: 3312 or NAICS:

9. Latitude (DD:MM:SS.SSSS):	10. Longitude (DD:MM:SS.SSSS):
38 42' 1.2241"	90 8' 56.4272"

* Is information different than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Identification of Permit Applicant

1. Who is the applicant?	2. All correspondence to: (check one)
☒ Owner ☐ Operator	☒ Source ☐ Owner ☐ Operator
3. Applicant's FEIN:	4. Attention name and/or title for written correspondence:
25-1897152	Bryan Kresak/Environmental Director

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Owner Information*		
1. Name: United States Steel Corporation		
2. Address: 600 Grant Street		
3. City: Pittsburgh	4. State: PA	5. Zip code: 15219

* Is this information idifferent than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Operator Information (if different from owner)*		
1. Name United States Steel Corporation - Granite City Works		
2. Address: 1951 State Street		
3. City: Granite City	4. State: IL	5. Zip code: 62040

* Is this information different than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Technical Contacts for Application	
1. Preferred technical contact: (check one) ☒ Applicant's contact ☐ Consultant	
2. Applicant's technical contact person for application: Jason Braxton, Environmental Engineer	
3. Contact person's telephone number(s) 412-433-6544	4. Contact person's e-mail address: jkbraxton@uss.com
5. Consultant for application: None	
6. Consultant's telephone number(s): N/A	7. Consultant's e-mail address: N/A

Other Addresses for the Permit Applicant	
ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.	
1. Address for billing Site Fees for the source: ☒ Source ☐ Other (provide below):	
2. Contact person for Site Fees: Bryan Kresak	3. Contact person's telephone number: 618-451-3391
4. Address for Annual Emission Report for the source: ☒ Source ☐ Other (provide below):	
5. Contact person for Annual Emission Report: Bryan Kresak	6. Contact person's telephone number: 618-451-3391

Review Of Contents of the Application	
NOTE: ANSWERING "NO" TO THESE ITEMS MAY RESULT IN THE APPLICATION BEING DEEMED INCOMPLETE	
1. Does the application include a narrative description of the proposed project?	☒ Yes ☐ No
2. Does the application clearly identify the emission units and air pollution control equipment that are part of the project?	☒ Yes ☐ No
3. Does the application include process flow diagram(s) for the project showing new and modified emission units and control equipment, along with associated existing equipment and their relationships?	☒ Yes ☐ No
4. Does the application include a general description of the source, a plot plan for the source and a site map for its location?	☐ Yes ☐ No ☒ N/A* * Material previously provided
5. Does the application include relevant technical information for the proposed project as requested on CAAPP application forms (or otherwise contain all relevant technical information)?	☒ Yes ☐ No
6. Does the application include relevant supporting data and information for the proposed project as provided on CAAPP forms?	☒ Yes ☐ No
7. Does the application identify and address all applicable emission standards for the proposed project, including: State emission standards (35 IAC Chapter I, Subtitle B); Federal New Source Performance Standards (40 CFR Part 60)?	☒ Yes ☐ No
8. Does the application address whether the project would be a major project for Prevention of Significant Deterioration, 40 CFR 52.21?	☐ Yes ☐ No ☒ N/A
9. Does the application address whether the project would be a major project for "Nonattainment New Source Review," 35 IAC Part 203?	☐ Yes ☐ No ☒ N/A
10. Does the application address whether the proposed project would potentially be subject to federal regulations for Hazardous Air Pollutants (40 CFR Part 63) and address any emissions standards for hazardous air pollutants that would be applicable?	☐ Yes ☐ No ☒ N/A* * Source not major ☐ Project not major ☒
11. Does the application include a summary of annual emission data for different pollutants for the proposed project (tons/year), including: 1) The requested permitted emissions for individual new, modified and affected existing units*, 2) The past actual emissions and change in emissions for individual modified units* and affected existing units*, and 3) Total emissions consequences of the proposed project? (* Or groups of related units)	☐ Yes ☐ No ☒ N/A * The project does not involve an increase in emissions from new or modified emission units.
12. Does the application include a summary of the current and requested potential emissions of the source (tons/year)?	☒ Yes ☐ No ☐ N/A* * Applicability of PSD, NA NSR or 40 CFR 63 to the project is not related to the source's emissions.
13. Does the application address the relationships and implications of the proposed project on the CAAPP Permit for the source?	☒ Yes ☐ No ☐ N/A* * CAAPP Permit not issued
14. If the application contains information that is considered a TRADE SECRET, has it been properly marked and claimed and all requirements to properly support the claim pursuant to 35 IAC Part 130 been met? Note: "Claimed" information will not be legally protected from disclosure to the public if it is not properly claimed or does not qualify as trade secret information.	☐ Yes ☒ No ☐ N/A* * No information in the application is claimed to be a TRADE SECRET
15. Are the correct number of copies of the application provided? (See Instructions for Permit Applications, Form 201)	☒ Yes ☐ No
16. Does the application include a completed "FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION," Form 197-FEE, a check in the amount indicated on this form, and any supporting material needed to explain how the fee was determined?	☒ Yes ☐ No

Signature Block

Authorized Signature:

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete and that I am a responsible official for the source, as defined by Section 39.5(1) of the Environmental Protection Act.

BY: _____
AUTHORIZED SIGNATURE

Division MGR,Steelmaking-US Steel GCW
TITLE OF SIGNATORY

Michael Terry
TYPED OR PRINTED NAME OF SIGNATORY

_____ _____ _____
DATE

Attachment 1:

Summary of Proposed Revisions to Construction Permit 95010001

Proposed Revisions to Construction Permit 95010001			
Permit Condition	**Nature of Change**	**Description/Explanation**	**Related Condition in CAAPP Permit**
9(a) Opacity Observations for the BOF Shop	Remove	Requirement for observations of opacity of emissions from the BOF shop on at least a weekly basis. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the BOF shop pursuant to the CAAPP permit for the mill. In this regard, Condition 7.5.8(e)(i) of the current CAAPP permit (planned future Condition 7.5.8-1(a))) requires observations of opacity on five out of seven operating days until the new baghouse control system is in place for tapping emissions from the furnaces. Thereafter, the frequency of observations would be related to the level of opacity observed during preceding opacity observations, with opacity observations required on five of seven operating unless preceding observation show compliance by a clear margin. This is more stringent than Condition 9(a) of the construction permit. More generally, it is now appropriate for requirements for opacity observations for this BOF shop to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement and evolution of these requirements as part of the processing of CAAPP permits for the source. In addition, as changes to operational may occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit for the source) without having to separately revise this requirement in the historic construction permit.	7.5.8(e)(i)
9(b) Opacity Observations for the ESP	Remove	Requirement for observations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor on the ESP that exceeds two consecutive hours. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the ESP pursuant to the CAAPP permit. Periodic Monitoring will provide for regular review and appropriate refinement of monitoring requirement for the ESP as part the processing of the CAAPP permits for the mill. This conclusion is not altered by the fact that the relevant Periodic Monitoring provision in the CAAPP permit (Condition 7.5.8(e)(iii)/planned Condition 7.5.8-1(c)) is currently identical to this condition in the construction permit that would be removed. As changes to this requirement for opacity observation may	7.5.8(e)(iii)

R009820

		be appropriate in the future, such changes should be able to be made as part of consideration of Periodic Monitoring during the processing of the CAAPP permit without having to also process a revised construction permit to make related changes to that permit. Moreover, because continuous opacity monitoring is now required for the ESP by the NESHAP, an argument could be made that the identical requirement in the CAAPP permit should already be considered inappropriate or unnecessary. This is because it would provide for a departure from the monitoring explicitly required by the NESHAP.	
9(c) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. This requirement in the construction permit is now unnecessary and inaccurate. The procedures by which opacity is to be determined for purposes of various standards for opacity are also specified by those standards. For example, for purposes of the NESHAP, visible observations of opacity from the BOF shop are to be determined by an average of 12 readings, rather than 24 reading, as generally provided for by USEPA Method 9. For the ESP, continuous opacity monitoring is required. Condition 9(c) is misleading as it generally suggests that opacity of emissions shall be determined using the procedures in Method 9. Incidentally, the flaws in this condition of the construction permit have been addressed in the related condition in the current CAAPP permit (Condition 7.5.8(e)(iii)(b)/planned Condition 7.5.8-1(c)(ii)). That condition, specifying that opacity shall be determined by Method 9, only applies to determinations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor.	7.5.8(e)(iii)(B)
10 and Attachment A General Operating Procedures for the BOF	Remove	Requirement to follow certain operating procedures and requirements for the BOFs and the existing ESP control system, as detailed in Attachment A of the construction permit. This requirement in the construction permit is now unnecessary and inaccurate. First, the NESHAP now generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, detailed requirements for proper operation of the BOFs and ESP system should not be "predetermined" by the terms of a construction permit. Second, as Attachment A of the construction permit sets out detailed requirements, it will become outdated and obsolete as appropriate operating procedures for the BOF evolve and improve over time. The planned emission reduction project is simply another such change that has made the detailed operational requirements in Attachment A of the construction permit outdated. Moreover, as certain changes to the operational requirements for the BOFs may be appropriate in the future, such changes should be able to be made during the processing of the CAAPP permit without having to also act to revise the related requirements in the construction permit. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would serve to confirm that the Illinois EPA has already determined that this requirement is obsolete.	-

R009821

11 Flame Suppression for Tapping	Remove	Requirement for use of flame suppression for alloy addition. Use of flame suppression would become unnecessary when tapping is controlled by local capture hoods and a baghouse as part of the planned emission reduction project. This new equipment will provide better overall control of particulate emissions from tapping. Continued use of flame suppression would also act to reduce the capture efficiency of the new hoods. This is because the volume of a gas expands with temperature. Continued use of flame suppression would increase the temperature of the air in the area in which tapping occurs, acting to reduce the amount of air actually drawn in by the new capture hoods. Continued use of flame suprression would also pose a physical threat to the new capture system due to the higher temperature that would result and increased carryover of sparks into the ductwork. As a more general matter, an explicit requirement for use of flame suppression is not needed in the construction permit. First, the BOFs must be operated to comply with operating parameter limits pursant to the NESHAP. As the performance tests that set such limits are conducted with use of flame suprression, this emission control measure is appropriately considered an element of the operating parameter limit. This would not be the case only if a performance test showed compliance without use of flame suppression. Second, as other changes to control measures for tapping could occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit) without having to separately revise this requirement in the historic construction permit.	7.5.5-3(a)(ii)
12(a), (b)(i) and (c) Requirements for Minimum Set Points	Remove	Specific sets points for the ESP (i.e., minimum numerical requirements for the exhaust gas flow rate at the stack of the ESP) during different portions of the steel production cycle would be removed. When the new baghouse control system begins operating, these requirements would become outdated. The requirements that apply for tapping and charging or overlapping operation would cease to be relevant when tapping and charging are not controlled by the ESP. The requirement for refining when only a single furnace is operating would also cease to be relevant. When the new baghouse control system begins operation, the only gas flow from the ESP will be from the covers on the hoods and air flow associated with the refining step, without leakage from the charging hoods and associated ducts. Incidentally, the construction permit contemplated future changes to set points. Condition 12(c) allowed for the establishment of lower set points, requiring use of less aspiration air, based on a demonstration that a better level of control would occur. It also provided that the established set points would not apply during testing that was conducted for the purposes of revising set points. However, it did not address how such revised set point were to be approved or address future circumstances in which set points for certain modes of operation would no longer be appropriate. More generally, the existing requirements are made obsolete by the operating parameter limits for capture systems for the BOPFs that are established under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). These operating parameter limits more directly address operation of capture systems on BOPFs than the requirements that would be removed. This is because they address the operation of	7.5.6(h)(i) & (ii) and 7.5.5-3(b)(i)

R009822

		the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOPFs or their associated control systems. The installation of the new baghouse control system is only an example of such a change under the NESHAP, which will trigger a requirement to conduct additional performance testing to establish new operating parameter limit for both the new and enhanced capture systems for charging and tapping and the existing covers on the BOF vessels.	
12(b)"(iii)" Requirements for Staggered Operation	Remove	Operational requirements related to staggering of the oxygen blowing of the BOPFs, the charging of hot metal and alloy addition during tapping would be removed. This change would be made because the new baghouse control system will be designed with sufficient capacity to simultaneously control charging of one BOF and tapping of the other. Accordingly, staggering of these operational steps by the BOFs will no longer be necessary for the BOFs to comply with applicable emission standards. More generally, the existing requirements for staggered operation of the BOFs are made obsolete by the operational requirements for the BOFs under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). The NESHAP directly requires that the BOFs be operated in a manner that is consistent with that during a performance test in which compliance with applicable emission standards has been shown. As such, the NESHAP would preclude overlap of different steps in the operation of the two BOFs if performance testing has not demonstrated the ability to comply when such steps overlapped. As such, only the most basic restriction on overlapping operation of the BOFs would be maintained, consistent with the construction permit for the baghouse control system, which does not allow simultaneous oxygen blowing of both vessels unless approved by a separate permit. This approach recognizes the current capacity of the control system for oxygen blowing (refining), which is currently insufficient for the oxygen blowing of both furnace vessels simultaneously, while also providing for possible improvements to the control system in the future.. Lastly, the operating parameter limits under the NESHAP more directly address operation of capture systems for secondary emissions from BOPFs than the requirements that would be removed. As related to the manner of operation, the NESHAP addresses the operation of the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack of the particulate control device. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOFs or their associated control systems. The installation of the new baghouse control system is such a change under the NESHAP, which will trigger a requirement to conduct further performance testing to establish new operating parameter limits for the new and enhanced capture systems for charging and tapping.	7.5.5-3(a)(i)

R009823

12(d) and (f) Requirements for Monitoring of ESP Stack Gas Flow Rate	Remove	Requirements for operational monitoring for ESP stack flow rate. This change would be made because the underlying requirements for minimum stack gas flow rate would be removed. Monitoring of individual capture systems and the air flow into the ESP would more directly address proper operation of the ESP control system. See also above discussion for Conditions 12(b)"(iii)."	7.5.8(d)(ii) & (iii)
12(e) Recordkeeping for ESP Flow Rate for Charging, Refining and Tapping	Remove	Requirement that records for ESP stack gas flow rate be kept for charging, refining and tapping. This requirement will become obsolete with the baghouse control system because the ESP would no longer be used to control charging and tapping. More generally, it is now appropriate for operational monitoring requirements for the BOFs, including monitoring requirements for the capture systems for the BOFs, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements as part the processing of CAAPP permits for the source.	7.5.9(b)(vii)
13(a) and (c) Operational Monitoring for Waste Gas Suction for the ESP System	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping. More generally, operational monitoring requirements for the BOFs, including monitoring related to the capture systems, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements.	7.5.8(d)(i) & (i)(B)
13(b) Role of the Operational Monitoring for Waste Gas Suction for the ESP	Remove	Provision that the waste gas suction monitor for the ESP will be used to ensure that sufficient draft is maintained in the capture systems on the BOFs so as to maximize capture of emissions. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping.	7.5.8(d)(i)(A)
13(d) Operational Monitoring for Static Pressure in the ESP Downcommer Duct	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle would be removed. This change would be made because, with the baghouse control system, the ESP would no longer be used to control charging and tapping. In addition, this monitoring requirement is made obsolete by the NESHAP, which now provides a comprehensive approach to operational monitoring for capture system for secondary emissions from BOFs.	7.5.8(d)(i)(C)
14(a and (b) Requirements for Visual Inspections of the Capture Systems in the ESP Control System	Remove	Requirements for regular inspections of capture systems associated with the ESP. This requirement is made obsolete by the work practices required by the NESHAP. Monthly inspection of the equipment that is important to the performance of the total capture system and repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. In addition, when the new baghouse system begins operation, these requirements would no longer address the existing capture systems for charging.	7.5.8(d)(iv)(A) & (B)
14(c)	Remove	Requirement for prompt repair of leaks or areas otherwise noted to be in need of repair.	7.5.8(d)(iv)(C)

R009824

Requirement for Prompt Repair of Leaks and Other Defects		This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) Repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. This would require that timely maintenance be performed as necessary to maintain compliance.	
15(a) Requirement to Operate, Maintain and Repair the BOF ESP to Comply with the Permit	Remove	Requirement to generally operate, maintain and repair the ESP to comply with this construction permit. This requirement is obsolete as it would inappropriately impose a redundant obligation to comply with other requirements in the construction permit. As those other requirements would be present and applicable, as reflected in an appropriate permit for the Granite City Works, US Steel would already legally be obligated to take necessary actions to comply with those requirements. To the extent that US Steel was generally being required to properly operate and maintain the ESP, that requirement should exist independent of the other conditions of the permit. In this regard, this obligation for good air pollution control practice is now explicitly required by the NESHAP.	7.5.5-3(b)(ii)
15(b) Requirement for an Adequate Inventory of Spare Parts	Remove	Requirement to maintain an adequate inventory of spare parts for the ESP. This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. Moreover, the requirement does not directly address maintenance of the ESP as should facilitate proper operation of the ESP. Rather, a separate requirement would be established related to the ESP that is not directly related to either maintenance or operation of the ESP.	
16 Requirement for Written Operating Procedures for the BOF ESP	Remove	Requirement to maintain written operating procedures This requirement in the construction permit is now unnecessary. The NESHAP now generally requires operation of the BOFs in accordance with good air control practice with preparation and implementation of a written operation and maintenance plan for the BOFs. (See 40 CFR 63.7800(b).)	
17 Required Recordkeeping for the ESP	Remove	Requirements for keeping certain records related to the BOFs and the existing ESP control system would be removed, including records for: (i) Operating time of the BOFs; (ii) Operating time of the capture systems and certain operating data for these systems; (iii) Operating times of the ESP and certain performance data for the ESP; and (iv) Inspection and maintenance records for the existing capture systems and the ESP. The recordkeeping requirement would be removed because they have been replaced by requirements that more directly address proper operation of the ESP, including recordkeeping requirements of the NESHAP. In particular, records for "operating times" of the BOFs, the ESP capture systems and the ESP itself do not directly address lapses in control of particulate emissions, i.e., periods when a BOF operates without proper capture and control of emissions. The NESHAP, 40 CFR 63.7834, includes recordkeeping for preventative maintenance that is performed and corrective actions that are taken.	7.5.9(b)(i) thru (iv)

R009825

18 and Table 2	Revise	A parenthetical phrase would be removed from this condition, which contains permit limits for the emissions of the ESP. The phrase indicates that the emissions of the ESP include emissions from charging, refining and tapping of the BOPF. The phrase would be removed because it would no longer be accurate when charging and tapping emissions are controlled by the new baghouse control system.	-
Note (following Condition 18)	Remove	Explanatory note describing the steel production cycle would be removed. The note would be removed because it is inconsistent with the definition of the steel production cycle in the NESHAP, 40 CFR 63.7852, which indicates that the steel production ends after slag is removed from the BOF vessel, rather than at the end of the tapping process.	-
33(a) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. See discussion for Condition 9(c), which is essentially identical to Condition 33(a).	-
33(b) Requirement for Personnel to Conduct Opacity Observations	Remove	Requirement that the source have "...at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit." This requirement is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from various operations at the Granite City Works. The Periodic Monitoring established by the CAAPP permit directly addresses the opacity observation that the source must conduct or have conducted. By contrast, this requirement of the construction only indirectly addresses opacity observations, as it deals with the staffing that must be available to conduct such observations. Moreover, as such, it could be construed to provide for a failure to actually conduct opacity observations if US Steel had otherwise met with this requirement related to availability of personnel for such observations. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would simply confirm that the Illinois EPA has already determined this requirement to be obsolete.	-
37 Coordination with Other Existing Permits	Revise	Provision would be revised to further define "existing operating permits" as permits issued for the Granite City Works as of January 15, 1996. This change would be made so that the issuance of a revised construction permit would not affect the hierarchy of permits for the source based on their chronology. In particular, the construction permit would only supersede operating permits that were issued before the original issuance of the construction permit and not subsequent operating permits issued for the source, including the CAAPP permits.	-
39 Requirement for Reporting of Deviations	Remove	Requirement for reporting deviations from the construction permit. This requirement is obsolete because reporting of deviations is now a routine element of CAAPP permits, including the CAAPP permit for the Granite City Works.	-

R009826

Kras, Kim

From: David W Hacker [DWHacker@uss.com]
Sent: Friday, May 18, 2012 3:54 PM
To: Carter, Sally
Cc: Romaine, Chris; Smith, Kevin L.; khodge@hddattorneys.com; Medina, Rachel
Subject: Re: US Steel Revision to Permit 95010001 & Accompanying Project Summary (Drafts)

Sally - Jason has been in touch with Chris and advised Chris that USS will provide comments via email by COB Tuesday, May 22, 2012.

David W. Hacker
General Attorney
United States Steel Corporation
Law Department
600 Grant Street - Room 1500
Pittsburgh, PA 15219
Phone: 412.433.2919
Fax: 412.433.2964

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"Carter, Sally" ---05/17/2012 03:52:45 PM---Good Afternoon, Please find attached a draft of the revised Construction Permit/PSD Approval, 950100

From: "Carter, Sally" <Sally.Carter@Illinois.gov>
To: "Medina, Rachel" <RMedina@atg.state.il.us>, "khodge@hddattorneys.com" <khodge@hddattorneys.com>, David W Hacker <DWHacker@uss.com>,
Cc: "Romaine, Chris" <Chris.Romaine@Illinois.gov>, "Smith, Kevin L." <Kevin.L.Smith3@Illinois.gov>
Date: 05/17/2012 03:52 PM
Subject: US Steel Revision to Permit 95010001 & Accompanying Project Summary (Drafts)

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Good Afternoon,

Please find attached a draft of the revised Construction Permit/PSD Approval, 95010001, and an accompanying Project Summary. Again, all technical comments and/or concerns should be directed to Chris Romaine as soon as possible.

All required documentation has now been forwarded to counsel for review. As such, I, again, request that you let us know when the State can expect formal comments on these documents and those forwarded yesterday to counsel. Thank you in advance for your prompt attention to this matter.

Sally [attachment "US Steel Production Permit Increase Revision construction only 5-17.doc" deleted by David W Hacker/Headquarters/USS] [attachment "US Steel production increase - project summary draft 5-16-2012.doc" deleted by David W Hacker/Headquarters/USS]

Kras, Kim

From: Carter, Sally
Sent: Thursday, May 17, 2012 2:59 PM
To: Romaine, Chris
Subject: FW: US Steel Revision to Permit 95010001 & Accompanying Project Summary (Drafts)

From: David W Hacker [mailto:DWHacker@uss.com]
Sent: Thursday, May 17, 2012 2:58 PM
To: Carter, Sally
Cc: khodge@hddattorneys.com; Medina, Rachel
Subject: Re: US Steel Revision to Permit 95010001 & Accompanying Project Summary (Drafts)

Got it. Thanks. We will need to quickly assess this document and the others in order to get you a date of any anticipated response. In any case, we are expediting our review (we are currently reviewing the docs received yesterday) and will be in touch.

Regards,

David W. Hacker
General Attorney
United States Steel Corporation
Law Department
600 Grant Street - Room 1500
Pittsburgh, PA 15219
Phone: 412.433.2919
Fax: 412.433.2964

[redacted]erwise indicated, the information contained in or attached to this e-mail is [redacted]ial. If the reader of this message is not the intended recipient, or the agent responsible to deliver to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this in error, or are not sure whether it is privileged, notify the sender by return e-mail and destroy all copies of the communication. Thank you.

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Cc: "Romaine, Chris" <Chris.Romaine@Illinois.gov>, "Smith, Kevin L." <Kevin.L.Smith3@Illinois.gov>
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Kras, Kim

From: Carter, Sally
Sent: Wednesday, February 08, 2012 10:57 AM
To: Ross, Jim
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael; Armitage, Julie
Subject: RE: appeal of Title V permit to EAB

Following up on our conversation this morning, Jim, any denial of a Petition to Object by the USEPA Administrator to a Part 70 permit may be appealed to the United States Court of Appeals. No mechanism exists to appeal a denial of said petition to the Environmental Appeals Board. Please note that the relevant provision is provided in Section 307(b)(1) of the Clean Air Act.

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From: Ross, Jim
Sent: Tuesday, February 07, 2012 2:04 PM
To: Carter, Sally
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael
Subject: appeal of Title V permit to EAB

Sally,

Hoping that you or someone in DLC can give legal clarification as to whether an Illinois EPA Title V permit decision (in particular, renewal, amendment or modification of permit) can be appealed to the EAB. I am finding conflicting information and it may be pertinent to USEPA's comments on the US Steel permit. Included Mike as maybe he already has this info.

In this doc and a few others it says Title V permits can be appealed to EAB
http://apps.americanbar.org/environ/committees/airquality/pdf/ThomsonTitleV.pdf

The below doc seems to indicate otherwise:

Page 55 of below link:
*Section 71.11(l) provides for appeal to the EAB from a federal Title V operating permit decision. Section 71.10(i) provides for an appeal to the EAB from a Title V operating permit that was issued by a state, tribal, local, or other authority pursuant to a *delegation* of authority from EPA. *See, e.g., In re Peabody W. Coal Co.*, 12 E.A.D. 22, 27-29 (EAB 2005). However, a permit issued by a state with an EPA-authorized state program may not be appealed to the EAB. An Administrator's denial of a request that a permit be revised, revoked and reissued, or terminated may be informally appealed to the EAB, pursuant to 40 C.F.R. § 71.27(a)(2).
http://www.epa.gov/eab/pmanual.pdf

Need to know what is the appeal process in Illinois – for example, Ohio lists their process as follows:

Title V Permit Appeal Procedure

Third parties, including citizens, have 60 days to petition U.S. EPA to reconsider its decision not to object. Objections must be based on comments made during the official comment period. If U.S. EPA responds to a petition by objecting after Ohio EPA has already issued a permit, the permit will be revised or revoked.

If Ohio EPA issues a final Title V permit, an appeal can be made to the Environmental Review Appeals Commission

(ERAC). An appeal to ERAC must be in writing and specify the action being appealed and the grounds on which the appeal is based. A copy of the appeal must be received by the director of Ohio EPA within three days of filing with ERAC. File the appeal with:

Environmental Review Appeals Commission
309 South Fourth St., Room 222
Columbus, OH 43215
(614) 466-8950
www.erac.ohio.gov/

Also, third parties can petition U.S. EPA to reconsider the issuance of a Title V permit (see Step 6 of the Title V permitting process outlined previously).

Kras, Kim

From: Ross, Jim
Sent: Tuesday, February 07, 2012 3:06 PM
To: Ross, Jim
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael; Armitage, Julie
Subject: RE: appeal of Title V permit to EAB

Well David Ogulei may still be trying to preserve the right to appeal to the EAB – but he still needs to explain that and why this case is so different from the hundreds (or thousands) of other changes we've made to PSD conditions via the Title V process.

From: Carter, Sally
Sent: Tuesday, February 07, 2012 2:58 PM
To: Ross, Jim
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael; Armitage, Julie
Subject: RE: appeal of Title V permit to EAB

Good Afternoon Jim,

Title V permits issued pursuant to Part 71 may be appealed to the EAB. However, given Illinois has its own Part 70 program, any Title V appeals are to be filed with the Illinois Pollution Control Board (not the EAB). This process is outlined in Section 40.2 of the Act. (Note that the appeal process before the Illinois Pollution Control Board is obviously distinct from the Petition process before the USEPA Administrator as outlined in 39.5(9) of the Act). Things get interesting when an appeal is pending before the Illinois Pollution Control Board at the same time a Petition to Object is pending before the USEPA Administrator.

Given the complexities of the appeal process, I am happy to talk further to you in person on this matter. Please let me know if you would like to arrange a time to talk.

Sally

From: Ross, Jim
Sent: Tuesday, February 07, 2012 2:04 PM
To: Carter, Sally
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael
Subject: appeal of Title V permit to EAB

EPA-DMSC
AUG 23 2013
REV

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Kras, Kim

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Sent: Tuesday, February 07, 2012 2:58 PM
To: Ross, Jim
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael; Armitage, Julie
Subject: RE: appeal of Title V permit to EAB

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Sally

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From: Ross, Jim
Sent: Tuesday, February 07, 2012 2:04 PM
To: Carter, Sally
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael
Subject: appeal of Title V permit to EAB

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http://www.epa.gov/eab/pmanual.pdf

Need to know what is the appeal process in Illinois – for example, Ohio lists their process as follows:

Title V Permit Appeal Procedure

Third parties, including citizens, have 60 days to petition U.S. EPA to reconsider its decision not to object. Objections must be based on comments made during the official comment period. If U.S. EPA responds to a petition by objecting after Ohio EPA has already issued a permit, the permit will be revised or revoked.

If Ohio EPA issues a final Title V permit, an appeal can be made to the Environmental Review Appeals Commission (ERAC). An appeal to ERAC must be in writing and specify the action being appealed and the grounds on which the appeal is based. A copy of the appeal must be received by the director of Ohio EPA within three days of filing with ERAC. File the appeal with:
Environmental Review Appeals Commission
309 South Fourth St., Room 222
Columbus, OH 43215
(614) 466-8950
www.erac.ohio.gov/

Also, third parties can petition U.S. EPA to reconsider the issuance of a Title V permit (see Step 6 of the Title V permitting process outlined previously).

Kras, Kim

From: Ross, Jim
Sent: Tuesday, February 07, 2012 2:04 PM
To: Carter, Sally
Cc: Romaine, Chris; Smith, Kevin L.; Bakowski, Ed; Reed, Michael
Subject: appeal of Title V permit to EAB

Sally,

Hoping that you or someone in DLC can give legal clarification as to whether an Illinois EPA Title V permit decision (in particular, renewal, amendment or modification of permit) can be appealed to the EAB. I am finding conflicting information and it may be pertinent to USEPA's comments on the US Steel permit. Included Mike as maybe he already has this info.

In this doc and a few others it says Title V permits can be appealed to EAB
http://apps.americanbar.org/environ/committees/airquality/pdf/ThomsonTitleV.pdf

The below doc seems to indicate otherwise:

Page 55 of below link:
*Section 71.11(l) provides for appeal to the EAB from a federal Title V operating permit decision. Section 71.10(i) provides for an appeal to the EAB from a Title V operating permit that was issued by a state, tribal, local, or other authority pursuant to a *delegation* of authority from EPA. *See, e.g., In re Peabody W. Coal Co.*, 12 E.A.D. 22, 27-29 (EAB 2005). However, a permit issued by a state with an EPA-authorized state program may not be appealed to the EAB. An Administrator's denial of a request that a permit be revised, revoked and reissued, or terminated may be informally appealed to the EAB, pursuant to 40 C.F.R. § 71.27(a)(2).
http://www.epa.gov/eab/pmanual.pdf

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AUG 3 2 2013
REVIEWED

Need to know what is the appeal process in Illinois – for example, Ohio lists their process as follows:

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Also, third parties can petition U.S. EPA to reconsider the issuance of a Title V permit (see Step 6 of the Title V permitting process outlined previously).

HODGE DWYER & DRIVER

MONICA T. RIOS
E-mail: mrios@hddattorneys.com

August 17, 2012

VIA CERTIFIED MAIL
(Return Receipt Requested)

Mr. Dean Studer
Hearing Officer
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Re: Comments on U.S. Steel – Baghouse Emissions Reduction Project
Granite City Works, Granite City, Illinois
Facility I.D. No. 119813AAII

Dear Mr. Studer:

On May 20, 2012, the Illinois Environmental Protection Agency ("Illinois EPA") issued for comment "new and revised air pollution control permits related to the Basic Oxygen Process Furnaces at United States Steel's Granite City Works." On July 18, 2012, Illinois EPA held a public hearing to accept oral comments on the draft permits that were sent to public notice and directed that any written comments be sent to you, as the Hearing Officer, and postmarked by August 17, 2012. The United States Steel Corporation ("U.S. Steel") appreciates the opportunity to provide the following comments on the draft Emission Reduction Project construction permit (Application No. 11050006) ("baghouse permit"), the draft modification to the facility's CAAPP permit (No. 96030056), and the draft changes to the production increase construction permit ("Permit 95010001").

Comments on Baghouse Permit

The following comments are on conditions in the public notice draft of the baghouse permit for the emissions reduction project:

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REVIEWER JRM

Condition 1(b)

Condition 1(b) provides:

> The Permittee shall prepare and submit to the Illinois EPA its initial revisions to the plans for the BOPFs required by the NESHAP, 40 CFR 63 Subpart FFFFF (i.e., the operation and maintenance plan required by 40 CFR 63.7800(b) and the startup, shutdown and malfunction plan required by 40 CFR 63.7810(c)) to address the affected BOPF baghouse system at least 30 days in advance of initial operation of the BOPFs with this system.

U.S. Steel understands that a revised operation and maintenance plan ("O&M plan"), incorporating procedures for the new baghouse is required to be submitted. However, U.S. Steel requests clarification on the timing of such submittal. The revised O&M plan should not be submitted until after the initial performance test is performed and completed, as required pursuant to Condition 3-1(a)(i) (see further discussion below). Since the performance test will establish operational limits, it is necessary for the test to be completed in order to accurately revise and update the O&M plan.

Condition 3-1(a)(i)

This condition requires that the permittee promptly conduct a performance test for PM emissions in accordance with the NESHAP following initial performance of the BOPF baghouse to establish new operating limits for the capture systems for the BOPFs. U.S. Steel requests that this condition be revised to clarify that "promptly" means that the performance test will be conducted after shakedown. Further, U.S. Steel requests that this condition specify that the performance test will be conducted to demonstrate not only compliance with the emission limit in Condition 2(a) and applicable NESHAP limits for the baghouse and the ESP, but also to establish new operational limits for the baghouse and revised operational limits for the ESP. In addition, this condition should specify that U.S. Steel will submit a revised O&M plan after the new and revised operational limits for the controls have been determined.

Condition 3-1(a)(ii)

This condition requires emissions testing for PM, filterable PM_{10} and $PM_{2.5}$, condensable PM, NOx, CO, VOM, and lead within one year of initial operation of the baghouse controlling charging and tapping from the BOPFs. Since the baghouse does not remove gaseous pollutants, such as NOx, CO, or VOM, emissions testing for these pollutants should not be required. In addition, since there are no applicable NOx, CO, or VOM limits for emissions from the baghouse, emissions testing for these pollutants from the baghouse would yield results that are only minimally useful. Also note, that according to the Iron and Steel MACT (40 C.F.R. Part 63, Subpart FFFFF) and a recent information collection request, NOx, CO, and VOM are not pollutants of concern from BOP secondary emissions control devices, and, accordingly, only PM

and metal HAPs should be subject to testing requirement. U.S. Steel requests that the testing for NOx, CO, and VOM required by this condition be removed from the draft baghouse permit.

If Illinois EPA requires testing for NOx, CO, and VOM, it is better to require testing for these pollutants only on the primary emissions control device, such as the ESP, which is not only more effective, but also more feasible and consistent with historical practice. This type of testing on the primary emissions controls is the approach taken by the Iron and Steel MACT. In addition, should testing for NOx, CO, and VOM be required on the primary control device, results can be compared to the applicable limits in the CAAPP permit. *See* CAAPP Permit No. 96030056 at Condition 7.5.6(c) (BOF ESP Stack Emissions).

Condition 3-1(b)(i) and (ii)

Condition 3-1(b)(i) and (ii) states that PM testing should be conducted using applicable procedures specified in the NESHAP and testing of other pollutants shall be conducted using applicable USEPA procedures. In subsection (b)(ii), the draft baghouse permit lists methods for filterable PM_{10} and $PM_{2.5}$ and condensable PM, which seems inconsistent with the statement in subsection (b)(ii) to use applicable USEPA methods for testing pollutants other than PM. Subsection (b)(ii) also creates ambiguity in that it is unclear whether the listed PM test methods are intended to apply to testing for other pollutants, which does not seem appropriate. U.S. Steel seeks clarification regarding the applicable test methods for PM and other pollutants.

Comments on Proposed Changes to Permit 95010001

The following comments are on the proposed changes to Permit 95010001:

Condition 18

As explained in the Project Summaries and Statement of Basis that accompanied the public notice drafts of the permits, U.S. Steel proposes to implement an emissions reduction project by installing a new baghouse to control charging and tapping of the two existing basic oxygen process furnaces. Because operation of the new baghouse renders certain terms of Permit 95010001 obsolete, U.S. Steel requested that obsolete conditions be removed from the Permit 95010001. Illinois EPA has proposed to remove obsolete conditions from Permit 95010001, and in order to denote where conditions have been deleted, Illinois EPA has included notes stating such in the public notice draft of Permit 95010001. In order to be consistent with the other sections of draft Permit 95010001, U.S Steel requests that Illinois EPA add a parenthetical to Condition 18 of Permit 95010001 to state that the "note" to Condition 18 has been removed.

Process for Changes to PSD Permits

The Project Summary for the proposed changes to Permit 95010001 includes a footnote addressing the processing of the application for changes to Permit 95010001. Footnote 13 provides, in relevant part:

> This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable. [1]

U.S. Steel, in an effort to avoid any further delay in the process for issuing the baghouse construction permit, agreed to the public notice period for the revisions to Permit 95010001. However, this action should not be viewed as precedent for processing these type of administrative changes to a PSD permit, where the changes result in no increase in emissions and have no adverse impact on air quality. As U.S. Steel indicated to Illinois EPA, and as discussed further below, the proposed revisions to Permit 95010001 are administrative in nature and are not required to be subject to a public notice period. Illinois EPA, on its own, could have administratively amended Permit 95010001 without a public comment period.

Although the United States Environmental Protection Agency ("USEPA") has not formally adopted its draft policy[2] on PSD permit modifications, the draft policy provides guidance on how USEPA views modifications to PSD permits. USEPA categorized changes to PSD permits as administrative, minor, significant, or fundamental.[3] USEPA stated in regards to administrative changes:

> An administrative change involves no increase in either emissions or impacts and no fundamental change in either the source or one of the emission units at that source. Application or permit revisions may be necessary, but additional review or analysis would not normally be required; examples are typographical and company name changes. One exception is the extension of commence

[1] Footnote 13, Project Summary for the Planned Issuance of A Revision to Construction Permit/PSD Approval 95010001 to Accommodate an Emissions Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois, Illinois EPA (May 2012).
[2] Revised Draft Policy on Permit Modifications and Extensions, USEPA (July 5, 1985).
[3] *Id.* at 5-6.

> construction dates, which may require a limited additional review consisting of BACT reanalysis and public participation.[4]

USEPA also stated in regards to minor changes to a PSD permit:

> Minor changes require revisions to permit applications or issued permits and a certain amount of additional review and analysis, but do not constitute either a fundamental or significant change. Emissions or impacts increase as a result of minor changes, but not above the significance level.[5]

In terms of significant and fundamental changes, these categories are characterized by increasing emissions above significance levels and/or changing the basic nature of an emissions source.[6]

USEPA explained that the four categories of changes to PSD permits "lead to the same number (but not always corresponding) levels of review stringency: amendment, revision,[7] major modification and new permit."[8] USEPA described PSD changes classified as amendments as follows:

> Changes to a permit or application are classified as amendments if they are administrative in nature and result in no increase in either the emission or the air quality impact of a PSD source. In addition, neither the nature nor the size of the source or emissions unit can be altered to the extent that the change would be considered fundamental. Amendments may be quickly processed without any major reevaluation of the decision originally made in permitting the source. Examples of the type of change which would often be treated as an amendment include company name or operator changes, requirements for more frequent

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[4] *Id.* at 5 (Emphasis added.)
[5] *Id.*
[6] *Id.* at 5-6.
[7] According to USEPA's draft policy, "[t]he term revision encompasses the review level required for the large majority of minor and significant changes at all preoperational sources and at existing (operating) major stationary sources which do not qualify as 'major modifications,' as defined by the PSD regulations, or as fundamental changes." *Id.* at 12. USEPA further explained, "Revisions include, in the case of operating sources, most changes involving construction or changes in the method of operation of a source, including control equipment, that do not produce a net significant emissions increase . . ." *Id.* (Emphasis in original.) In cases for revisions to PSD permits, a reviewing agency may choose to repeat a public comment period, and USEPA stated that for the processing of preconstruction PSD permits, "[i]n processing a revision, whether for a minor change or a significant change, the reviewing authority must follow the same public participation procedures noted in 40 CFR 52.21(q)." *Id.* at 12,13, 15. In U.S. Steel's case, the changes to Permit 95010001 do not amount to revisions, as the proposed changes to not address changes in the method of operation or result in a net significant emissions increase. Because the amendments do not warrant the level of review as revisions, no public notice period was necessary for the proposed changes to Permit 95010001.
[8] *Id.* USEPA also considers the stage of source development, i.e. is the source operating? USEPA explained that its policy "typically impos[es] a less rigorous process for proposed changes at operating PSD sources" because, among other factors, "a project in its earlier phases is much more flexible than one already operating."

> monitoring or reporting by the permittee, correction of typographical errors, emission decreases (although such decreases, to be used in netting or trading, must be carefully documented) and minor work clarifications. It should be noted that a fundamental change. . . may result in no increase in emissions or impact, but cannot be treated as an amendment.
>
> The lack of emissions and impact increases for amendment results in little or no review. Proposed amendments (which are nearly always administrative changes) to applications and permits do not require any reanalysis of the basic review originally submitted and need not be subject to public participation requirements as a general rule. However, the Agency emphasizes that there may be instances where changes which are normally administrative may be sufficiently important that the reviewing authority determines that review or public participation is necessary, e.g., a change of ownership of a proposed source to a company which has been involved in highly controversial projects or has received public attention as a result of the manner in which other air pollution sources owned by this company are operated. [9]

Not only has USEPA approved administrative amendments to PSD permits, but other permitting authorities have as well. In 2008, a facility requested the removal of a rolling average provision from the CO emission limits for certain emission units in its PSD permit, since CEMS were not required, making rolling averages impractical.[10] USEPA agreed that "there is no benefit in requiring compliance based on rolling averages," and USEPA further stated:

> . . . .these requested changes will not result in any increase in emissions or cause any adverse air quality impacts. Therefore, EPA is approving these revisions administratively.[11]

In addition, a Nebraska facility obtained an administrative amendment to its PSD construction permit to extend compliance dates for the installation and operation of new control equipment.[12] In that case, in issuing the administrative amendment, the Nebraska Department of Environmental Quality stated, "[t]he emissions and regulatory requirements for this facility will not change due to this modification."[13]

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[9] *Id.* at 11.
[10] Letter to K. Antoine, Environmental Director, Hovensa, LLC from B. Finazzo, Director, Division of Environmental Planning and Protection, USEPA Region II (Oct. 13, 2008).
[11] *Id.*
[12] Administrative Amendment to Prevention of Significant Deterioration Construction Permit for Abengoa Bioenergy Corporation, Nebraska Department of Environmental Quality (Jan. 21, 2004).
[13] *Id.*

As recently as March 2012, the Bay Area Air Quality Management District ("BAAQMD") referenced USEPA's draft guidance and explained that a change that had been made at the facility was considered administrative.[14] BAAQMD stated:

> The facility received an Authority to Construct and a PSD permit on 9/10/99. The District Permit was issued on 8/24/01. The changes to the changes in clearances in the compressor section, installation of the dry Low NOx combustors, and change out of the exhaust gas path components are considered an administrative change under the 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The scope of these changes will not increase permitted emissions of any PSD pollutants (e.g. NO_2, CO, PM_{10}, $PM_{2.5}$, VOC, Lead, Fluorides, Sulfuric Acid Mist, Hydrogen Sulfide, Total Reduced Sulfur) and will not require any changes to permit conditions established during the original PSD permitting action. PSD does not apply to this permitting action.[15]

Finally, as referenced above, Illinois EPA stated that it is processing the changes to Permit 95010001 separately from the baghouse construct permit in order to subject Permit 95010001 "to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124. . ." Although Section 124.1 provides that Part 124 contains USEPA "procedures for issuing, modifying, revoking and reissuing, or terminating all . . . PSD . . . 'permits' . . . ," Part 124 does not appear to include procedures for revising a PSD permit.[16] In fact, Section 124.5(g)(1) is "Reserved for PSD Modification Provisions."[17] Thus, in this case, Part 124 arguably does not apply to processing changes to PSD permits.

Based on USEPA's draft policy, the proposed changes to Permit 95010001 should have been treated by Illinois EPA as an administrative amendment, which did not require a public notice period. The proposed changes result in no emissions increase at the source and no fundamental changes at the source. Very little review, if any, and no reanalysis of the originally submitted application, is necessary. Like the examples provided above, the proposed changes in this case would not increase emissions, adversely impact air quality or change any emissions or regulatory requirements. Accordingly, the proposed changes could have been made via administrative amendment.

---

[14] Permit Evaluation and Statement of Basis for Minor Revision to the Major Facility Review Permit for Los Medanos Energy Center, LLC, Facility No. B1866, Bay Area Air Quality Management District (March 2012).
[15] *Id.* at 6-7. (Emphasis added.)
[16] 40 C.F.R. Part 124.
[17] 40 C.F.R. § 124.5(g)(1).

U.S. Steel appreciates the opportunity to provide these comments. If you should have any questions regarding the above, please do not hesitate to contact me.

Sincerely,

Monica T. Rios

Monica T. Rios

MTR:kjg
pc: David W. Hacker, Esq. (via electronic mail)
Mr. Bryan M. Kresak (via electronic mail)
Mr. Jason K. Braxton (via electronic mail)
Sally A. Carter, Esq. (via electronic mail)

USSC:005/Correspondence/Struder ltr.-Public Comments on Baghouse Permit

Romaine, Chris

From: Carter, Sally
Sent: Monday, August 20, 2012 7:38 AM
To: Romaine, Chris; Smith, Kevin L.
Subject: FW: Comments on U.S. Steel-Baghouse Emissions Reduction Project
Attachments: Studer ltr-Public Comments on Baghouse Permit-8.17.12.pdf

I received a courtesy phone message from Monica on Friday morning stating that these would be coming.

From: Katie J. Ginest [mailto:kginest@hddattorneys.com]
Sent: Friday, August 17, 2012 3:43 PM
To: Carter, Sally
Cc: Monica T. Rios; Katherine D. Hodge; Angie M. Buhl
Subject: Comments on U.S. Steel-Baghouse Emissions Reduction Project

Per Kathy Hodge, please see the attached comments that were submitted to the Hearing Officer today. If you should have any questions, please do not hesitate to contact Kathy. Thank you.

Katie J. Ginest
Legal Secretary
HODGE DWYER & DRIVER
Attorneys at Law
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

kginest@hddattorneys.com

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

R009846

AUG 16 2012

REPLY TO THE ATTENTION OF

RECEIVED
STATE OF ILLINOIS
AUG 20 2012
Environmental Protection Agency
BUREAU OF AIR

Edwin C. Bakowski, P.E.
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Dear Mr. Bakowski:

The U.S. Environmental Protection Agency has reviewed the draft Prevention of Significant Deterioration (PSD) permit revision (Application No. 95010001) prepared by the Illinois Environmental Protection Agency (IEPA) for U.S. Steel Granite City, located at Route 203 and 20th Street, Granite City, Illinois. The draft PSD permit revision makes various changes to the original permit to accommodate a planned emission reduction project for particulate emissions from the Basic Oxygen Furnaces (BOFs). EPA appreciates the potential air quality benefits of the project and the efforts that IEPA and U.S. Steel Granite City have made to ensure the success of the project.

EPA has the following comments on the draft PSD permit revision:

1. Please clarify how the revised permit will continue to independently assure compliance with all PSD review requirements after the following permit conditions are deleted from the current PSD permit: conditions 9(a) through (d) (requirements for opacity observations for the BOF shop and electrostatic precipitator (ESP));[1] and condition 10 and Attachment A (procedures to ensure proper operation of the BOF's ESP).[2] IEPA

[1] Condition 9(a) of the current PSD permit (Permit No. 95010001) requires observations of opacity of emissions from the BOF shop on at least a weekly basis. Condition 9(b) requires opacity to be determined using EPA Method 9 procedures in the event of an outage of the ESP's opacity monitor that exceeds two consecutive hours.

[2] We also note that Condition 8 (visible emissions from the BOF shop) would be revised to require compliance with the 20% opacity limit using the procedures in 35 IAC 212.446(c) instead of the prescribed procedures in Conditions 9(a) and (b). The permit record does not indicate that the original Condition 8 was expected to be identical to the opacity standard in 35 IAC 212.446(c). The original condition 8 appears to be more stringent than the revised condition 8 since it required opacity observations to be conducted on at least a weekly basis pursuant to conditions 9(a) and 9(b). Even if the PSD requirement was influenced by the opacity standard in 35 IAC 212.446(c), its inclusion in the PSD permit is generally expected to address PSD review requirements such as BACT, ambient impacts analysis and public participation. It is not clear how the proposed emission reduction project necessitates a change to the compliance determination method for the previously established opacity limit.

states that these requirements need not be included in the PSD permit because monitoring and operating requirements already exist in the Clean Air Act Permit Program (CAAPP) permit and/or state or federal rules, such as the National Emission Standard for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities, 40 C.F.R. Part 63, Subpart FFFFF (Iron and Steel NESHAP). *See* Project Summary, Attachment 1, at 1-3. Based on our review of IEPA's rationale for the proposed changes to the PSD permit, the key element of this rationale is that compliance with the monitoring provisions of the Iron and Steel NESHAP is sufficient for assuring compliance with the relevant PSD permit limits as originally established. Accordingly, EPA recommends that IEPA revise the permit to clearly establish a connection between the PSD permit and the Iron and Steel NESHAP. Such a connection could be established by including conditions in the PSD permit that require compliance with the applicable provisions of the NESHAP for purposes of demonstrating compliance with the relevant PSD permit limits. This information would then be appropriately re-iterated in the CAAPP permit. This is of concern because EPA believes that the CAAPP permit may not be used to supersede, void, replace, or otherwise eliminate the independent enforceability of terms and conditions in the PSD permit.[3] Additionally, the PSD permit should directly refer to the relevant monitoring provisions of the NESHAP that are being relied upon by the PSD permit rather than to the related conditions of the CAAPP permit that address the provisions of the NESHAP. As a preconstruction permit, the permit record should clearly explain whether the revised PSD permit, considered separately from any other permits or state or federal rules, would continue to have sufficient monitoring and recordkeeping to address compliance with all applicable PSD requirements.

2. For conditions that are rendered "unnecessary" only after the baghouse becomes operational, please specify in the revised permit that the original permit remains effective until the new baghouse becomes operational. The permit record indicates that the following conditions, which are proposed for deletion, are rendered "unnecessary" only after the baghouse becomes operational: Conditions 11 (flame suppression for tapping), 12(a), b(i) and (c) (requirements for minimum set points), 12(b)(iii) (requirements for staggered operation), 12(d) and (f) (monitoring of ESP stack gas flow rate), 12(e) (recordkeeping for ESP flow rate for charging and tapping), 13(a) and (c) (monitoring for waste gas suction for the ESP), and 13(d) (monitoring for static pressure in the ESP downcomer duct). *See* Project Summary, Attachment 1, at 3-6. By specifying in the revised permit that the original permit remains effective until the new baghouse becomes operational, it would ensure that the source continues to demonstrate compliance with permit limits in the same manner as originally authorized, while construction of the baghouse is ongoing.

[3] Also see memorandum from John Seitz, EPA OAQPS, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, May 20, 1999. Available at http://www.epa.gov/ttn/caaa/t5/memoranda/hodan7.pdf.

3. Please clarify in the permit record what the projected and baseline actual emissions are for each modified or affected emission unit. As presented in the available support information, it is not clear whether the reported "current" and "future" emissions represent "baseline actual emissions" and "projected actual emissions", as defined at 40 C.F.R. § 52.21(b)(48) and (b)(41), respectively. *See* Statement of Basis at 8. Clarification is necessary for ascertaining the actual amount of the projected overall emissions reduction due to the project.

We look forward to working with you to ensure that the revised PSD permit meets all federal requirements, and that the record provides adequate support for the permit decision. If you have any questions, please feel free to contact me at (312) 353-4761 or David Ogulei, of my staff, at (312) 353-0987.

Sincerely,

Genevieve Damico
Chief
Air Permits Section

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

GRANITE CITY TOWNSHIP HALL

GRANITE CITY, ILLINOIS

CONCERNING THE PROPOSED ISSUANCE

OF AIR POLLUTION CONTROL PERMITS

FROM UNITED STATES STEEL

CORPORATION IN GRANITE CITY, ILLINOIS

PUBLIC HEARING

JULY 18, 2012

Hearing panel:

Mr. Dean Studer, Hearing Officer

Illinois Environmental Protection Agency

Mr. Kevin Smith, Permit Engineer

IEPA Bureau of Air

Mr. Anatoly Belogorsky, Permit Engineer

IEPA Bureau of Air

Court Reporter: Angie R. Kelly, CSR/CCR

(Starting time of hearing: 7:03 p.m.)

I N D E X

Speakers: Page

Dean Studer.....3

Kevin Smith.....9

Kathy Andria.....17,28

Erika Belmont.....22

Robert Bewkes.....25

E X H I B I T S

(None.)

(On the record at 7:03 p.m.)

HEARING OFFICER STUDER: Before I read my opening statement, I would ask that if you have a cell phone or pager that you please silence it at this time, if you haven't already done so.

Good evening everyone, my name is Dean Studer, and I'm assuming everybody can hear me? My name is Dean Studer I'm hearing officer for the Illinois Environmental Protection Agency. On behalf of the Interim Director John Kim, I welcome you to tonight's hearing. My purpose tonight is to ensure these proceedings run properly, according to rules and are conducted in a fair, efficient manner. Personally, I will not be responding to specific technical issues related to the permits, but will defer such issues to the technical staff with me.

This an informational hearing for Illinois EPA to accept public comments regarding three air pollution control permit applications from United States Steel Corporation, otherwise referred to as US Steel. US Steel operates an existing integrated steel mill located at 1951 State Street here in Granite City.

The primary application and the focus of tonight's hearing is a construction permit application, which addresses an emission reduction project planned for existing equipment at the steel mill. The emission reduction project includes a new control system for particulate emission designed to reduce

particulate emissions from existing operations at the steel mill. This is an opportunity for you to comment on the construction permit.

US Steel has also requested a revision to their operating permit, that is their Clean Air Act Permit Program, and that's otherwise referred to as CAAPP permit, to include the emission reduction project. No other changes are proposed for US Steel's CAAPP permit. Accordingly, the only comments relevant to the CAAPP permit in this proceeding are those involved with the proposed emission reduction project.

Finally, US Steel has requested a revision of a previously issued construction permit that addresses existing operations at the steel mill. The proposed revisions to this construction permit would remove certain requirements from this prior permit that would no longer be appropriate or possible with the new control equipment. As with the CAAPP permit, no other changes are proposed for the revised construction permit. Accordingly, the only comments relevant to the revised construction permit in this proceeding are those involved with the proposed emission reduction protect.

The project will not constitute a modification under the federal rules for Prevention of Significant Deterioration PSD, under 40 CFR 52.21, or Illinois' rules for Major Stationary Sources Construction and Modification, and those state rules are found in 35 Illinois Administrative Code Part 203. The Illinois

EPA has made preliminary determination that requested permits may be issued and has prepared draft permits for public review. The Illinois EPA is holding this hearing for the purpose of accepting comments from the public on the proposed issuance of these permits prior to actually making final decisions on the applications.

The public hearing is being held under the provisions of the Illinois EPA's procedure for permit and closure plan hearings, which can be found at 35 Administrative Code, Part 166, Subpart A. Copies of this procedures can be accessed on the website for Illinois Pollution Control Board at www.ipcb.state.il.us, or can be obtained from me, upon request.

An informational public hearing means exactly that. It is an opportunity for you to provide information to Illinois EPA concerning these permits as previously discussed. This is not a contested case hearing.

I would like to explain how tonight's hearing is going to proceed. First, I will have a Illinois EPA staff introduce themselves and identify their responsibilities within the agency in regard to these permitting action. Mr. Kevin Smith is a permit engineer in the Bureau of Air will then make a brief statement. This will be followed by additional instructions on how I will be taking oral comments during the hearing this evening and then I will allow the public to begin providing comments.

You are not required to provide your comments orally. Written comments are given the same consideration and same weight, and may be submitted to the Illinois EPA at any time during the comment period, which actually started 45 days ago, and goes through August 17, 2012. All comments submitted by mail must be postmarked no later than August 17, 2012. Although we will continue to accept comments through that date, tonight is the only time that we will accept oral comments.

The decision date in this matter by the Illinois EPA will depend upon the number and nature of comments received, as well as other factors.

Any person who wants to make oral comments may do so, as long as the statements are relevant to the issues at hand and time allows. If you have not completed a registration card at this point, please see Michelle Tebrugge at the registration area, and she will provide you with a registration card. Please be sure to mark the appropriate box on the card if you would like to make comments at tonight's hearing. If you have lengthy comments, you may submit them to me in writing before the end of the comment period, and I will ensure that they are included in the hearing record as exhibits.

Again, please keep your comments relative to issue at hand, the emissions and reduction project. If your comments fall outside of the scope of this hearing, I may ask you to proceed to your next issue.

US Steel is also free to respond to issues that are raised, if willing to do so, but I am not in the position to require them to do so. I will not allow the speakers to argue or engage in prolonged dialogue with members of our panel. I also will not allow members of the public to address comments to other members of the public. Comments from the public are to be addressed to the hearing panel and the court reporter.

For the purpose of allowing everyone to have a chance to comment, I ask that everyone keep their comments to nine minutes.

In addition, I'd like to stress we'd like to avoid unnecessary repetition. If anyone before you had already presented what is contained in your comments, please skip over those issues when you speak. Of someone speaking before you has already said what you desired to say, you may pass when I call your name and come forward. Again, we are also accepting written comments, which will become part of the official record in this matter and will be considered.

All who legibly complete a registration card or submit written comments in this matter during the comment period will be notified of the final decision in this matter and of the availability of the responsiveness summary. In the responsiveness summary, the Illinois EPA will respond to all significant issues that were raised at this hearing or submitted to me prior to the close of the comment period. The record in

this matter will close on August 17, 2012. Again I will accept written comments as long as they are postmarked by August 17, 2012.

While the record is open all relevant comments and documents and data will be placed into the hearing record as exhibits. Please send all written documents to my attention, they should be mailed to Dean Studer, Hearing Officer, Office of Community Relations, regarding US Steel Air Permits, Illinois EPA, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois, 62794-9276. The address is also given on the public notice for this hearing tonight.

At this time, again I remind you if you haven't already done so, please silence all cellphones and pagers, if you have not already done so. I will now have the Illinois EPA staff present here tonight to introduce themselves, and then Kevin Smith will make a brief statement regarding permit.

MR. SMITH: Hi, I'm Kevin Smith, permit engineer for the Illinois EPA Bureau of Air Permit Section. I'll be giving an overview of the draft permits for the new baghouse capture and control system for the basic oxygen process furnaces at the US Steel, Granite City works this evening.

MR. BELOGORSKY: Good evening, I'm Anatoly Belogorsky. I am from Illinois EPA Clean Air Act Permit Section, and if you have any further questions about baghouse program I will be available.

MR. SMITH: US Steel has agreed to install a baghouse control system pursuant to agreement between US Steel and Illinois EPA. The purpose of the agreement is to reduce emissions of particulate matter 2.5 from the existing BOP furnace shop. Consistent with the agreement, US Steel submitted an application to construct a new baghouse capture and control system. This permitting process will cover three distinct permitting actions; first a construction permit for the new baghouse capture and control system. Second, modifications to the facilities existing CAAPP permit through the integrated permitting process and third, revisions to an existing PSD permit.

The proposed draft construction permit for the baghouse control system would authorize an emissions reduction project for the particulate matter from the charging and tapping stages of the steel making process for two existing BOPF's at the source. The existing electrostatic precipitator ESP would continue to be used to control particulate emissions from these furnaces during the refining stage of the steel making process.

The permit containing operating limitations, monitoring, recordkeeping and reporting requirements for the capture and control systems that are appropriate for it's design and representative and reliable indicators of the performance of the capture and control system.

Testing is required for the new baghouse control

system and the existing ESP to demonstrate initial compliance with the permit limits; follow-up testing is also required within one year of initial operation of the new baghouse system.

In conjunction with the issuance of the construction permit, Illinois EPA is proposing to authorize certain changes to the conditions in the current CAAPP permit for Granite City Works. This is because the CAAPP permit contains certain requirements for control of the BOP furnaces with the existing ESP that would no longer be feasible or necessary when particulate emissions are controlled by the combination of the new baghouse and existing electrostatic precipitator ESPs that would no longer be feasible or necessary when particulate emissions are controlled by the combination of the new baghouse and existing ESP control systems. Therefore, these CAAPP permit conditions will be replaced with new provisions for the new control configuration. In order to clearly address both current requirements and future requirements for the BOP furnaces, the draft construction permit is being processed by means of the integrated processing procedure.

Consequently, the draft construction permit is subject to procedural requirements that are substantially equivalent to those that apply to CAAPP permits and will provide for future requirements for the furnaces with the baghouse control system as they will be set forth in the CAAPP permit. However, until the new baghouse system begins operation, the basic oxygen

furnaces would continue to be subject to the conditions in Section 7.5 of the current CAAPP permit.

In addition to the modifications of the CAAPP permit, for the new baghouse control system, US Steel has requested to make revisions to an existing PSD, prevention of significant deterioration construction permit. The PSD permit includes conditions for the controlling of emissions from the BOPF with electrostatic precipitator during the charging and tapping metal processing steps. The revised permit would not include operational and other requirements for the BOP furnaces and the existing ESP control system that would be inconsistent with the future operation of the furnaces with both the baghouse and ESP control systems. Revisions to this permit would also include replacement of operational requirements for the BOP furnaces that are now considered obsolete or outdated given new requirements that apply to the furnaces adopted by USEPA. However, these revisions would not involve the emissions limits for the BOP furnaces that were set by this permit.

In summary, US Steel applied for permits for an emission reduction project for the BOPF that will cover a total of three permits including a construction permit for the new baghouse capture and control system, modification to the facilities existing CAAPP permit to incorporate the new construction permit conditions through integrated permitting processing and revisions to an existing PSD permit to reflect

the new control strategy for the BOPF's.

Illinois EPA is proposing to grant the emissions reduction project permits for the facility. We welcome any comments or questions on our proposed action as they pertain to the emissions reduction permit. Thank you.

HEARING OFFICER STUDER: Thank you Kevin. I'll go ahead and give some further instructions on how we take comments this evening.

While the issues raised tonight may indeed be heartfelt concerns to many of us in attendance, applause is not appropriate during the course of this hearing. On a similar note, booing, hissing and jeering are also not appropriate and will not be allowed tonight.

Secondly, I am not going to allow statements to be made tonight that do not relate to the issues involved with the proposed emission reduction project planned for the two basic oxygen process furnaces at the steel mill. Statements and comments that are of a personal nature or reflect on the character or motive of a person or group of people are not appropriate in this hearing. If statements or comments begin to drift into this area I may interrupt the person speaking and ask that they proceed to the next relevant issue. As hearing officer I intend to treat everyone here tonight in a courteous, respectful and professional manner. I ask that the members of the panel and public do the same. If the conduct of persons

attending this hearing should become unruly, I am authorized to adjourn this hearing should the actions warrant. In such a case, the Illinois EPA would still accept written comments through the close of the comment period.

Since we have a limited time in which to conduct this hearing, Illinois EPA staff members will be responding to issues primarily for clarification purposes. We are here tonight to listen to environmental issues. You may disagree with some of the statements and comments made tonight, but this is a public hearing and everyone has a right to express their comments on this matter.

Again, written comments are given the same consideration as oral comments received during the hearing and may be submitted to the Illinois EPA at any time within the public comment period which ends at the end of the day on August 17, 2012. Excuse me, yeah, August 17, 2011. Although we will continue to accept comments through that date, tonight is the only time that we will accept oral comments. Any person who wishes to make an oral comment may do so as long as the statements are relevant to the issues at hand and time allows, as previously discussed.

If you have lengthy comments, please consider giving only a summary of those comments during the hearing and then submitting comments in their entirety to me in writing before the close of the comment period. I will ensure that they

are included in the hearing record as an exhibit. Please keep your comments relevant to the issues at hand. Again, if comments fall outside of the scope of this hearing, I may ask you to proceed to your next issue. For the purpose of allowing everyone to have a chance to comment and to make sure we conduct this hearing in a timely fashion, I will impose a time limit of five minutes per speaker. If everyone has had an opportunity to speak and time still allows, I may allow those who did not initially desire to speak to do so. In the event that we cannot accommodate everyone who wishes to make comments this evening, you are asked to submit your comments to us in writing. Again, written comments are given the same weight as comments made orally at this hearing.

Again, I stress that I want to avoid unnecessary repetition. Once a point is made, it makes no difference if a point is made once or whether it's made 99 times; it will be considered and will be reflected only once in the responsiveness summary. The final decision of Illinois EPA will not be based on how many people support or oppose this project, but rather upon the record and whether the facility will comply with applicable laws, regulations and requirements for permit issuance.

We have a court reporter here tonight who is taking a record of these proceedings for the purpose of us compiling the administrative record. Therefore for her benefit, please keep

the general background noise in the room to a minimum. So that she can hear everything that is said. Illinois EPA will post a transcript of this hearing on our web page in the same general place where the hearing notice, project summary and draft permits have been posted. It is my desire to have this posted in about two to two and a half weeks following the close of this hearing, but the actual date will depend on when I get the transcript back from the court reporter.

When it is your turn to speak, I will call your name to come forward. For the record, you should state your name and if applicable, any governmental mental body, an organization that you represent. If you are not representing a governmental body, an organization or an association, you may simply indicate that you are a concerned citizen or a member of the public. For the benefit of the court reporter, I ask that you spell your last name. If there are alternate spellings for your first name, you may also spell your first name. Once you spell your name, I will start timing you, and you will have nine minutes to complete your comments.

I ask that while you are speaking that you direct your attention to the hearing panel and to the court reporter to ensure that accurate record of your comments can be made. Prolonged dialogue with members of the hearing panel or with others here in attendance will not be permitted. Comments directed to the audience are also not allowed. Again, I remind

everyone that the focus of this hearing is the environmental issues associated with the permits required to address the emissions reduction project planned for the two basic oxygen process furnaces.

People who have requested to speak will be called upon in the order they have registered. Are there any questions regarding the procedure that will be used regarding this hearing this evening?

Let the record indicate that no one raised their hand. With that, the first person is Erika Belmont. If you would come forward to the podium please.

MS. BELMONT: (Inaudible)

HEARING OFFICER STUDER: Well, we are going in this order, but if you want to pass and come back. We've only got a few people that have registered, we can do that.

MS. BELMONT: Sure.

HEARING OFFICER STUDER: The other person that registered next was Robert Bewkes.

MR. BEWKES: I'll pass also.

HEARING OFFICER STUDER: Okay. The next person that registered is Kathy Andria. Kathy, you may have to turn the switch on on that mike, I think I left it off while I was speaking. You've got it. It's kind of temperamental with the podium set up the way it is. It's kind of hard to get your voice to project. I'll turn you up if need be. With your back to the

audience, sometimes it's hard for them to hear.

If you're sitting out here and you can't hear what is said, please let me know. Okay.

MS. ANDRIA: My name is Kathy Andria, Kathy with a K, A-N-D-R-I-A. I am president of American Bottom Conservancy. Member of Sierra Club, National Clean Air Committee member of Illinois EPA Environmental Justice Advisory Group. I want to thank you and US Steel for reaching a Memorandum of Understanding to install a baghouse to control fine particulate emissions coming from the basic oxygen furnace at the Granite City working facility.

The St. Louis area has been unable to meet federal air quality standards for fine particulates for far too long. Both US EPA and IEPA point to US Steel as the primary contributor. IEPA thinks the problem may be basic oxygen furnace, known at BOPF, and that's why we're here.

According to the US EPA website, the size of particulate directly linked to the potential for causing health problems. Small particles less than 2.5 microns in diameter pose the greatest problem because they can get deep into your lungs. Some may even get into your bloodstream. Exposure to such particles can affect both your lungs and your heart. Particle pollution, especially fine particles, contain microscopic solid or liquid droppings that are so small that they can get deep into the lungs and cause serious health

problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including premature death in people with heart and lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung functions, and increased respiratory symptoms such as irritation of the airways, coughing and difficulty breathing.

People with heart or lung diseases and children and older adults are the most likely to be affected by particle pollution exposure. However, even if you were healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution. There are scientific studies that show the fine particles are more strongly associated with acute respiratory health effects in school children than course particles. Studies show that they contribute to or exacerbate heart and lung disease and indeed may cause asthma in young children. There's even a new study that shows that fine particle contribute to dementia or Alzheimer's. And as the EPA website states, PM 2.5 can cause premature depth.

The Granite City area has way more than it's share of young children with asthma, ask any school nurse. We have more than our share of people with heart and lung disease. The percentages of those living in poverty and the minority residences within five miles of the facility are significantly higher than national state and county averages creating environmental justice concerns. There are also significantly

higher percentages of children and elderly.

In addition, approximately 365,000 people using Horseshoe Lake State Park annually for recreation, including biking, hiking, fishing hunting and picnics. Horseshoe Lake sits right next to the facility.

It is important to know the difference between course particles known as PM 10, and the more dangerous or fine particles, or PM 2.5, which can inhale deep into the lungs and even pass into the bloodstream. I make these two points again, because this permit fails to differentiate between the two. All particles are lumped together as PM, and there is no limit in the permit on PM 2.5. There is a mention of fine particulates that are required to submit a onetime report of PM 2.5 presumedly for purposes of the state implementation plan or SIP, but there is no ongoing accountability for fine particulates, and I'd like to know why.

With current BOF controls and ESP or electrostatic precipitator the PM emissions are reported to be 439.5 tons per year. After installing the new baghouse, they would leave 405.4. That is 405 tons of tiny detonate particles a year. A particle that is 30 times smaller than the human hair. It boggles my mind to imagine 400 tons of deadly particles that are so small that several thousand can fit on the end of the period at the end of the sentence.

The baghouse installed on the new Gateway Coke plant

is required to remove 99.9 percent of the PM 2.5 emission. The baghouse proposed to be used for the BOF has only a 97 percent removal. Is this the best baghouse available for BOF? Is this the best filter available? Are the full capabilities of the baghouse going to be used? What is the manufactures stated capability, and how does it compare to the most protected one?

There are there processes in the BOF, charging, tapping and refining. The new baghouse would control emissions from tapping and charging, but emissions from refining would be controlled by ESP. Is there a reason the baghouse can't also control the refining emissions? While we were truly grateful a baghouse will be installed, the big question is can we do better.

It has taken many years to get to this point. As long as the company is installing a new baghouse, why not install the most protective one available so that the greatest emission reduction can be made. It will be more protective of our children and our elderly, and perhaps the area can truly get to obtain and meet the federal air quality standards. Thank you for considering my comments. I would like to pursue answers to my question after other people have had an opportunity to comment, so I will reserve the balance of my time.

HEARING OFFICER STUDER: Thank you Miss Andria.

Amy Funk?

MS. FUNK: Pass.

HEARING OFFICER STUDER: Mark Feldor? Nope, okay.

We've gone through those that have registered that they want to speak. There were two people that I had passed early on, they said they wanted to reserve their comment, passed initially. I'll go back to those two folks. Following those two, I will ask if there's anyone else here that has not spoken that would like to do, so then we'll see how much time we have, continue with that.

Erika Belmont, did you want to speak at this point?

MS. BELMONT: Hi. My is Erika Belmont. Erika with a K. B-E-L-M-O-N-T. I'm working with the Washington University interdisciplinary law clinic, which is working with American Bottom Conservancy. I have a few questions about the permit application.

US EPA has certified numerous fabric filters that achieve a 99.99 percent removal efficiency for PM 2.5. According to US Steel, the proposed new baghouse for the basic oxygen furnace will have a 97 percent PM removal efficiency. Could US Steel be achieving a higher removal efficiency? If so, is there a reason that it's not doing so.

MR. SMITH: First, the baghouse permit application is an application that was submitted by US Steel pursuant to an agreement for emissions reduction project for additional control of the facility. There were no state or federal requirements mandating that they put this in. The 97 percent control

efficiency is a continuously attainable control efficiency that they have agreed to meet, whether the baghouse will do better or not, will be determined at the time of testing.

MS. BELMONT: Thank you. I also have questions concerning pendency of application. There is just some gaps in it's description of the proposed baghouse that make it difficult to evaluate the draft permit, and I'll go through.

In the air pollution control equipment data information, the manufacturer of control equipment is marked to be determined. There is no fabric filter model emissions. Also in the supplemental form air pollution control equipment filter, the filter materials description is limited to polyester. The filtering area is also to be determined. There are unknown inlet emission stream parameters, and there is an unknown mean particle diameter. I was just the wondering if there were any reasons why these detail are not provided or marked the way they were? Has IEPA obtained anymore information for the fabric filters such as the model, supplier, filter area or details concerning the operation of the baghouse filter?

MR. SMITH: I don't believe we have received any additional information of the manufacturer of the baghouse yet. The Memorandum of Understanding required an emissions limit of 0.005 units per dry standard cubic foot. As long as they meet that requirement, the requirements said, met the requirements they we put before them, whether they do it with brand A or

brand B of baghouses, doesn't matter as much, as actually meeting the emissions limit put forth.

MS. BELMONT: I also just have some questions about emissions limits. Although the Memorandum of Understanding has between IEPA and US Steel set emission limits for total PM, is that the only reason why the draft permit does not include a PM 2.5 emission limit?

MR. SMITH: We'll have to get back to you on that one, if that's okay.

MS. BELMONT: Okay. Given that the purpose of the baghouse is to reduce PM 2.5 emissions that this area is non-attainment for PM 2.5 and could well be non-attainment under proposed revised PM 2.5 ambient air quality standards, is there anything that prevents IEPA from putting a 2.5 PM limit in the permit.

MR. SMITH: The permit as drafted reflects the agreement between Illinois EPA and US Steel Corporation. The Memorandum of Understanding didn't include such, so for now, there isn't one in the permit.

MS. BELMONT: Just one more question. Do any steel mills have PM 2.5 unit for BOP shop emission limits?

MR. SMITH: Any other in the state, world?

MS. BELMONT: Country, maybe?

MR. SMITH: I don't know, we would have to get back to you on that.

MS. BELMONT: Okay.

HEARING OFFICER STUDER: Well, thank you for your time.

MR. SMITH: You're welcome. Thank you.

HEARING OFFICER STUDER: Just as clarification, we'll only be responding to those in the State of Illinois on that. We're not going to do a worldwide search on something like that, when it's outside of our jurisdiction.

MS. BELMONT: Okay.

HEARING OFFICER STUDER: Robert Bewkes, do you want to speak?

MR. BEWKES: Yes. Good evening. My name is Robert Bewkes B as in B E-W-K-E-S. I'm a summer intern at the Washington University Interdisciplinary Clinic working with American Bottom Conservancy.

My question is concerning the permit. We realize the Memorandum of Understanding between IEPA and US Steel set emission limits for total PM, is that the only reason why the draft -- I'm sorry, that was her question. Let me start over.

The permit does not set the emission limits for PM 2.5, even though the key purpose of installing the baghouse is to reduce PM to 2.5 emissions. The permit does test for emissions for PM 2.5, we're not questioning that you have emission testings. Our question is, what use do you plan to make of the testing results?

MR. SMITH: We in general use test results for other

similar facilities when they were going to make modifications at similar facilities in the state. We can use the testing in that manner, or just generally make sure they're in compliance with the permits. Does that answer your question?

MR. BEWKES: Sure, thank you. In condition 3-2(a) of the permit requires US Steel to make measurements in order to control PM efficiency of the BOF baghouse. The permit allows for measurements to be made directly or indirectly. Would direct measurement likely be more accurate than indirect? If so, why not require direct measurement?

MR. SMITH: Actually, I'm not an expert on testing procedures, so we'll have to defer that question for our model unit, when we get back.

MR. BEWKES: Thank you. Next question concerns section 3-1 (b)(ii) of the construction permit. Is EPA method 201 capable of testing for filterable PM 2.5, or does it just test for PM10?

MR. SMITH: Again, that would be a question for model unit.

MR. BEWKES: Okay, I'll just finish the question. Is method 201A capable of testing for filterable PM 2.5 and PM 10? The permit requires US Steel to test for filterable PM 10 and PM 2.5.?

HEARING OFFICER STUDER: We'll let you go ahead and ask the question dealing with procedure, but we're not going to be

able to answer those at the hearing, but we will respond to those in writing. So go ahead and read them into the record so that we've got them.

MR. BEWKES: Okay.

HEARING OFFICER STUDER: When you've got a question for the hearing panel.

MR. BEWKES: Why give the option of 201 when it does not test for PM 2.5? Why not limit the testing to method 201A which tests for both PM10 and PM 2.5?

My next question for the hearing panel. In condition 3-1 (e)(iii) of the construction permit, there's a requirement that the permittee submit the final report to Illinois EPA after emissions test containing proposed operating parameter limits that's based on emission testing when applicable. Under what circumstances are proposed operating parameters limits considered applicable? When proposed operating parameter limits are submitted, what is the procedure and timeframe in which IEPA reviews and establishes them?

MR. SMITH: I can answer this question in part, probably need something more detailed in writing, but the operating parameter that would be established based on the test, would be how the baghouse control system remained operate during the testing. That will ensure that there is consistent and repeatable use of the baghouse control system, and the operation of the basic process that coincides to that operation, while the

testing was going on, so that we can be relatively assured that the emissions from the control system will be consistent because we'll be operating in the same manner

MR. BEWKES: And you'll get that procedure on timeframe?

MR. SMITH: Yes.

HEARING OFFICER STUDER: We'll get back, it will be in response to summary for the hearing. Once a comment is made on the record, it's the policy of Illinois EPA to put those in the response of summary. We don't communicate back with people for additional partial responses while the record is still open.

MR. BEWKES: Thank you.

HEARING OFFICER STUDER: We have one more person that has indicated she would like to have additional time, but before we go back and go back to those that have already spoken, I want to ask if there's anyone here that has not spoken this evening, that would like to make a comment on the record.

Let the record indicate that no one raised their hand. Kathy wanted some additional time, so if Ms. Andria would come forward.

MS. ANDRIA: We'll I'm confused, you said Kevin in answer to I think Robert's question about why you would, what you were going to use the results for, to see if they were in compliance with permit limits, but there aren't any permit limits, am I understanding this right?

MR. SMITH: There are permit limits.

MS. ANDRIA: For 2.5?

MR. SMITH: For .005 units.

MS. ANDRIA: Could you explain to me why since there's such an incredible difference between PM 2.5 and PM 10, why you're not breaking them down, why there are no limits.

MR. SMITH: I think I answered that already.

MS. ANDRIA: I didn't understand.

MR. SMITH: I can give you a more complete answer in writing, if you'd like, otherwise my answer is already on the record, it pertains to the Memorandum of Understanding and the agreement between US Steel and Illinois EPA.

MS. ANDRIA: So you are precluded of imposing limits by your construction permit?

HEARING OFFICER STUDER: I think what Kevin is saying, we'll consider it. You are free to also submit additional comments on this matter during the comment period, but we will consider it. The issue is that there is more than just the two people that are up here tonight that have participated in this permit, and we will need input from those additional staff people to adequately address that question. Not as easy as it may seem.

MS. ANDRIA: Let me ask you this: In terms of a normal permit, suppose there are memorandums of understanding, would you be free to put limits on PM 2.5 on monitoring the air?

MR. SMITH: I'm not sure if that relates to tonight's discussion, I'll have to get back to you on that one.

MS. ANDRIA: Do you have other PM 2.5? I mean, do you ever put PM 2.5 limits on anything?

MR. SMITH: Yes, we do.

MS. ANDRIA: What circumstances would they have to meet to put PM 2.5 limits?

MR. SMITH: I think you're asking the same question again, which I've already answered. I'll have to get back to you.

MS. ANDRIA: Because that's very, to me, I mean, I am thrilled that there's going the be a baghouse, but I am very, very troubled that there's no PM 2.5 limits, that is my biggest concerns, I will go to some of my other.

HEARING OFFICER STUDER: Can I clarify your question, make sure we responded correctly to it in writing. Is your question under what conditions and what circumstances we would put a 2.5 PM limit in a permit, is that it?

MS. ANDRIA: Yes, because right now, the answer to why they didn't is because there, it's not in the memorandum agreement, but a Memorandum of Understanding, but it seems to me reading the permit of construction permit that there's a heck of a lot that's not in the Memorandum of Understanding, so you choose not to put it in. I'm trying to figure out why, because you put a lot of other things in.

Okay. You said that you when you answered Robert's one question about comparing it to other facilities, and I'm not sure, did you answer Erika's question on are there other manufacturers, are there other units that can get better than 97 percent removal?

MR. SMITH: I believe I did answer that, and the 97 percent removal was part of the agreement. The baghouse may get better than that, but that was the requirement under the Memorandum of Understanding.

MS ANDRIA: And again, you can't because of the agreement, you can't require anything more stringent in a non-attainment area?

MR. SMITH: Again, I think that goes back to the same type of questions, with the 2.5, we'll just have to get back to you on that one.

MS. ANDRIA: And are you -- you mentioned that you compared other facilities in the state, I think you mentioned something that other than just in the state, are there other facilities like this in the state that you're written construction permits for a baghouse?

MR. SMITH: You mean other steel production plants?

MS. ANDRIA: Correct.

MR. SMITH: I have written permits for electric arc furnace.

MS. ANDRIA: That would not be the same BOF process?

MR. SMITH: BOF is different than an electric arc furnace.

MS. ANDRIA: We don't know who the manufacturer is, or we aren't supposed to address the people, but perhaps US Steel might want to answer these questions. If they don't, that's fine, but they know they're here if they're interested in answering any of the questions, we would be appreciative.

HEARING OFFICER STUDER: If a member from US Steel wants to address the questions, they may raise their hand during this. Otherwise, if not, we'll continue. I'm not in a position to be able to require them to answer it at this point.

MS. ANDRIA: I understand.

HEARING OFFICER STUDER: But you can go ahead and state the question on the record, if you will.

MS. ANDRIA: Well, the nature of the filter, if there are other filters that can get better percentages, how protective, you know, that's what I'm trying to get the best percentage removal. We got Gateway Coal to do the 99.9, we got so many kids with asthma, and that's what we're really after. I mean we're thrilled that we're finally getting the baghouse, believe me, but I just think you know, they're spending the money for this, and we are going to put new standards on PM 2.5. We're in like a little window, not going to be attaining it, just seems like this is the appropriate time to just do it and get it done. Might not happen again for a long time.

Then I have another question and maybe US Steel might want to answer. I said this, but I didn't wait for an answer. About the three processes in the BAF charging, capping and refining. The baghouse would control emissions for capping and charging, but the emissions for the refinery would be controlled by the ESP, and I asked Kevin and then if US Steel would care to answer, but Kevin doesn't know, is there a reason the baghouse can't also control the refining issues?

MR. SMITH: The requirement in my understanding is that the baghouse control will be charging and capping portions of the refining process.

MS. ANDRIA: This all goes back to the Memorandum of Understanding, is it your answer?

MR. SMITH: That question is yes.

MS. ANDRIA: And so, anyway, I would like to then ask if US Steel would like to answer any of my questions, thank you very much.

HEARING OFFICER STUDER: Is there anyone that has not spoken this evening, that wants to publically make a statement on the record this evening? Okay. Let the record indicate that there was none.

I remind everyone here the hearing record is open until August 17, 2012, and we will be accepting written comments through that date, as long as they are postmarked no later than August 17. I thank all of you for coming to this hearing this

evening, and for coming out on this very warm, hot evening. Thank you I appreciate it, have a good evening. This hearing adjourned.

(Whereupon, the hearing adjourned at 7:57 p.m.)

CERTIFICATE OF REPORTER

STATE OF ILLINOIS)
) Ss.
COUNTY OF MADISON)

I, Angie R. Kelly, a Certified Shorthand Reporter (IL), and a Notary Public within and for the State of Illinois, do hereby certify that the meeting aforementioned was Held on the time and in the place previously described.

IN WITNESS WHEREOF, I have hereunto set my Hand and seal.

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Notary Public within and for

The State of Illinois

DOCUMENTS FOR COMMENT PERIOD
R009883

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

May 2012

Project Summary for the Planned Issuance of a Revision to Construction Permit/PSD Approval 95010001 to Accommodate an Emissions Reduction Project at United States Steel Corporation's Granite City Works Granite City, Illinois

Source Identification No.: 119813AAI
Construction Permit Application/Permit No.: 95010001

Schedule
Public Comment Period Begins: May 31, 2012
Public Hearing: July 18, 2012
Public Comment Period Closes: August 17, 2012

Illinois EPA Contacts
Permit Analyst: Kevin Smith
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Attachments

Attachment 1: Summary of Proposed Revvisions to Permit 95010001

Attachment 2: Mark-Up Showing Planned Changes to Permit 95010001

I. Introduction

United States Steel Corporation, Granite City Works (US Steel) has requested revisions to Construction Permit/PSD Approval 95010001, originally issued in 1996 for increases in production of iron and steel at the Granite City Works. The principal purpose of the revisions to this permit is to accommodate an emission reduction project that US Steel is planning, with the installation of new particulate control equipment for the two basic oxygen process (BOP) furnaces at this steel mill. This emission reduction project is the subject of a separate application for a construction permit, Application 11050006. The revisions to the Construction Permit/PSD Approval 95010001would remove certain operational requirements for the BOP furnaces from this prior permit that would no longer be appropriate or possible with the new control equipment. The revisions to this prior permit would also remove operational requirements for these furnaces that are now considered obsolete or outdated given new requirements that apply to the furnaces, notably new standards for BOP furnaces adopted by USEPA. However, the revisions would not involve the emission limits for the BOP furnaces that were set by this permit. The revisions to the permit also would not involve requirements for these furnaces that are set by rule.

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed US Steel's request for revisions to Permit 95010001 and made a preliminary determination that it meets applicable requirements for revisions to the permit. Accordingly, the Illinois EPA has prepared a draft of the revised permit that it would now propose to issue. Before issuing this revised permit, the Illinois EPA is holding a public comment period and a public hearing to receive comments on the proposed issuance of a revised permit and on the proposed changes to the permit, as set forth in the draft of a revised permit.

II. Description of the Planned Emission Reduction Project for the BOP Furnaces

In the planned emission reduction project for its two existing BOP furnaces, US Steel will construct a new control system to improve the control of particulate emissions from the furnaces. The new control system will have a baghouse and control particulate emissions from charging and tapping of the BOP furnaces. Charging is the step in the steel production cycle in a BOP furnace in which scrap metal and molten iron from the blast furnaces are charged to the furnace. Tapping is the step in the cycle in which the molten steel made in a furnace is poured into a ladle to await further processing and casting. The particulate emissions of the BOP furnaces from the refining step of the production cycle will continue to be controlled by the existing electrostatic precipitator (ESP) control system.[1]

The particulate emissions that accompany charging of the BOP furnaces are currently captured with local capture hoods in the area where emissions occur during charging. These hoods are currently ducted to the existing ESP, which removes particulate from the air that is drawn in by the hoods ("aspiration air") before this air is discharged to the atmosphere. Emissions from tapping of the furnaces are currently captured with the covers on the furnaces, which extend over into the area in which tapping takes place. The covers on the hoods are also ducted to the existing ESP. Flame

[1] The control of particulate emissions from refining is facilitated as the lance holes on the BOP furnaces are equipped with "steam rings." The injection of steam into the space between the roof of the furnace and the oxygen lance acts to reduce loss of particulate through this space during refining.

suppression is also used to reduce the generation of emissions from tapping. The emissions of particulate from charging and tapping of the BOP furnaces that are not captured are released to the interior of the BOP furnace shop, the large building that houses the furnaces. The uncaptured particulate emissions that do not settle out within the furnace shop are emitted to the atmosphere, mainly through the open roof monitor at the peak of the roof on the shop.

The new baghouse control system for charging and tapping will be separate from the existing ESP control system. The effectiveness of the existing local capture hoods for charging will be improved and these hoods will be ducted to the new baghouse. New local capture hoods would be installed specifically for tapping and these hoods will also be ducted to the new baghouse. As the new baghouse control system would improve control of charging and tapping emissions of the BOP furnaces, it would improve control of the "secondary emissions" of the furnaces.[2] When the new control system is complete, only the emissions captured by the covers on the BOP furnaces, which control emissions from the refining step in the steel production cycle, will go to the ESP.[3]

For tapping, the baghouse control system will also replace the use of flame suppression. In flame suppression, gas burners are used to reduce generation of particulate by depleting the level of oxygen in air that comes in contact with the molten steel. With the local capture hoods for tapping, the continued use of flame suppression would be unsafe, posing a hazard both to personnel and equipment, as well as being of uncertain effectiveness. This is because the high levels of draft provided by the local capture hoods would interfere with the stability and orientation of the flame, as well as posing risk of flame outs.

The installation of the new baghouse system will also act to improve control of the primary emissions from the BOP furnaces from the refining step. This is because the air flow to the ESP, which would no longer include aspiration air for charging and tapping, would be reduced. This reduction in air flow will improve the control efficiency of the ESP due to the increase in air residence time in the ESP.

The installation of this new baghouse control system is provided for by a Memorandum of Understanding between US Steel and the Illinois EPA (Agreement).[4] US Steel has submitted an application for a construction permit for this new control system, Application 11050006. The Illinois EPA is processing that application in parallel with this application for revisions to Permit 95010001.[5] The Illinois EPA has completed its preliminary review of the construction permit

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[2] Particulate emissions from charging and tapping of BOP furnaces are referred to as "secondary emissions," as distinguished from the emissions from refining, which are referred to as "primary emissions."

[3] The draft construction permit for the baghouse system would allow the existing ESP system to be used for control of secondary emissions from the BOP furnaces on a temporary basis. This would accommodate a catastrophic failure of the baghouse, which would take it out of service for an extended period.

[4] United States Steel Corporation Granite City Works and IEPA: Memorandum of Understanding, effective July 1, 2010, when signed by Douglas Scott, Director of the Illinois EPA.

[5] The Illinois EPA previously issued a construction permit for this new baghouse control system on August 31, 2011. However, US Steel challenged the issued permit, filing a Petition for Review with the Pollution Control Board on October 10, 2011. That permit was challenged on both technical and procedural grounds.

In response to this appeal, the Illinois EPA has further considered the application for this project, Application 11050006. The construction permit that the Illinois EPA now plans to issue for the new baghouse system and the administrative procedures that the Illinois EPA would use to process this permit

application for the new baghouse control system and prepared a draft of a construction permit pursuant to that application.

Pursuant to 40 CFR 63.7825(a)(1) of the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF, the particulate emissions of the new baghouse for the BOP furnaces would be subject to a limit for particulate matter (PM) emissions of 0.01 grains per dry standard cubic foot (gr/dscf).[6] A more stringent limit, 0.005 gr/dscf, is set for this new baghouse by the Agreement.[7] Like the limits of this NESHAP, the limit set by the Agreement addresses emissions of filterable particulate matter as would be measured by USEPA Methods 5, 5D or 17. The addition of the baghouse control system would not change other applicable emission standards that currently apply to the BOP furnaces or to the existing ESP under this NESHAP or state rules.[8] In particular, the PM emissions of the existing ESP for the BOP furnaces would continue to be subject to a limit of 0.02 gr/dscf, pursuant to this NESHAP, 40 CFR 63.7825(a)(1).[9] However, Section 2(b)(i) of the Agreement provides that the ESP must meet a more stringent limit, 0.01 gr/dscf.

III. Background on Permit 95010001

In January 1996, National Steel, the former owner of the Granite City Works, was issued Construction Permit/PSD Approval 95010001 for an expansion project. The project involved increases in the production of iron from the two existing blast furnaces at this steel mill and an increase in the production of steel from the two existing BOP furnaces. The permit provided approval to undertake the project pursuant to state laws and rules governing construction and modification for sources of emissions. This permit also provided approval for the project pursuant to the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This approval was required because the project was determined to be a major modification for emissions of sulfur dioxide (SO_2) and carbon monoxide (CO), i.e., the potential increases in emissions of these pollutants from the project, as addressed by the permit application, were significant.[10] The project was not a major modification under PSD for other pollutants regulated by PSD because the net increases in emissions of those other pollutants were not significant. For

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are intended to appropriately respond to the issues presented by US Steel in its appeal.

[6] This limit, 0.01 gr/scf, is the standard for PM in Table 2 of 40 CFR 63 Subpart FFFFF for a control device like the planned baghouse, which will be applied solely to "secondary emissions" from BOP furnaces in an existing furnace shop.

[7] This limit, which is provided for by Section 2(c) of the Agreement, is slightly more stringent than the NESHAP standard for a control device for secondary emissions from BOP furnaces at a new furnace shop, 0.0052 grains/dscf.

[8] The BOP furnaces are subject to the following standards pursuant to 40 CFR 63.7825(a)(1): 0.02 gr/dscf for the ESP and 20 percent opacity, 3 minute average, for the furnace shop roof monitor.

The existing ESP is also subject to an operating limit, 10 percent opacity, hourly average, pursuant to 40 CFR 63.7790(b)(3).

The BOP furnaces and the BOF shop are also subject to certain process-specific state emission standards, i.e., 35 IAC 212.446(a) and (c) and 212.458(b)(23).

[9] This is the PM emission limit in Table 2 of 40 CFR 63 Subpart FFFFF for a control device, like this ESP, which is a primary emission control system for existing BOP furnaces with open hood systems.

[10] The PSD rules, at 40 CFR 52.21(b)(23)(i), define significant emission rates for pollutants regulated under these rules. The significant emission rates for SO_2 and CO are 40 and 100 tons/year, respectively.

emissions of PM_{10}, this project was also not a major modification under Illinois' rules for Major Stationary Sources Construction and Modification (MSSCAM), 35 IAC Part 203, because the net increase in PM_{10} emissions was not significant. [11]

Because the nonapplicability of PSD and MSSCAM for this project depended on the permitted emissions of various operations at the mill, the construction permit for the project set limits on emissions of relevant pollutants from the various operations affected by the project.[12] For the BOP furnaces, limits were set for emissions of particulate matter (PM) and particulate $matter_{10}$ (PM_{10}), as well as certain other pollutants. These limits were accompanied by detailed requirements related to the operation of the BOP furnaces and the existing ESP control system. The purpose of these detailed requirements was to ensure proper operation as was believed to be necessary for the PM and PM_{10} emissions of the furnaces to comply with the limits that had been established. For example, use of flame suppression was required for control of emissions of tapping. Default values were established for the "minimum set points" or minimum air flow to the ESP when a single BOP furnace was in operation and when both furnaces were in operation. The detailed operational requirements established for the BOP furnaces were also accompanied by compliance procedures, i.e., requirements for emission testing, operational monitoring and recordkeeping that were intended to provide verification of compliance with the substantive operational requirement.

The detailed operational requirements for the BOP furnaces were generally based on the physical configuration of and other circumstances of the furnaces at the time that the construction permit was issued. Only minor consideration was given to accommodating future changes in the configuration and circumstances of the furnaces. In this regard, while Condition 12(c) of the construction permit did contemplate the establishment of alternative set points for the ESP control system in the future, it did not identify the administrative procedure by which such alternative set points would be approved by the Illinois EPA. The construction permit did not provide for other changes to the detailed operational requirements for the BOP furnaces to address future circumstances.

IV. Proposed Revisions to Permit 95010001

To accommodate the emission reduction project for particulate emissions that US Steel is now planning for the two BOP furnaces, US Steel has applied for revisions to Permit 95010001. The requested revisions to this permit would not affect the emission standards and emission limits that currently apply to US Steel's BOP furnaces. The revisions to this existing construction permit would generally involve removing operational requirements that are already outdated or would become outdated or infeasible with the new baghouse control system. Actual revisions to the permit would provide certainty about the requirements that will apply to the BOP furnaces with

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[11] In 1996, the Granite City area was designated nonattainment for PM_{10} air quality. Accordingly, given nonattainment status for PM_{10}, PSD was not applicable to the project for PM_{10} emissions as a matter of rule. Instead, for PM_{10}, applicability of Illinois' rules for "Nonattainment New Source Review," i.e., Major Stationary Sources Construction and Modification (MSSCAM), 35 IAC Part 203, had to be and were addressed. The project was not a major modification for PM_{10}, with a net increase in PM_{10} emissions that was less than 15 tons/year.

[12] The construction permit also set production limits for the mill, including limits on the production of iron by the blast furnaces and the production of steel by the BOP furnaces.

this new control system. In the absence of such revisions, questions and disagreements could occur in the future about which operational requirements for these furnaces in this permit should be considered outdated, either at present or later after emissions begin to be controlled with the new baghouse control system. Actual revisions to the construction permit should eliminate any question as to whether any operational requirements of this permit are still applicable for the BOP furnaces.[13]

Most importantly, the revisions to Permit 95010001would remove certain operational requirements for the BOP furnaces that would no longer be appropriate with the planned project. For example, the current CAAPP permit contains limits originating from Permit 95010001 for the minimum air flows to the ESP during charging and tapping of the BOP furnaces. It also does not allow for the charging of hot metal to one furnace and initial part of tapping in the other furnace to occur at the same time. These requirements would no longer be relevant when charging and tapping emissions are controlled with the new baghouse system, rather than the existing ESP system. This is because the ESP would not be controlling these emissions. The new baghouse system will also be designed with sufficient capacity to control charging of one furnace and simultaneous tapping of the other. It is reasonable for Permit 95010001 to be revised as it would provided further clarity and certainty on operational requirements that would no longer apply when the new baghouse system begins controlling emissions of the BOP furnaces.

The revisions to the existing construction permit would also remove operational requirements for the BOP furnaces that have been made obsolete by new regulatory requirements that apply to the furnaces. In 2003, USEPA adopted new rules for BOP furnaces, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF. This NESHAP establishes operational requirements for capture systems and control devices for secondary emissions from BOP furnaces. From a technical perspective, certain operational requirements of the NESHAP, while similar to those of the construction permit, better address proper operation of emission control systems. As related to capture of secondary emissions, the NESHAP addresses the operation of the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack of the particulate control device. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOFs or their associated control systems. In addition, the NESHAP reflects a better approach to other operational requirements, as it places the burden for establishing the specific measures that will be implemented to ensure proper operation of the capture systems and control devices for BOP furnaces on the source, rather

[13] While US Steel indicated in its initial application for a construction permit for the emission reduction project, Application 11050006, that it was requesting a revision to Permit 95010001, it did not submit a separate application for a revision to this permit. US Steel has now submitted a separate application for revision of Permit 95010001. This application is being processed separately from the construction permit application for the emission reduction project. This will enable the revision to Permit 95010001 to be subject to the administrative procedures that commonly apply to processing of PSD permits, 40 CFR Part 124, Procedures for Decisionmaking, rather than the administrative procedures that apply for a construction permit that is being subjected to integrated processing. Handling of the revision to Permit 95010001 in this way should eliminate any doubt that the outdated provisions of the PSD approval are no longer applicable.

than on the permitting authority.[14]

Finally, the revisions to the existing construction permit would accommodate an approach to future permitting of the BOP furnaces that would be consistent with permitting under Title V of the Clean Air Act and Illinois' CAAPP program, as they require that a CAAPP permit provide for Periodic Monitoring for the various units at a source. This requirement for Periodic Monitoring provides for regular review and appropriate refinement and evolution of the operational requirements for the BOP furnaces as part of the periodic renewal of the CAAPP permit for the Granite City Works. In this light, certain operational requirements established by the Permit 95010001are now generally considered to be inappropriate as they address matters that should be dealt with in the CAAPP permit as an aspect of Periodic Monitoring. Moreover, operational requirement established by Permit 95010001 should not act as an impediment to future improvements in control of emissions of the BOP furnaces, of which the planned emission reduction project should only be considered one example. Rather emission reduction projects for the BOP furnaces should be able to be approved by the processing of appropriate permits for such projects (either construction permits or revisions to the CAAPP permit for the mill) without having to separately revise this historical construction permit to address its operational requirements.

In this regard, it should also be noted that many of the requirements that are proposed to be removed from Construction Permit 95010001 are included in the current CAAPP permit for the Granite City Works.[15] The planned removal of these requirements from this construction permit, as is proposed, will not act to terminate the effectiveness of those parallel requirements in the CAAPP permit. A separate revision to the CAAPP permit is needed to terminate the parallel requirements in the CAAPP permit. For this purpose, the Illinois EPA plans to authorize the related revisions to provisions of the CAAPP permit as part of the issuance of a construction permit for the new

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[14] In the case of the BOP furnaces at the Granite City Works, a further concern is posed by the similarity of certain operational requirements of the NESHAP, 40 CFR 63 Subpart FFFFF, and certain operational requirements of Permit 95010001. The similarity of these operational requirements would act to make implementation and oversight of the parallel requirements of Permit 95010001 more difficult and resource intensive. To the extent that the operational requirements of this NESHAP serve to address and satisfy relevant compliance concerns for these furnaces, that is, proper operation of their capture systems and control devices, it is preferable for only the operational requirements of the NESHAP to be applicable, rather than the requirements of both the NESHAP and Permit 95010001. Permit-based operational requirements should only be imposed for these furnaces as necessary to address particular aspects of compliance that are not adequately addressed by the NESHAP.

[15] Certain requirements of Construction Permit 95010001 have been incorporated into the CAAPP permit for the Granite City Works. This is because this construction permit was issued pursuant to Title I of the Clean Air (as well as state authority under the Environmental Protection Act). Accordingly, during the processing of the CAAPP application for the Granite City Works, the Illinois EPA reviewed the conditions of Construction Permit 95010001 to identify requirements that should be considered applicable requirements. Certain requirements, which were considered to be relevant to the ongoing operation of the Granite City Works, were copied and included in the CAAPP permit. Other requirements, which were considered to be patently obsolete or otherwise inappropriate for inclusion in the CAAPP permit, were not transferred into the CAAPP permit. USEPA discusses this aspect of the processing of CAAPP applications in its "White Paper for Streamlined Development of Part 70 Permit Applications," USEPA, Office of Air Quality Planning and Standards, July 10, 1995.

baghouse control system.[16]

VI. Draft of Revised Permit 95010001

The Illinois EPA has prepared a draft of the revised Permit 95010001 that it would propose to issue to accommodate the planned emission reduction project. A detailed discussion of the various changes that would be made to the construction permit is provided in Attachment 1 of this Project Summary. The planned revisions to the permit are broadly focused on facilitating the new baghouse control system that is planned for the BOP furnaces, as well as other future projects that would act to reduce emissions of the furnaces. The planned revisions would not affect applicable emission standards or emission limits set for the BOP furnaces.

Since the bulk of the revisions to the permit would involve removal of conditions from the permit that are now out-dated, a version of the draft permit that shows the planned changes is provided as Attachment 2 of this project summary. This attachment is a "marked up" or "tracked changes" version of the historic permit showing planned changes to accommodate the planned emission reduction project. Conditions and language that would be removed from the permit are struck out or interlined. Conditions and language in the permit that would not be changed are not marked. Conditions and language that would be added to permit are underlined. Certain additions to the construction permit would be explanatory, as they would indicate where certain conditions have been removed from the permit. These explanatory notes that would be added to the permit are provided within parentheses.

VII. Request for Comments

It is the Illinois EPA's preliminary determination that the application for revisions to Construction Permit/PSD Approval 95010001 meets applicable state and federal air pollution control requirements, subject to the conditions in the draft of the revised construction permit. The Illinois EPA is therefore proposing to issue a revised permit, as requested by US Steel.

Comments are requested on this proposed action and the proposed revisions to this permit, as set forth in the draft permit and as further described in this project summary.

[16] It is expected that the revision to the CAAPP permit would be authorized as part of the issuance of a construction permit for the new baghouse control system. This is because that permit would be subject to Integrated Processed in accordance with Section 39.5(13)(c)(v) of Illinois' Environmental Protection Act.

Attachment 1:

Summary of Proposed Revisions to Construction Permit 95010001

Proposed Revisions to Construction Permit 95010001			
Permit Condition	**Nature of Change**	**Description/Explanation**	**Related Condition in CAAPP Permit**
9(a) Opacity Observations for the BOF Shop	Remove	Requirement for observations of opacity of emissions from the BOF shop on at least a weekly basis. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the BOF shop pursuant to the CAAPP permit for the mill. In this regard, Condition 7.5.8(c)(i) of the current CAAPP permit (planned future Condition 7.5.8-1(a))) requires observations of opacity on five out of seven operating days until the new baghouse control system is in place for tapping emissions from the furnaces. Thereafter, the frequency of observations would be related to the level of opacity observed during preceding opacity observations, with opacity observations required on five of seven operating unless preceding observation show compliance by a clear margin. This is more stringent than Condition 9(a) of the construction permit. More generally, it is now appropriate for requirements for opacity observations for this BOF shop to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement and evolution of these requirements as part of the processing of CAAPP permits for the source. In addition, as changes to operational may occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit for the source) without having to separately revise this requirement in the historic construction permit.	7.5.8(c)(i)
9(b) Opacity Observations for the ESP	Remove	Requirement for observations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor on the ESP that exceeds two consecutive hours. This requirement in the construction permit is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from the ESP pursuant to the CAAPP permit. Periodic Monitoring will provide for regular review and appropriate refinement of monitoring requirement for the ESP as part the processing of the CAAPP permits for the mill. This conclusion is not altered by the fact that the relevant Periodic Monitoring provision in the CAAPP permit (Condition 7.5.8(c)(iii)/planned Condition 7.5.8-1(c)) is currently identical to this condition in the construction permit that would be removed. As changes to this requirement for opacity observation may	7.5.8(c)(iii)

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		be appropriate in the future, such changes should be able to be made as part of consideration of Periodic Monitoring during the processing of the CAAPP permit without having to also process a revised construction permit to make related changes to that permit. Moreover, because continuous opacity monitoring is now required for the ESP by the NESHAP, an argument could be made that the identical requirement in the CAAPP permit should already be considered inappropriate or unnecessary. This is because it would provide for a departure from the monitoring explicitly required by the NESHAP.	
9(c) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. This requirement in the construction permit is now unnecessary and inaccurate. The procedures by which opacity is to be determined for purposes of various standards for opacity are also specified by those standards. For example, for purposes of the NESHAP, visible observations of opacity from the BOF shop are to be determined by an average of 12 readings, rather than 24 reading, as generally provided for by USEPA Method 9. For the ESP, continuous opacity monitoring is required. Condition 9(c) is misleading as it generally suggests that opacity of emissions shall be determined using the procedures in Method 9. Incidentally, the flaws in this condition of the construction permit have been addressed in the related condition in the current CAAPP permit (Condition 7.5.8(e)(iii)(b)/planned Condition 7.5.8-1(e)(ii)). That condition, specifying that opacity shall be determined by Method 9, only applies to determinations of opacity from the ESP stack by a human observer in the event of an outage of the opacity monitor.	7.5.8(e)(iii)(B)
9(d) Recordkeeping for Opacity Determinations	Remove	Provision requiring recordkeeping for various opacity determinations would be removed. This requirement in the construction permit would become unnecessary and obsolete as it addresses recordkeeping for opacity determination pursuant to Condition 9(a), (b) and (c), requirements that would be removed as discussed above. Moreover, Condition 9(d) is "muddled" as it refers unnecessarily to the applicable opacity standards for openings in the BOF shop and the ESP stack without also clearly identifying the particular standards that apply to these emission points. It could further be interpreted that the condition requires determinations of opacity for the ESP stack on a three-minute average basis, whereas the ESP stack is subject to 35 IAC 212.123, which limits opacity on a 6-minute average basis..	
10 and Attachment A General Operating Procedures for the BOF	Remove	Requirement to follow certain operating procedures and requirements for the BOFs and the existing ESP control system, as detailed in Attachment A of the construction permit. This requirement in the construction permit is now unnecessary and inaccurate. First, the NESHAP now generally requires operation of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. As these obligations are now clearly placed on the source, detailed requirements for proper operation of the BOFs and ESP system should not be "predetermined" by the terms of a construction permit. Second, as Attachment A of the construction permit sets out detailed requirements, it will become outdated and obsolete as appropriate operating	-

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		procedures for the BOF evolve and improve over time. The planned emission reduction project is simply another such change that has made the detailed operational requirements in Attachment A of the construction permit outdated. Moreover, as certain changes to the operational requirements for the BOFs may be appropriate in the future, such changes should be able to be made during the processing of the CAAPP permit without having to also act to revise the related requirements in the construction permit. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would serve to confirm that the Illinois EPA has already determined that this requirement is obsolete.	
11 Flame Suppression for Tapping	Remove	Requirement for use of flame suppression for alloy addition. Use of flame suppression would become unnecessary when tapping is controlled by local capture hoods and a baghouse as part of the planned emission reduction project. This new equipment will provide better overall control of particulate emissions from tapping. Continued use of flame suppression would also act to reduce the capture efficiency of the new hoods. This is because the volume of a gas expands with temperature. Continued use of flame suppression would increase the temperature of the air in the area in which tapping occurs, acting to reduce the amount of air actually drawn in by the new capture hoods. Continued use of flame suprression would also pose a physical threat to the new capture system due to the higher temperature that would result and increased carryover of sparks into the ductwork. As a more general matter, an explicit requirement for use of flame suppression is not needed in the construction permit. First, the BOFs must be operated to comply with operating parameter limits pursant to the NESHAP. As the performance tests that set such limits are conducted with use of flame suprression, this emission control measure is appropriately considered an element of the operating parameter limit. This would not be the case only if a performance test showed compliance without use of flame suppression. Second, as other changes to control measures for tapping could occur in the future besides the planned emission reduction project, such changes should be able to be made during the processing of an appropriate permit for those changes (either a construction permit or the CAAPP permit) without having to separately revise this requirement in the historic construction permit.	7.5.5-3(a)(ii)
12(a), (b)(i) and (c) Requirements for Minimum Set Points	Remove	Specific sets points for the ESP (i.e., minimum numerical requirements for the exhaust gas flow rate at the stack of the ESP) during different portions of the steel production cycle would be removed. When the new baghouse control system begins operating, these requirements would become outdated. The requirements that apply for tapping and charging or overlapping operation would cease to be relevant when tapping and charging are not controlled by the ESP. The requirement for refining when only a single furnace is operating would also cease to be relevant. When the new baghouse control system begins operation, the only gas flow from the ESP will be from the covers on the hoods and air flow associated with the refining step, without leakage from the charging hoods and associated ducts. Incidentally, the construction permit contemplated future changes to set points. Condition 12(c) allowed for the establishment of lower set points, requiring use of less aspiration air, based on a demonstration	7.5.6(h)(i) & (ii) and 7.5.5-3(b)(i)

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		that a better level of control would occur. It also provided that the established set points would not apply during testing that was conducted for the purposes of revising set points. However, it did not address how such revised set point were to be approved or address future circumstances in which set points for certain modes of operation would no longer be appropriate. More generally, the existing requirements are made obsolete by the operating parameter limits for capture systems for the BOPFs that are established under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). These operating parameter limits more directly address operation of capture systems on BOPFs than the requirements that would be removed. This is because they address the operation of the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOPFs or their associated control systems. The installation of the new baghouse control system is only an example of such a change under the NESHAP, which will trigger a requirement to conduct additional performance testing to establish new operating parameter limit for both the new and enhanced capture systems for charging and tapping and the existing covers on the BOF vessels.	
12(b)"(iii)" Requirements for Staggered Operation	Remove	Operational requirements related to staggering of the oxygen blowing of the BOPFs, the charging of hot metal and alloy addition during tapping would be removed. This change would be made because the new baghouse control system will be designed with sufficient capacity to simultaneously control charging of one BOF and tapping of the other. Accordingly, staggering of these operational steps by the BOFs will no longer be necessary for the BOFs to comply with applicable emission standards. More generally, the existing requirements for staggered operation of the BOFs are made obsolete by the operational requirements for the BOFs under the NESHAP, 40 CFR 63.7790(b)(1), 63.7800, 63.7824 and 63.7830(a)(3). The NESHAP directly requires that the BOFs be operated in a manner that is consistent with that during a performance test in which compliance with applicable emission standards has been shown. As such, the NESHAP would preclude overlap of different steps in the operation of the two BOFs if performance testing has not demonstrated the ability to comply when such steps overlapped. As such, only the most basic restriction on overlapping operation of the BOFs would be maintained, consistent with the construction permit for the baghouse control system, which does not allow simultaneous oxygen blowing of both vessels unless approved by a separate permit. This approach recognizes the current capacity of the control system for oxygen blowing (refining), which is currently insufficient for the oxygen blowing of both furnace vessels simultaneously, while also providing for possible improvements to the control system in the future.. Lastly, the operating parameter limits under the NESHAP more directly address operation of capture systems for secondary emissions from BOPFs than the requirements that would be removed. As related	7.5.5-3(a)(i)

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		to the manner of operation, the NESHAP addresses the operation of the capture hoods for secondary emissions and the air flow entering the control devices, rather than the aggregate flow of gas at the stack of the particulate control device. The NESHAP also provides appropriate flexibility for changes to operating parameter limits, both up or down, as a consequence of additional performance tests, which may address physical or operational changes to the BOFs or their associated control systems. The installation of the new baghouse control system is such a change under the NESHAP, which will trigger a requirement to conduct further performance testing to establish new operating parameter limits for the new and enhanced capture systems for charging and tapping.	
12(d) and (f) Requirements for Monitoring of ESP Stack Gas Flow Rate	Remove	Requirements for operational monitoring for ESP stack flow rate. This change would be made because the underlying requirements for minimum stack gas flow rate would be removed. Monitoring of individual capture systems and the air flow into the ESP would more directly address proper operation of the ESP control system. See also above discussion for Conditions 12(b)"(iii)."	7.5.8(d)(ii) & (iii)
12(e) Recordkeeping for ESP Flow Rate for Charging, Refining and Tapping	Remove	Requirement that records for ESP stack gas flow rate be kept for charging, refining and tapping. This requirement will become obsolete with the baghouse control system because the ESP would no longer be used to control charging and tapping. More generally, it is now appropriate for operational monitoring requirements for the BOFs, including monitoring requirements for the capture systems for the BOFs, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements as part the processing of CAAPP permits for the source.	7.5.9(b)(vii)
13(a) and (c) Operational Monitoring for Waste Gas Suction for the ESP System	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping. More generally, operational monitoring requirements for the BOFs, including monitoring related to the capture systems, to be set in the CAAPP permit as part of Periodic Monitoring. This provides for regular review and appropriate refinement of these requirements.	7.5.8(d)(i) & (i)(B)
13(b) Role of the Operational Monitoring for Waste Gas Suction for the ESP	Remove	Provision that the waste gas suction monitor for the ESP will be used to ensure that sufficient draft is maintained in the capture systems on the BOFs so as to maximize capture of emissions. This requirement will become obsolete with the baghouse control system. This is because the ESP would no longer be used to control charging and tapping.	7.5.8(d)(i)(A)
13(d) Operational Monitoring for Static Pressure in the ESP Downcommer Duct	Remove	Requirements for operational monitoring of waste gas suction (i.e., static pressure) in the common ductwork feeding the ESP for charging, refining and tapping during each steel production cycle would be removed. This change would be made because, with the baghouse control system, the ESP would no longer be used to control charging and tapping. In addition, this monitoring requirement is made obsolete by the NESHAP, which now provides a comprehensive approach to operational monitoring for capture system	7.5.8(d)(i)(C)

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		for secondary emissions from BOFs.	
14(a and (b) Requirements for Visual Inspections of the Capture Systems in the ESP Control System	Remove	Requirements for regular inspections of capture systems associated with the ESP. This requirement is made obsolete by the work practices required by the NESHAP. Monthly inspection of the equipment that is important to the performance of the total capture system and repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. In addition, when the new baghouse system begins operation, these requirements would no longer address the existing capture systems for charging.	7.5.8(d)(iv)(A) & (B)
14(c) Requirement for Prompt Repair of Leaks and Other Defects	Remove	Requirement for prompt repair of leaks or areas otherwise noted to be in need of repair. This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) Repairs of defects or deficiency before the next scheduled inspection are now required by 40 CFR 63.7800(b)(1) and 63.7834. This would require that timely maintenance be performed as necessary to maintain compliance.	7.5.8(d)(iv)(C)
15(a) Requirement to Operate, Maintain and Repair the BOF ESP to Comply with the Permit	Remove	Requirement to generally operate, maintain and repair the ESP to comply with this construction permit. This requirement is obsolete as it would inappropriately impose a redundant obligation to comply with other requirements in the construction permit. As those other requirements would be present and applicable, as reflected in an appropriate permit for the Granite City Works, US Steel would already legally be obligated to take necessary actions to comply with those requirements. To the extent that US Steel was generally being required to properly operate and maintain the ESP, that requirement should exist independent of the other conditions of the permit. In this regard, this obligation for good air pollution control practice is now explicitly required by the NESHAP.	7.5.5-3(b)(ii)
15(b) Requirement for an Adequate Inventory of Spare Parts	Remove	Requirement to maintain an adequate inventory of spare parts for the ESP. This requirement in the construction permit is now unnecessary. The NESHAP now generally requires maintenance of the BOFs in accordance with good air control practice. (See 40 CFR 63.6(e) (1)(i) and 63.7800(a).) 40 CFR 63.7800(b) further requires that US Steel prepare and implement a written operation and maintenance plan for the BOFs. Moreover, the requirement does not directly address maintenance of the ESP as should facilitate proper operation of the ESP. Rather, a separate requirement would be established related to the ESP that is not directly related to either maintenance or operation of the ESP.	
16 Requirement for Written Operating Procedures for the BOF ESP	Remove	Requirement to maintain written operating procedures This requirement in the construction permit is now unnecessary. The NESHAP now generally requires operation of the BOFs in accordance with good air control practice with preparation and implementation of a written operation and maintenance plan for the BOFs. (See 40 CFR 63.7800(b).)	
17 Required Recordkeeping for the ESP	Remove	Requirements for keeping certain records related to the BOFs and the existing ESP control system would be removed, including records for: (i) Operating time of the BOFs; (ii) Operating time of the capture systems and certain operating data for these systems; (iii) Operating times of the ESP and certain	7.5.9(b)(i) thru (iv)

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		performance data for the ESP; and (iv) Inspection and maintenance records for the existing capture systems and the ESP. The recordkeeping requirement would be removed because they have been replaced by requirements that more directly address proper operation of the ESP, including recordkeeping requirements of the NESHAP. In particular, records for "operating times" of the BOFs, the ESP capture systems and the ESP itself do not directly address lapses in control of particulate emissions, i.e., periods when a BOF operates without proper capture and control of emissions. The NESHAP, 40 CFR 63.7834, includes recordkeeping for preventative maintenance that is performed and corrective actions that are taken.	
18 and Table 2	Revise	A parenthetical phrase would be removed from this condition, which contains permit limits for the emissions of the ESP. The phrase indicates that the emissions of the ESP include emissions from charging, refining and tapping of the BOPF. The phrase would be removed because it would no longer be accurate when charging and tapping emissions are controlled by the new baghouse control system.	-
Note (following Condition 18)	Remove	Explanatory note describing the steel production cycle would be removed. The note would be removed because it is inconsistent with the definition of the steel production cycle in the NESHAP, 40 CFR 63.7852, which indicates that the steel production ends after slag is removed from the BOF vessel, rather than at the end of the tapping process.	-
33(a) Procedures for Opacity Observations	Remove	Provision addressing how opacity is to be determined, specifying that opacity is to be determined by the observation procedures in USEPA Method 9. See discussion for Condition 9(c), which is essentially identical to Condition 33(a).	-
33(b) Requirement for Personnel to Conduct Opacity Observations	Remove	Requirement that the source have "...at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit." This requirement is no longer appropriate because Periodic Monitoring is now required for the opacity of emissions from various operations at the Granite City Works. The Periodic Monitoring established by the CAAPP permit directly addresses the opacity observation that the source must conduct or have conducted. By contrast, this requirement of the construction only indirectly addresses opacity observations, as it deals with the staffing that must be available to conduct such observations. Moreover, as such, it could be construed to provide for a failure to actually conduct opacity observations if US Steel had otherwise met with this requirement related to availability of personnel for such observations. Incidentally, this requirement of the construction permit was not incorporated into the CAAPP permit. As such, this proposed revision to the construction permit would simply confirm that the Illinois EPA has already determined this requirement to be obsolete.	-
37 Coordination with Other Existing Permits	Revise	This condition would be revised to qualify "existing operating permits" as operating permits issued for the Granite City Works as of January 15, 1996. This change would be made so that the issuance of a revised construction permit would not affect the	-

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		hierarchy of permits for the source based on their chronology. In particular, the construction permit would only supersede operating permits that were issued before the original issuance of the construction permit and not subsequent operating permits issued for the source, including the CAAPP permits.	
38 Emission Testing	Revise	This condition would be revised with the addition of a note, which would be explanatory in nature, at the end of the condition. The note would explain that the issuance of the revised permit does not require that the emission testing, as addressed by this condition, be repeated. The specified emission testing was to Accompany initial operation of the expansion abd has already been conducted.	
39 Requirement for Reporting of Deviations	Remove	Requirement for reporting deviations from the construction permit. This requirement is obsolete because reporting of deviations is now a routine element of CAAPP permits, including the CAAPP permit for the Granite City Works.	

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ATTACHMENT 2

Mark-Up Showing Planned Changes to Permit 95010001

217/782-2113

CONSTRUCTION PERMIT/PSD APPROVAL
REVISED

PERMITTEE

U.S. Steel Granite City
Attn: ~~Larry Siebenberger~~Bryan Kresak, Environmental Director
Route 203 and 20th Street
Granite City, Illinois 62040

Application No.: 95010001 I.D. No.: 119813AAI
Applicant's Designation: Date Orig. Issued~~Received~~: January 25, 199~~5~~6
Subject: Production Increase
Date Revision Request: May 30, 2012
Date Revision Issued: DRAFT ~~June 25, 2002~~
Location: Southeastern Granite City

Permit is hereby granted to the above-designated Permittee for an increase in the allowable production rate of iron (from 2,372,500 to 3,165,000 net tons per year) and steel (from 2,774,000 to 3,580,000 net tons per year) as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

FINDINGS

1a. Various changes have been made to the provisions of this permit for the Basic Oxygen Furnaces (BOFs), at the request of the Permittee, so that the permit will accommodate an emission reduction project that is planned for particulate emissions from the BOFs. In particular, the revised permit does not include requirements for the operation of these BOFs and the existing electrostatic precipitator (ESP) control system that would be inconsistent with the use of a separate control system with a baghouse for secondary emissions of the BOFs, as is now planned (see Construction Permit Application 11050006). Removed requirements were also generally inconsistent with requirements under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFF. They were also inconsistent with Periodic Monitoring for the BOFs, as established under the Clean Air Act Permit Program (CAAPP) permit for the source (see CAAPP Permit 96030056).

b. Prior to issuance of this revised permit, a draft of the~~is~~ revised permit underwent ~~has undergone~~ a public ~~notice and~~ comment period, including ~~and~~ a public hearing ~~was held~~.

BLAST FURNACE OPERATIONS

2a. Total combined production of hot metal (a.k.a., iron) from blast furnaces A and B shall not exceed 9,849 net tons per day, averaged over any calendar month, and;

b. Total combined production of hot metal from blast furnaces A and B shall not exceed 3,165,000 net tons per year.

3a. Particulate emissions from the blast furnace casthouse baghouse and iron spout baghouse shall not exceed 0.010 gr/dscf, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

b. The opacity of emissions from the blast furnace casthouse baghouse and the iron spout baghouse shall not exceed 10% on a 6 minute rolling average basis, pursuant to 35 Ill. Adm. Code 212.445(b)(1).

4a. Emissions of particulate matter from any opening in the blast furnace casthouse shall not exceed 20% opacity on a 6-minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where iron and slag stops flowing in the troughs, pursuant to 35 Ill. Adm. Code 212.445(a)(2).

5. Emissions from Blast Furnace operations shall not exceed the limits in attached Tables 1 and 5.

BASIC OXYGEN FURNACE SHOP

6a. Total combined production of liquid steel from the Basic Oxygen Furnaces (BOF's) shall not exceed 11,000 net tons per day, averaged over any calendar month, and;

b. Total combined production of liquid steel from the BOF's shall not exceed 3,580,000 net tons per year.

7. The emissions of PM-10 from the BOF ~~BOP~~ stack for the total of all BOF processes (i.e., operations from the beginning of the charging process through the end of the tapping process) shall not exceed 60.0 lbs/hr and 0.225 lbs per ton of steel in process, pursuant to 35 Ill. Adm. Code 212.458(b)(23).

8. Visible emissions from any opening in the BOF shop (e.g., roof monitor) shall not exceed 20% on a 3 minute rolling average basis, pursuant to 35 IAC 212.446(c).

(Former Conditions 9 through 17 have been removed from this revised permit.)

9a. The Permittee shall determine the opacity from the openings BOF shop on at least a weekly basis. Observations shall be conducted for at least an hour or the entire BOF cycle, whichever is greater.

b. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day (i.e., Monday through Friday) that the continuous opacity monitor on the BOF ESP stack has an outage that exceeds two consecutive hours and is still down. The readings shall commence as soon as possible after the opacity monitor has been down for two consecutive hours. If meteorological conditions or lack of visibility preclude these observations from being conducted, then this shall be noted in the log book.

c. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9 including the requirement that readings be taken by a certified observer.

d. These determinations shall be recorded in a log book, which at a minimum shall include the date and time of observations, name and title of observer, individual opacity readings, calculated opacity so as to determine compliance with Section 212.123, and calculated opacity relative to 20% opacity on a three-minute rolling average basis.

10. The Permittee shall follow the BOF operating procedures and requirements specified in attachment A. These requirements are designed to ensure proper operation of the BOF control system. These procedures shall be posted in the BOF pulpit (a.k.a., control room).

11. Flame suppression shall be used and maintained during the entire tapping process.

12a. The stack gas pulpit set point of the BOF ESP control system shall be set in accordance with the following, so as to establish sufficient particulate matter capture efficiency of the charging and primary hoods:

i. Set point requirements while only a single BOF vessel is in operation;

A. Minimum set point during charging process: 550,000 cfm;

B. Minimum set point during refining process: 650,000 cfm;

C. Minimum set point during tapping process: 200,000 cfm (until one minute after completing alloy addition);

b. i. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the minimum set point shall be 700,000 cfm.

iii. Overlapping operations of the BOF vessels is allowed under the following conditions:

A. The hot metal charge of the second vessel shall be initiated and completed during the time between completion of the blow and start of tap on the first vessel while sufficient draft at the ESP capture system is established and maintained for both vessels.

B. The charge and/or blow on one vessel shall not begin until sufficient draft has been established at the associated ESP capture system (a.k.a., doghouse) and the alloy addition at the vessel tapping has been completed for a least 1 minute.

C. Sufficient draft at the ESP capture system of the vessel being tapped shall be maintained for at least 1 minute after alloy addition has been completed. After such period, the capture system draft may be transferred over to the other vessel in order to satisfy condition (A) above.

D. Only overlapping of the hot metal charge of the second vessel after the end of blow and prior to onset of tap of the first vessel and overlapping of tapping of the first vessel, after alloy addition, and the hot metal charge and/or blow on the second vessel are allowed.

E. Condition B and C above shall be part of the Standard Operating Procedure (SOP) of the BOF vessels.

c. The BOF capture system shall be operated at the above minimum set points until and unless the Agency approves a lower minimum set point based on a demonstration that a better level of particulate matter control will occur, except for purposes of emissions testing as related to the set points.

d. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use.

e. The Permittee shall record for each steel production cycle the various stack gas flow rates for each process (i.e., for each charge, each refine, each tap) of each steel production cycle. That is, the Permittee shall be able to distinguish the measured flow rate of stack gas during each production cycle.

f. The stack gas flow meter shall be calibrated on at least a quarterly basis.

13a. The Permittee shall operate and maintain the waste gas suction monitor system that continually measures and records for each process (i.e., for each charge, each refine, each tap) of each steel production cycle the static pressure in the main downcomer duct of the ESP emissions capture and transport system.

b. The waste gas suction monitoring system shall be used as a mechanism to ensure sufficient draft is maintained in the emissions capture hoods and transport ducts so as to maximize emissions capture and transport and minimize uncaptured emissions and emission leaks.

c. The monitoring system shall be operated and maintained to ensure accurate and useful data.

d. The Permittee shall continuously record the static pressure in the main downcommer duct of the ESP emissions capture and transport system.

14a. The Permittee shall visually inspect at least monthly all visible BOF vessel enclosures, hooding and ducts used to capture and transport emissions for the BOF ESP control system.

b. A log shall maintained of these inspections which includes observations of the physical appearance of the capture system and any noted deficiencies (e.g., the presence of any holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).

c. Any leaks or areas otherwise noted to be in need of repair, shall be repaired as soon as practicable.

15a. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of this permit.

b. An adequate inventory of spare parts for the BOF ESP shall be maintained.

16. Written operating procedures for the BOF ESP shall be maintained and updated describing proper normal process and equipment operating parameters, monitoring and instrumentation for measuring control equipment operating parameters, control equipment inspection and maintenance practices, and the availability of spare parts from inventory, local suppliers and other sources.

17. The Permittee shall keep operating records, a maintenance log, and inspection log for the BOF ESP and associated control systems which includes the following:

a. Operating time of the BOF;

b. Operating time of the capture systems and performance parameters, including air flow and fan amperage through the fan motors, gas temperature at inlet to ESP, damper settings, and steam injection rate;

c. Operating time of the ESP and performance parameters, including voltage and amperage of each transformer/rectifier set, number of sections in use;

~~d. All routine and nonroutine maintenance performed, including dates and duration of outages, inspection schedule and findings, leaks detected, repair actions, and replacements.~~

18. Emissions from the BOF Shop shall not exceed the limits in attached Tables 2 and 5.

~~Note: For purposes of this permit, a BOF cycle is defined as the period from the beginning of the charging process through the end of the tapping process. The cycle is comprised of three main processes which are charging, refining, and tapping.~~

CONTINUOUS CASTING OPERATIONS

19. The continuous casting operations shall comply with 35 Ill. Adm. Code 212.450 and 212.458(b)(8).

20. Emissions from the continuous casting operations shall not exceed the limits in Tables 3 and 5.

FUEL COMBUSTION

21. Total fuel usage for blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares shall not exceed the following limits:

    a. Natural Gas usage: 225 million ft^3 per month and 1,346 million ft^3 per year;

    b. Blast Furnace Gas (BFG) usage: 30,800 million ft^3 per month and 185,030 million ft^3 per year;

    c. Fuel Oil usage: 60 thousand gallons per month and 365 thousand gallons per year.

22. Emissions from the fuel combustion units listed above shall not exceed the limits in Tables 4 and 5.

ON-SITE FUGITIVE DUST CONTROL

(Refer to Attachment B for a table which summarizes the required on-site fugitive dust roadway control measures and maps indicating the referred to road segments)

23. The Permittee shall immediately initiate and maintain the on-site fugitive dust control measures specified in this permit so as eliminate dust spillage on in-plant and out-of-plant roadways.

24a. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags are used, stored and transported.

b. The Permittee shall implement a housekeeping program for the non-roadway areas below and around the BOF ESP. This program shall, at a minimum, contain the following:

i. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;

ii. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;

iii. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge chutes of the ESP hoppers;

iv. Dust collection bags shall be inspected after removal from, and connection to, the discharge chutes of the ESP hoppers;

v. Ripped or torn bags shall be taken out of service and transported as soon as practicable in a covered truck.

25. Fugitive emissions of particulate matter from any roadway or parking area shall not exceed an opacity of 5%, pursuant to 35 Ill. Adm. code 212.316(e)(1).

26a. UNPAVED ROADS: On unpaved roads that are part of normal traffic patterns as identified in attachment B (including roads B, C, E, N, F-F, and CS(2)) the Permittee shall apply a chemical dust suppressant at least three times a month, with the following exceptions:

i. Road segment G-G, which shall be sprayed at least quarterly;

ii. Road segments P, V, Z, D-D, E-E, and H, which shall be sprayed at least 4 times per month until paving is completed. Paving shall be completed on these roads no later than July 31, 1996;

iii. Road segment L, which shall be sprayed at least 4 times per month.

b. All other unpaved roads shall be treated as necessary.

c. Applications of suppressant may be less frequent than specified above if weather conditions, i.e., precipitation or temperature, interfere with the schedule for spraying, provided each such instance shall be recorded in accordance with the daily records for on-site fugitive dust control required by this permit.

27a. PAVED ROADWAYS AND AREAS: Paved roadways and areas shall be maintained in good condition.

b. On paved roadways and other areas, the Permittee shall sweep or flush as follows:

i. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;

ii. Road segments P, V, W, X, Z, D-D, E-E, and CS(1) shall be swept or flushed at least five days per week;

iii. Road segments S and T shall be swept or flushed at least every other day;

iv. Road segments A and H shall be swept or flushed at least once per month;

v. All gate areas leading from the Steelworks area shall be swept or flushed at least daily;

vi. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.

28. The above on-site dust control measures shall be conducted to maximize their effectiveness by performing said measures when the roads or areas are not normally obstructed by parked vehicles and by preferentially using filter sweeping (e.g., Enviro-Whirl sweeper) for the gate areas, the roads and areas surrounding the BOF and BOF ESP, and other key areas.

29. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information as a minimum:

a. The date (and time for the gate areas) each road or area was treated;

b. The manner in which the road or area was treated (i.e., filter sweep, conventional sweep, suppressant spray or flush);

c. Detailed information for use of dust suppressant, including but not limited to the application rate, dilution ratio, type of suppressant used, and the number of gallons of suppressant applied;

d. Observations, if any, concerning the condition of the roadway, e.g., presence of parked vehicles, detection of potholes;

e. The amount of precipitation and temperature recorded for each day, and if determination was made to suspend application of suppressant, include name and title of person who made determination to suspend application and explanation;

f. Any and all suspensions or deviations from the designated control procedures, with date, description, and explanation for suspension of application.

OFF-SITE FUGITIVE DUST CONTROL

30. The Permittee or the Permittee's Agent shall sweep or flush the following Granite City street road areas:

a. At least weekly, the quarter mile segment of Madison Avenue in front of the 16th street gate (i.e., 1/8 of a mile in either direction);

b. At least weekly, segment of 20th street between Lee and Quincy roads;

c. At least monthly, segment of 20th street between Madison and Route 203 (a.k.a. Edwardsville Road).

PM-10 CONTINGENCY MEASURES

31. The Permittee shall comply with the additional control measures (e.g., PM-10 contingency plan) required by 35 Ill Adm. Code Part 212 Subpart U.

COMPLIANCE DETERMINATIONS

32a. Compliance with the daily limits of this permit shall be determined from a monthly total of the relevant daily data divided by the number of days in the month.

b. Compliance with the monthly limits of this permit (e.g., fuel usage) shall be determined by direct comparison of monthly data to the applicable limit.

c. i. Compliance with the annual limits of this permit shall be determined based on a calendar year.

ii. A. Compliance with the production limits in conditions 2(b) and 6(b) shall also be determined on a month by month basis by showing that the actual production of iron and steel from the plant did not exceed the scheduled rate of production for a month given in the most recent production schedule provided to the Agency that shows compliance with the following requirements.

B. If no production schedule is submitted to the Agency by the Permittee for a particular year, the scheduled monthly production of iron and steel shall be set at one twelfth of the annual production limits in conditions 2(b) and 6(b).

C. 1. The Permittee may submit a schedule for iron and steel production for each month of the calendar year. Such schedule shall provide the scheduled monthly iron and steel production for each month and the total of such scheduled production shall not exceed the annual

production limits in conditions 2(b) and 6(b). This schedule shall be submitted each year no later than December 15th of the preceding year.

2. During the course of the year, the Permittee may submit a revised production schedule which accounts for actual production levels which were below that scheduled for the previous months, provided that in no case shall the scheduled production for prior months in such a revised schedule be lowered to less than actual production levels or raised. Such revised schedule shall be submitted to the Agency no later than 15 days after the first day of the month for which scheduled production has been raised. Such schedule shall be accompanied by data on actual production in preceding months.

(Former Condition 33 has been removed from this revised permit.)

~~33a. Compliance with opacity limits and measurements of opacity shall be made by opacity readings taken in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.~~

~~b. The Permittee shall have at least two employees or agents experienced in making opacity readings to the extent that it is reasonably possible to do so, who shall be able to make the opacity readings required by this permit.~~

34a. Blast furnace hot metal production shall be measured at the BOF hot metal transfer station, and adjusted by documented slag and iron losses.

b. BOF liquid steel production shall be initially measured by a scale equipped crane and adjusted based upon documented steel production analysis of the continuous casters.

c. BFG usage shall be calculated based on the total BFG produced per net ton hot metal (NTHM) derived by the following formula and adjusted per analysis of documented BFG consumptions:

$$\text{mmft}^3 \text{ BFG per month} = \frac{(4.585277 \text{ NTHM/day} + 498.191)}{80} \times \begin{pmatrix} \text{Number of} \\ \text{days in} \\ \text{that month.} \end{pmatrix}$$

d. Natural gas usage shall be determined by metered volumes.

e. Fuel oil usage shall be determined by tank height differentials.

RECORD KEEPING

35. The Permittee shall keep records of the following items and such other items which may be appropriate to allow the Agency to review compliance:

a. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses;

b. BOF liquid steel production (total combined daily, monthly and annual in tons), including documentation on adjustments made due to production analysis and losses;

c. Fuel usage as follows; Usage of natural gas and BFG (total combined million ft^3 per month and year, each) and fuel oil (total combined gallons/month and year) for the blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

36. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request. Any records retained in a computer shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Agency request for records during the course of a source inspection.

TESTING

37. The special conditions of this permit supplement the special conditions of any existing operating permits for this source as of January 15, 1996, and supersede such conditions in cases where a conflict exists.

38a. The following tests shall be performed by no later than August 6, 1997 to demonstrate compliance with the conditions of this permit.

i. Fuel Combustion Units testing: The emissions of particulate matter from boiler #12 while burning blast furnace gas shall be measured. This test shall be designed to verify compliance with the requirements of this permit and the emission factor used (i.e., 2.9 lbs particulate emitted per mmcf BFG burned);

b. The test shall be performed by an approved independent testing service during conditions which are representative of maximum emissions and at the maximum production rates allowed, or as close to such rates as reasonable if the Permittee demonstrates to the Agency prior to testing that testing at such production rates within the time constraints of an Agency request to test is not practicable.

c. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Agency: Refer to 40 CFR 60, Appendix A for USEPA test methods;

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Particulate Matter	USEPA Method 5

ii. All particulate measured shall be considered PM-10 unless emissions are tested by an appropriate USEPA test method for measurement of PM-10, as specified in 35 Ill. Adm. Code 212.110(e).

d. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Agency for review and approval. This plan shall be describe the specific procedures for testing, including as a minimum:

i. The persons who will be performing sampling and analysis and their experience with similar tests;

ii. The specific conditions under which testing will be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which operating parameters for the source and the emissions capture and control system will be determined;

iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations;

iv. The test methods which will be used, with the specific analysis methods;

v. Any proposed use of an alternative test method, with detailed justification;

vii. The format and content of the Source Test Report.

e. The Agency shall be notified before these tests to enable the Agency to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Agency may at its discretion accept notifications with shorter advance notice provided that the Agency will not accept such notifications if it interferes with the Agency's ability to observe testing.

f. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

- process weight rate and/or fuel usage rate
- production rate
- allowable emission limit
- measured emission rate

- determined emission factor
- compliance demonstrated - Yes/No
- any other pertinent information

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including,

- pertinent process information (e.g. fuel or raw material consumption)
- control equipment information, i.e. equipment condition and operating parameters during testing;

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

g. Copies of the Final Report for these tests shall be submitted to the Agency within 14 days after the test results are compiled and finalized.

h. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section;

ii. Final Report - one copy to Source Emission Test Specialist, one copy to Regional Office, and one copy to Permit Section.

Pertinent Addresses are:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Office
2009 Mall Street
Collinsville, Illinois 62234

Illinois Environmental Protection Agency
Division of Air Pollution Control
Attn: Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

(Condition 38 required emission testing following the initial operation of the source with the expansion that has already been conducted by the Permittee. This revised permit does not require that this testing be repeated.)

REPORTING

(Former Condition 39 has been removed in this revised permit.)

~~39. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Agency's Compliance Unit in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation, cause of the exceedance, and efforts to reduce emissions and future occurrences. This report shall be sent to:~~

~~Illinois EPA~~
~~Bureau of Air~~
~~Compliance Section (#40)~~
~~P.O. Box 19276~~
~~Springfield, Illinois 62794-9276~~

40. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year:

a. Iron and steel production (tons/month and tons/yr, each);

b. Natural gas and BFG usage ($mmft^3$/month and $mmft^3$/yr, each);

c. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).

APPLICABILITY OF MAJOR SOURCE RULES

41a. As a consequence of the above conditions, this permit is issued based upon the following changes in emissions, as further described in Table 6, accompanying increased production as allowed by this permit:

i. The increases in emissions of lead and VOM are not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration;

ii. The increase in emissions of NO_x are being accompanied by contemporaneous emission decreases provided by the shutdown of equipment and operations such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

iii. The increase in emissions of PM and PM-10 are being accompanied by contemporaneous emission decreases provided by additional road dust control and BOF capture and control such that the net emissions change is not significant under 35 Ill. Adm. Code Part 203 or 40 CFR 52.21 - Prevention of Significant Deterioration.

Also, the Permittee has agreed to provide further additional dust control consisting of the sweeping of Granite City public streets and housekeeping measures in the area below and surrounding the BOF ESP. Attachment C is a listing of the emission reductions provided by these control measures.

b. The increases in emissions of SO_2 and CO are significant under 40 CFR 52.21 - Prevention of Significant Deterioration (PSD). Accordingly, the project is considered a major modification and must comply with the requirements of PSD. These requirements include a demonstration of best available control requirements for affected SO2 and CO emission units, an analysis of air quality impacts, an analysis of the impacts of the project on visibility, vegetation's and soils, and the application and proposed permit must undergo a public participation. The Agency has determined that these additional requirements have been met.

c. The changes in emissions pertinent to this project are summarized as follows:

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	- 52.0	238.8	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

Explanatory Note:

PM	=	particulate matter = particulate;
PM-10	=	particulate matter less than or equal to 10 micrometers in size;
SO_2	=	sulfur dioxide;
NO_x	=	nitrogen oxides;
VOM	=	volatile organic material;
CO	=	carbon monoxide;
mm	=	million;
gr/dscf	=	grains per dry standard cubic foot;
acfm	=	actual cubic feet per minute;
mmcf	=	million cubic feet;
Mgal	=	thousands of gallons.

If you have any questions on this permit, please call Kevin Smith at 217/782-~~2113~~7048.

Edwin C. Bakowski~~Donald E. Sutton~~, P.E. Date Signed: _____
Manager, Permit Section
Division of Air Pollution Control

DES:KLS:jar

cc: IEPA, FOS Region 3

TABLE 1

BLAST FURNACE OPERATIONS

Maximum Hot Metal Production = 3,165,000 net tons per year

1. Casthouse Baghouse (furnace tapping)- captured emissions ducted to baghouse, uncaptured emissions emitted through roof, other openings, etc.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0703	111.19
PM-10	0.0703	111.19
SO_2	0.2006	422.0
NO_x	0.0144	22.79
VOM	0.0946	149.68

2. Blast Furnace - uncaptured fugitives

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.031	49.06
PM-10	0.0155	24.53
SO_2	0.0104	21.94
NO_x	0.0007	1.14
VOM	0.0047	7.42

3. Blast Furnace Charging
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0024	5.17
PM-10	0.0024	5.17

4. Slag Pits

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00417	6.60
PM-10	0.00417	6.60
SO_2	0.0100	15.83

TABLE 1 (cont.)

5. Iron Spout Baghouse- captured emissions controlled by iron spout baghouse.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.02548	40.32
PM-10	0.02548	40.32
SO_2	0.0073	13.89

6. Iron Pellet Screen
Maximum pellets charged = 4,308,581 tons/yr

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00279	6.01
PM-10	0.00279	6.01

TABLE 2

BOF SHOP

Maximum Liquid Steel Production = 3,580,000 net tons per year

1. BOF ESP Stack ~~(charge, refine, tap)~~

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.16	262.80
PM-10	0.16	262.80
NO_x	0.0389	69.63
VOM	0.0060	10.74
CO	8.993	16,097.47
Lead	0.1934 lbs/hr	1.26 tons/yr

2. BOF Roof Monitor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0987	176.71
PM-10	0.06614	118.40
Lead	0.0129 lbs/hr	0.08 tons/yr

3. Desulfurization and Reladling - Hot Metal Transfer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.03721	58.88
PM-10	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09 tons/yr

4. BOF Additive System (i.e., fluxes) with Baghouse, a.k.a., BOF hopper baghouse

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00032	0.57
PM-10	0.00032	0.57

TABLE 2 (cont.)

5. Flux conveyor & transfer pits, bin floor

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0016	2.86
PM-10	0.0016	2.86

6. Hot metal charging ladle slag skimmer

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0050	7.94
PM-10	0.0050	7.94

TABLE 3

CONTINUOUS CASTING OPERATIONS

Maximum Liquid Steel Throughput = 3,580,000 net tons per year

1. Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy)

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00715	12.80
PM-10	0.00715	12.80

2. Deslagging Station and Material HS.

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00355	6.35
PM-10	0.00355	6.35

3. Caster Molds - Casting

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.006	10.74
PM-10	0.006	10.74
NO_x	0.050	89.50

4. Casters Spray Chambers

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00852	15.25
PM-10	0.00852	15.25

5. Slab Cut-off

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.0071	12.71
PM-10	0.0071	12.71

TABLE 3 (cont.)

6. Slab Ripping

Pollutant	Emission Factor (Lbs/Ton)	Maximum Emissions (Tons/Yr)
PM	0.00722	12.92
PM-10	0.00722	12.92

TABLE 4

CERTAIN FUEL COMBUSTION UNITS

1. 10 boilers (#'s 1 - 10)
2. 2 boilers (#'s 11 - 12)
3. Blast Furnace Stoves A & B.
4. BFG Flares
5. Ladle Drying Preheaters (5 heaters).

Total combined fuel usage from affected units (i.e., Boilers, BF stoves, BF Flares, ladle drying preheaters)

	Maximum Usage ($mmft^3/Yr$)
NATURAL Gas (Total)	1,346
BFG	185,030
Fuel Oil	365 thousand gallons/yr

1. Natural Gas

Pollutant	Emission Factor (Lbs/mmcf)		Maximum Emissions (Tons/Yr)	
PM	5.1		3.43	
PM-10	5.1		3.43	
SO_2		0.6		0.40
NO_x		306		205.94
VOM	2.8		1.88	
CO		40		26.92

2. BFG

Pollutant	Emission Factor (Lbs/mmcf)		Maximum Emissions (Tons/Yr)	
PM	2.9		268.29	
PM-10	2.9		268.29	
SO_2		6.65		615.22
NO_x		5.28		488.48
CO		13.7		1,267.46

TABLE 4 (cont.)

3. Fuel Oil

Pollutant	Emission Factor (Lbs/Mgal)		Maximum Emissions (Tons/Yr)	
PM	9.72	1.77		
PM-10	9.72	1.77		
SO_2	141.3		25.79	
NO_x	55		10.04	
VOM	0.28	0.05		
CO	5.0	0.91		
Lead	0.336	0.06	(waste oil)	

TABLE 5

LIMITS ON EMISSIONS FROM MAJOR PROCESSES AND ACTIVITIES

Units = tons/year

	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
Blast Furnace Operations	218	194	474	24	157	--	--
BOF Shop	510	451	--	70	12	16,097	1.43
Continuous Casting Operations	71	71	--	90	--	--	--
Certain Fuel Combustion Units[A]	274	274	641	706	2	1,295	0.06
Roadways	27	27	--	--	--	--	--
Material Handling	2	2	--	--	--	--	--

	PM	PM-10	SO_2	NO_x	VOM	CO	Lead
TOTAL	1,102	1,019	1,115	890	171	17,392	1.49

[A] Blast furnace stoves (A and B), boiler house boilers (1-10), blast furnace boilers (11 and 12), ladle drying preheaters and blast furnace gas flares.

TABLE 6

EMISSIONS SUMMARY

Units = tons/year

- Emission increases which could occur from the project:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
51.6	-52.0	238.3	476.0	5,685	59.3	0.54

- Creditable contemporaneous actual emission decreases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
58.0	58.0	226.5	0.38	23.31	32.8	0.0

- Other contemporaneous emission increases:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
20.7	20.3	26.0	0.25	11.8	1.6	0.0

- Net emission changes:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
+14.3	-89.2	+38.3	+475.9	+5,673	+28.1	+0.54

- Significant Levels:

PM-10	PM	NO_x	SO_2	CO	VOM	Lead
15	25	40	40	100	40	0.6

ATTACHMENT A

(Former Attachment A has been removed in this revised permit.)

~~PROCEDURES TO ENSURE PROPER OPERATION OF BOF ESP CONTROL SYSTEM~~

~~1. The emissions control operator shall:~~

~~a. Check on a regular basis and report to the emissions control foreman or melter:~~

~~i. Any ESP fields down;~~

~~ii. Any ESP fields in which the meter readings are showing no current or a fault;~~

~~b. Check on a regular basis that doors on all hopper screws are closed;~~

~~c. Inspect on a regular basis the fans and motors for unusual sounds and/or visual problems. Any abnormalities will be immediately reported to the melter or maintenance foreman for investigation.~~

~~2. The melter shall:~~

~~a. Check on a regular basis and report to the emissions control foreman or the area electrician any fields which the pulpit precipitator field short indicators shows as having a short and is able to reset;~~

~~b. Check on a regular basis and report to the emissions control foreman or the maintenance foreman any draft or fan problems;~~

~~c. Check the ESP stack opacity monitor on a regular basis and initiate the following in the event that the stack opacity level, as determined by the opacity monitor, exceeds 30% opacity on a six minute average:~~

~~i. Check the pulpit indicators for proper operation of the steam and spray water system. Report any problems to emission control foreman or maintenance foreman;~~

~~ii. Check the stack gas pulpit set point for proper setting;~~

~~iii. Call the emissions control operator who shall perform the following steps;~~

~~A. Check the AVC operation and power level. Report any problems to electrical maintenance foreman or area electrician;~~

~~B. Check to ensure that doors on all hopper screws are closed;~~

~~d. Check oxygen blow rates and adjust, if necessary;~~

~~e. Check hot metal chemistry;~~

f. A log shall be maintained of the above checks and any actions taken as a result.

3. The emission control former shall:

a. Check on a regular basis the opacity monitor exceedances and trends. The control specialist shall be contacted to correct any problems;

b. Check on a regular basis the draft rate set points;

c. Check on a regular basis primary and secondary damper settings;

d. Check on a regular basis ESP operation, including the following:

i. Fields down;

ii. Fields indicating sparks and unable to reset;

iii. Hopper screw doors are closed;

e. Check on a regular basis blow rates;

f. Check on a regular basis spray water system operation;

g. Check on a regular basis steam injection rate;

h. Contact the area manager regarding electrical maintenance and to schedule the ESP repair work;

i. Contact the area manger for mechanical maintenance to schedule the isolation of the ESP channel by closing the inlet and outlet gates of that chamber and opening the top hatches for entry into the chamber;

j. Notify the emissions control operator and melter when isolation work begins;

k. A log shall be maintained of the above checks and any actions taken as a result.

4. The crane operator shall use the following procedures, as appropriate, to minimize emissions and maximize emissions capture by the hoods:

a. Use controlled pouring of the hot metal into the DOF vessel;

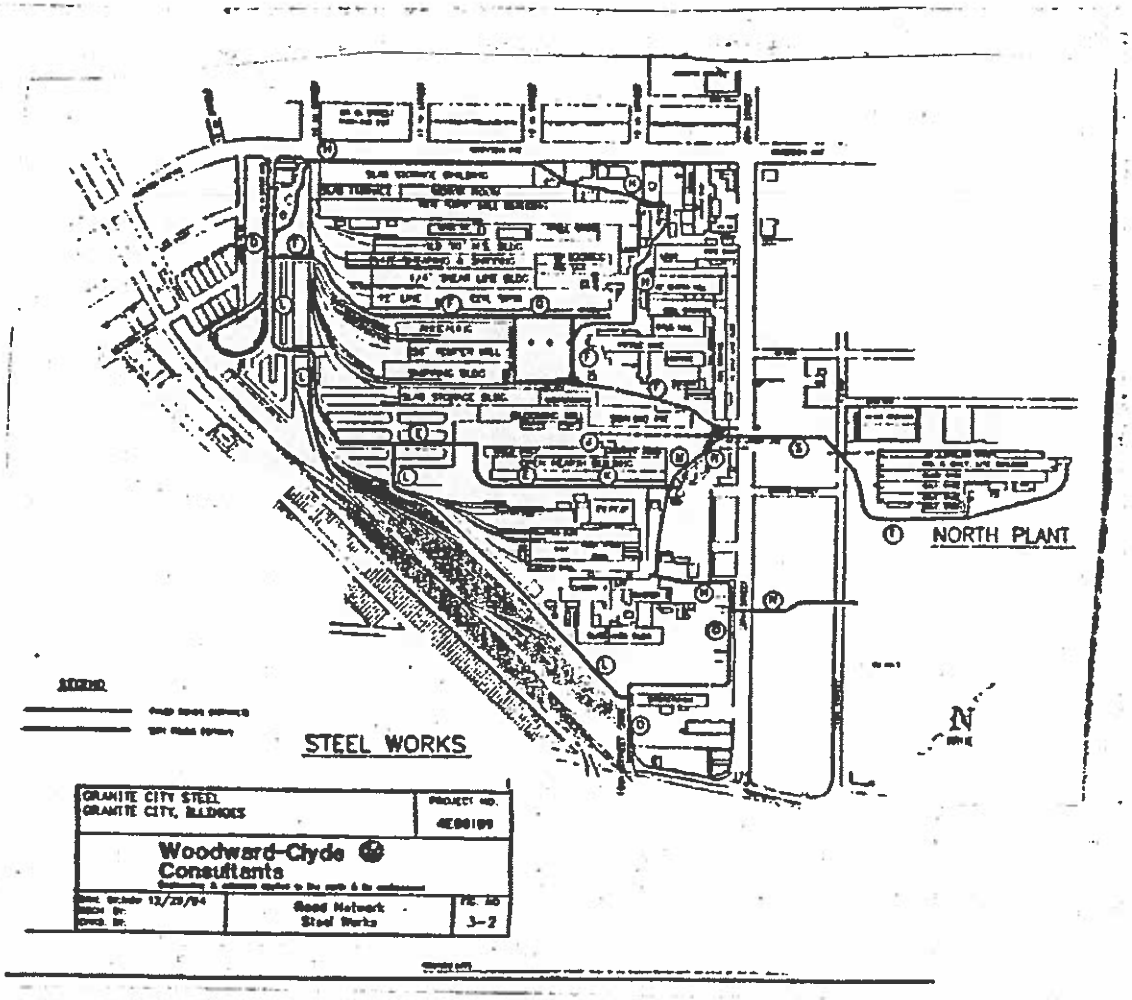
b. Use careful positioning of the hot metal ladle with respect to the hood face and furnace mouth;

c. Use the most beneficial furnace tilt angle;

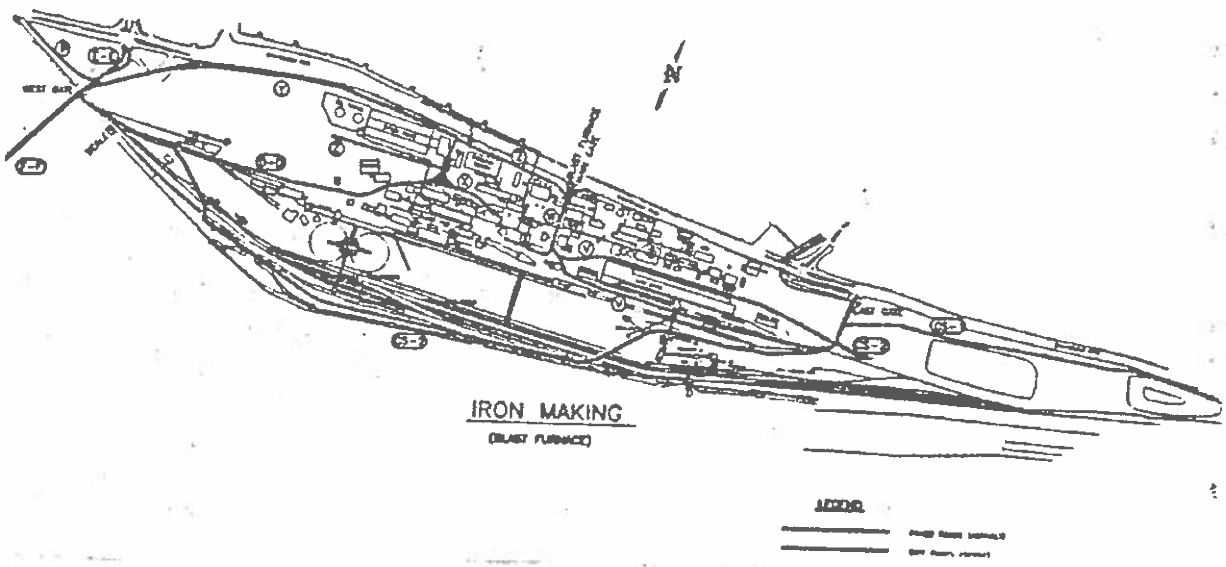
d. These procedures shall be posted in the crane operator booth.

ATTACHMENT B

ON-SITE FUGITIVE DUST ROADWAY CONTROL MEASURES AND MAPS SHOWING THE ROAD SEGMENTS

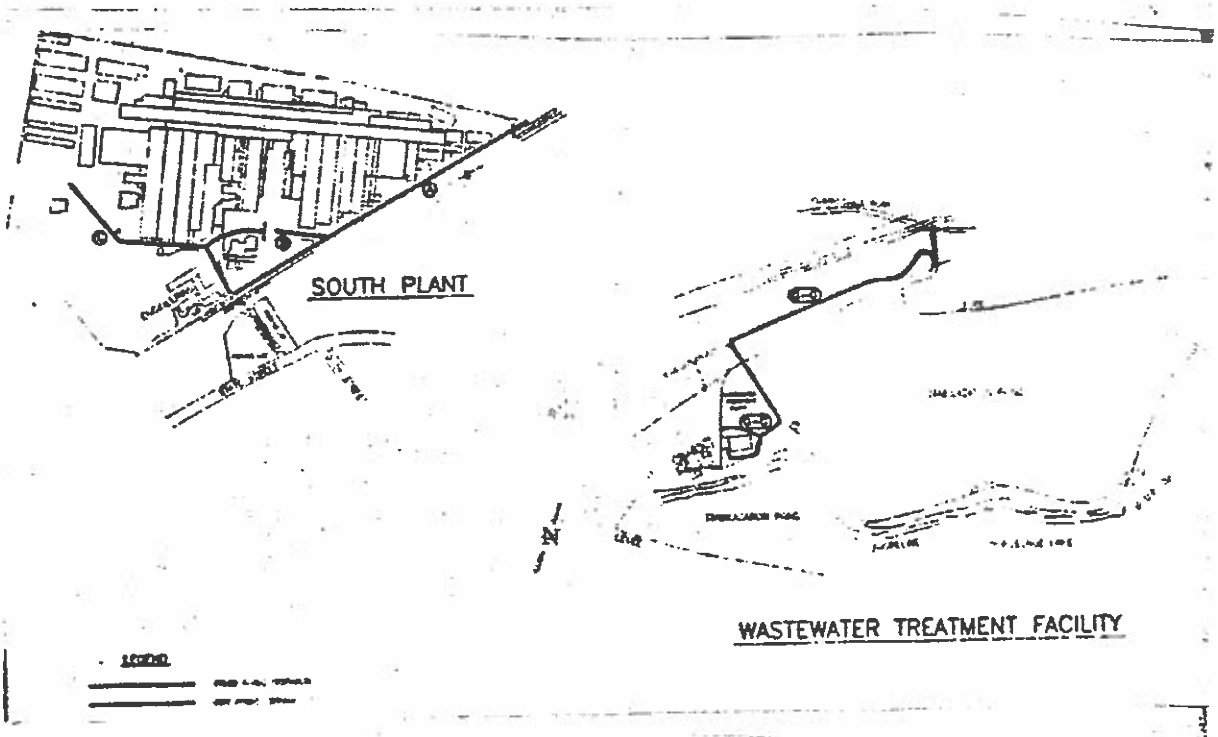


ATTACHMENT B (cont.)



GRANITE CITY STEEL GRANITE CITY, ILLINOIS	PROJECT NO 4E88109
Woodward-Clyde Consultants	
DRN. BY: kdw 12/29/94 CHKD. BY: CHKD. BY:	Road Network Iron Making Area
	FIG. NO. 3-3

ATTACHMENT B (cont.)



GRANITE CITY STEEL GRANITE CITY, ILLINOIS	PROJECT NO. 4E88189
Woodward-Clyde Consultants	
Date Printed 12/29/94 DRAWN BY CHKD BY	Road Network South Plant & WWTP

ATTACHMENT C

CONTEMPORANEOUS REDUCTIONS IN THE
EMISSIONS OF PM-10

- Historic roadway emissions of 428 tons/yr, minus future potential roadway emissions of 27 tons/yr, equals a resulting reduction in roadway emissions of 401 tons/yr

- Historic material handling emissions of 17 tons/yr minus future potential material handling emissions of 2 tons/yr, equals a resulting reduction in material handling emissions of 15 tons/yr.

- Emission reductions resulting from the sweeping of city streets = 52 tons/yr*

- Emission reductions resulting from sweeping and housekeeping of areas below and around BOF ESP = 12 tons/yr*

Total reductions in the emissions of PM-10 as a result of the additional dust control measures required by Illinois' SIP and the special conditions of this permit = 480 tons/yr

* These are considered reasonable estimates of reductions and are subject to change upon further investigation of the actual reductions which will occur as a result of the control measures required by this permit.

R009932

(See Item 1c)

Romaine, Chris

From: David Ogulei [Ogulei.David@epamail.epa.gov]
Sent: Monday, January 23, 2012 4:12 PM
To: Romaine, Chris
Cc: Smith, Kevin L.; Danny Marcus; Constantine Blathras; Genevieve Damico
Subject: EPA Comments on Preliminary Draft Construction Permit for US Steel - Baghouse Control System for the BOP Furnaces

Chris Romaine.
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Dear Mr. Romaine:

The U.S. Environmental Protection Agency has reviewed the preliminary draft construction permit (permit) prepared by Illinois Environmental Protection Agency (IEPA) for United States Steel Corporation - Granite City (Application No. 11050006).

Project Summary

The permit authorizes the installation of a new baghouse system, rated at 900,000 actual cubic feet per minute, for the control of particulate matter (PM) emissions from charging and tapping operations at US Steel's two existing Basic Oxygen Process Furnaces (BOPFs). The new baghouse system is expected to reduce overall PM emissions from US Steel's Granite City facility, in accordance with a July 1, 2010, Memorandum of Understanding (MOU) between U.S. Steel and IEPA, which mandates reductions in particulate emissions at U.S. Steel's Granite City facility. The existing electrostatic precipitator (ESP) would continue to be used to control PM emissions from refining.

The permit lays down a framework for an administrative amendment of the Clean Air Act Permit Program (CAAPP) permit (Permit No. 96030056), pursuant to the "integrated processing" procedures found in Section X of the Memorandum of Agreement (MOA) between IEPA and the EPA, and Section
39.5(13)(c)(v) of the Illinois Environmental Protection Act (Chapter 35 IAC).

EPA Comments

EPA has the following comments on the permit:

1. Although EPA believes that integrated processing of a construction permit with a part 70 permit, as proposed by IEPA, can be allowable under 40 C.F.R. § 70.7(d)(1)(v) and Section X of the MOA, the permit must meet the following requirements:

    a. The construction permit must undergo substantively equivalent processing procedures as would be required for a part 70 permit, including (but not limited to) public notification and an opportunity for a public hearing; notice to affected states and interested parties; and a 45-day EPA review of the proposed permit;

    b. Any conditions included in the construction permit (e.g.

comment even if those conditions previously existed in an existing CAAPP or state operating permit; and

c. Any revisions to existing Prevention of Significant Deterioration (PSD) permits (e.g., PSD Permit No. 95010001) shall only be made through a separate revised or new PSD permit – not through the minor source construction permit. Revisions to PSD permits are subject to the PSD public involvement procedures in 40 C.F.R. Part 124.

Note that any applicable requirements that are not included in the construction permit would likely trigger significant modification requirements at the time of placing those applicable requirements into the CAAPP permit.

2. Please clarify in the "findings" section (or in a support document) the relationship between the proposed permit and previously-proposed and/or finalized construction permits for the BOPFs. If the current permit (if approved) will replace existing permits, conditions should be placed in the draft permit rescinding the affected permits once the current permit becomes effective. The permit record should clearly explain the relationship between the various permits.

3. EPA recommends that IEPA provide an opportunity for all potentially affected community residents to participate in the permitting process.

4. Finding 4.b. discusses PSD applicability. Please clarify how "current" and "future" emissions are calculated in Attachment I. Are the definitions of "current" and "future" emissions consistent with the definitions of "baseline actual emissions" and "projected actual emissions" found in 40 C.F.R. § 52.21(b)(48) & (41), respectively?

5. The stated intent of the July 1, 2010, MOU between US Steel and IEPA is "… reducing the emissions of [PM2.5]". Please consider including in the permit or supporting documentation what reduction in PM2.5 emissions is expected after the project is completed.

6. Condition 2.a. of the permit establishes a PM emission limit of 0.005 grains per dry standard cubic foot, measured by EPA Method 5, 5D or 17. No other new emission limit is being proposed. Please include an emission limit that is based on both filterable and condensable PM, as measured by EPA Methods 201A or 202.

7. Condition 3.a.ii. requires further testing "for emissions of filterable PM10 and PM2.5, condensable particulate matter, NOx, CO, VOM and lead…within one year of initial operation of both BOPFs with tapping and charging controlled by the affected baghouse system". Without the corresponding emission limits for each tested pollutant, how does IEPA intend to interpret or use the results of this testing?

8. Condition 7.5.6.i. requires the applicant to demonstrate compliance with the tons per year limits on a "calendar year

practically enforceable. Please use a 12-month rolling period to demonstrate compliance with tons per year limits.

9. Please clarify whether determination of control efficiency, as required in Conditions 3.a.ii., 3.a.iv., 7.5.7-1.a.ii., and 7.5.7-1.a.iv., shall be based on PM, PM10, or PM2.5. Also clarify if the control efficiency includes both filterable and condensable emissions.

10. Please clarify how Attachment II is organized. For example, are the italicized conditions (and tables) proposed to be deleted; changed; or remain unchanged?

We look forward to working with you to address our comments. If you have any further questions, please feel free to contact me at (312) 353-0987.

Sincerely,

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