

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

UNITED STATES STEEL)	
CORPORATION,)	
a Delaware corporation,)	
)	
Petitioner,)	
)	
v.)	PCB 2013-_____
)	(CAAPP Permit Appeal)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

NOTICE OF FILING

TO: Mr. John Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA ELECTRONIC MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board a copy of United States Steel Corporation's **ENTRY OF APPEARANCE OF KATHERINE D. HODGE, ENTRY OF APPEARANCE OF MONICA T. RIOS, PETITION FOR REVIEW, and MOTION FOR STAY OF EFFECTIVENESS OF CONTESTED CONDITIONS**, a copy of which is hereby served upon you.

Respectfully submitted,
UNITED STATES STEEL CORPORATION,
Petitioner,

Dated: April 8, 2013

By: /s/ Monica T. Rios
Monica T. Rios

Katherine D. Hodge
Monica T. Rios
HODGE DWYER & DRIVER
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

CERTIFICATE OF SERVICE

I, Monica T. Rios, the undersigned, certify that I have served the attached
ENTRY OF APPEARANCE OF KATHERINE D. HODGE, ENTRY OF
APPEARANCE OF MONICA T. RIOS, PETITION FOR REVIEW, and MOTION FOR
STAY OF EFFECTIVENESS OF CONTESTED CONDITIONS upon:

Mr. John Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601

via electronic mail on April 8, 2013; and upon:

Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

by depositing said documents in the United States Mail, postage prepaid, in Springfield,
Illinois, on April 8, 2013.

By: /s/ Monica T. Rios
Monica T. Rios

USSC:003/Fil/NOF-COS -EOAs-Mtn To Stay-Petition for Review

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CORPORATION,)	
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Petitioner,)	
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v.)	PCB No. ____ - ____
)	(CAAPP Permit Appeal)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

ENTRY OF APPEARANCE OF KATHERINE D. HODGE

NOW COMES Katherine D. Hodge, of the law firm of HODGE DWYER & DRIVER, and hereby enters her appearance on behalf of Petitioner, UNITED STATES STEEL CORPORATION, in the above-referenced matter.

Respectfully submitted,

UNITED STATES STEEL CORPORATION,
Petitioner,

By: /s/ Katherine D. Hodge
One of Its Attorneys

Dated: April 8, 2013

Katherine D. Hodge
HODGE DWYER & DRIVER
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
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USSC:003/Fil/EOA KDH

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v.)	PCB No. ___ - ___
)	(CAAPP Permit Appeal)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

ENTRY OF APPEARANCE OF MONICA T. RIOS

NOW COMES Monica T. Rios, of the law firm of HODGE DWYER & DRIVER, and hereby enters her appearance on behalf of Petitioner, UNITED STATES STEEL CORPORATION, in the above-referenced matter.

Respectfully submitted,

UNITED STATES STEEL CORPORATION,
Petitioner,

By: /s/ Monica T. Rios
Monica T. Rios

Dated: April 8, 2013

Monica T. Rios
HODGE DWYER & DRIVER
3150 Roland Avenue
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USSC:003/Fil/EOA MTR

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UNITED STATES STEEL)	
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PROTECTION AGENCY,)	
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Respondent.)	

PETITION FOR REVIEW

NOW COMES Petitioner, UNITED STATES STEEL CORPORATION (hereinafter "U.S. Steel"), by and through its attorneys, HODGE DWYER & DRIVER, pursuant to Section 40.2 of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/40.2, and 35 Ill. Admin. Code Part 105.Subpart C, and petitions the Illinois Pollution Control Board ("Board") for review of the Clean Air Act Permit Program ("CAAPP") permit issued to U.S. Steel by the Illinois Environmental Protection Agency ("Illinois EPA") on March 4, 2013, pursuant to Section 39.5 of the Act ("2013 CAAPP Permit"). In support of this Petition, U.S. Steel states as follows:

I. BACKGROUND

1. U.S. Steel owns and operates an integrated iron and steel mill in Granite City, Illinois (the "Facility"), which is classified as a "major source" for purposes of Title V of the Clean Air Act ("CAA") and Section 39.5 of the Act.

2. Principle operations at the Facility include, but are not limited to:

- 1) Handling and Processing of Bulk Materials; 2) Coke Production (Coke Ovens and

Coke Byproduct Plant); 3) Iron Production (Blast Furnaces); 4) Steel Production (Basic Oxygen Process ("BOP")/Basic Oxygen Furnace ("BOF") Shop); 5) Steel Finishing; and 6) Boilers. In addition, roadways at the Facility and nearby public roadways serving the Facility are subject to fugitive dust requirements.

3. U.S. Steel herein petitions the Board for review of the 2013 CAAPP Permit, attached hereto as Exhibit A, based on two issues: 1) the inclusion of Condition 5.13 in the 2013 CAAPP Permit and explicit determination by Illinois EPA that "emission factors" incorporated in the 2013 CAAPP Permit from the Construction Permit/Prevention of Significant Deterioration ("PSD") Approval No. 95010001 ("PSD Permit") issued to National Steel, the prior owner and operator of the Facility, by Illinois EPA on January 25, 1996 (and subsequently revised and reissued on several occasions) are, in fact, enforceable "emission limits;" and 2) the failure of Illinois EPA to include a compliance schedule in the 2013 CAAPP Permit related to the Violation Notice ("VN") issued to U.S. Steel by Illinois EPA on November 30, 2012.

4. U.S. Steel is contesting the following conditions of the 2013 CAAPP Permit:

- Condition 5.13 – General Procedures for Certain Permit Limits on Emissions;
- Condition 7.1.6(b)(i)-(iv) – Emission Factors for Material Handling and Processing Operations;
- Condition 7.4.6(b)-(f) – Emission Factors for Blast Furnace Activities;
- Condition 7.5.6(b) – Annual NO_x and VOM Emission Limits for the BOF Shop;

- Condition 7.5.6(c)-(g) – Emission Factors for BOF Shop Activities, NOx and VOM Annual Maximum Emissions for the BOF ESP Stack, and failure to include a note regarding a compliance schedule (See Condition 7.5.13);
- Condition 7.5.13 – Compliance Schedule and Current Enforcement Status: Failure to include a compliance schedule for NOx and VOM emissions from the BOF Shop; and
- Condition 7.6.6(a)-(e) – Emission Factors for Continuous Casting Activities.

A table describing the contested conditions in more detail is attached hereto as Exhibit B.

5. For the reasons stated herein, Illinois EPA's final action with regard to the issues concerning the 2013 CAAPP Permit, as set forth above, was arbitrary, capricious and not supported by the Act or Board regulations. Accordingly, U.S. Steel seeks review of the 2013 CAAPP Permit as provided by Section 40.2 of the Act and 35 Ill. Admin. Code Part 105 Subpart C of the Board's regulations as to those issues. The filing of this Petition is timely pursuant to Section 40.2(a) of the Act and Section 105.302(e) of the Board's regulations because it was filed with the Board within 35 days after issuance of the 2013 CAAPP Permit.

6. U.S. Steel is also filing contemporaneously herewith a Motion to Stay the Contested Conditions of the 2013 CAAPP Permit, in accordance with Section 40.2(f) of the Act, and is requesting a stay of contested conditions of the 2013 CAAPP Permit during the pendency of the review process.

II. PROCEDURAL HISTORY

7. On May 2, 2011, Illinois EPA issued a revised CAAPP Permit (“2011 CAAPP Permit”)¹ to U.S. Steel in response to an order² from the United States Environmental Protection Agency (“USEPA”) granting in part and denying in part a petition³ filed by the American Bottom Conservancy requesting that USEPA object to the issuance of the September 3, 2009 CAAPP Permit issued to U.S. Steel. The Facility currently operates under the terms and conditions of the 2011 CAAPP Permit.⁴

8. On August 16, 2011, ABC filed a Petition to Object (“Petition to Object”)⁵ with USEPA, requesting that USEPA object to the 2011 CAAPP Permit. The Petition to Object alleged that the 2011 CAAPP Permit, among other things, lacked adequate periodic monitoring and failed to appropriately address excess emissions associated with startup, breakdown and malfunctions.

¹ The 2011 CAAPP Permit was administratively amended on October 3, 2011 and May 3, 2012 to reflect corrections of typographical errors in several conditions.

² Order Responding to Petitioner’s Request that the Administrator Object to Issuance of State Operating Permit, *In the Matter of: United States Steel Corporation – Granite City Works CAAPP No. 96030056 Proposed by the Illinois Environmental Protection Agency*, Petition No. V-2009-03 (Jan. 31, 2011).

³ American Bottom Conservancy’s Petition to Object to Title V Permit for United States Steel Corporation – Granite City Works Issued by the Illinois Environmental Protection Agency (Oct. 1, 2009).

⁴ As soon as the Board grants a stay of contested conditions in this appeal of the 2013 CAAPP Permit, as required by Section 40.2(f) of the Act, U.S. Steel will operate under the uncontested conditions of the 2013 CAAPP Permit.

⁵ Petition Requesting that the Administrator Object to the Issuance of the Revised Title V/CAAPP Operating Permit for the U.S. Steel Granite City Works Facility (Aug. 16, 2011).

9. On December 3, 2012, USEPA took final action on the Petition to Object, granting it in part and denying it in part (“2012 USEPA Order”).⁶

10. In response to the 2012 USEPA Order, on March 4, 2013, Illinois EPA issued the 2013 CAAPP Permit. The issuance of the 2013 CAAPP Permit was preceded by a 10-day comment period in accordance with Section 39.5(9)(g) of the Act. During the comment period, U.S. Steel submitted comments on the Public Notice Draft of the 2013 CAAPP Permit, focusing on Illinois EPA’s preliminary decision not to include U.S. Steel’s proposed compliance schedule in the planned revisions to the 2013 CAAPP Permit. U.S. Steel’s comments are attached hereto as Exhibit C.

11. Upon issuance of the 2013 CAAPP Permit, Illinois EPA also issued its “Response to Comments on the Planned Issuance of a Revised Clean Air Act Permit Program (CAAPP) Permit to United States Steel Corporation, Granite City Works, Granite City, Illinois” (“2013 Response to Comments”), attached hereto as Exhibit D.

III. EMISSION FACTORS IN THE 2013 CAAPP PERMIT ARE NOT EMISSION LIMITS

A. General Background

12. CAAPP permits must address emission limits established in preconstruction permits issued under regulations approved by USEPA in accordance with Title I of the CAA as such limits are considered “applicable requirements.” Section 39.5(1) of the Act defines “applicable requirements” as “all applicable Clean Air Act requirements and any other standard, limitation, or other requirement contained in this

⁶ Order Granting In Part and Denying In Part Petition for Objection to Permit, *In the Matter of: United States Steel Corporation – Granite City Works CAAPP No. 96030056 Proposed by the Illinois Environmental Protection Agency*, Petition No. V-2011-2 (Dec. 3, 2012).

Act or regulations promulgated under this Act as applicable to sources of air contaminants (including requirements that have future effective compliance dates).” 415 ILCS 5/39.5(1).

13. Further, Section 39.5(1) of the Act defines “applicable Clean Air Act requirement,” in relevant part, as:

all of the following as they apply to emissions units in a source (including regulations that have been promulgated or approved by USEPA pursuant to the Clean Air Act which directly impose requirements upon a source and other such federal requirements which have been adopted by the Board. These may include requirements and regulations which have future effective compliance dates. Requirements and regulations will be exempt if USEPA determines that such requirements need not be contained in a Title V permit):

* * *

(2)(i) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated by USEPA under Title I of the Clean Air Act, including Part C or D of the Clean Air Act.

* * *

415 ILCS 5/39.5(1).

14. Preconstruction permits, commonly referred to in Illinois as construction permits, derive from the New Source Review (“NSR”) permit programs required by Title I of the CAA. These programs include the two major NSR permit programs: 1) the PSD program, and the nonattainment NSR program. These programs also encompass state construction permit programs for projects that are not major.

B. 1996 PSD Permit

15. To implement the major NSR permit programs, Illinois’ construction permits must commonly include annual limits for different pollutants emitted by the new

or modified emission units that comprise the proposed projects addressed by the permits, defining their permitted emissions. This is the case for the PSD Permit.

16. The PSD Permit was initially issued on January 25, 1996⁷ to National Steel, the former owner and operator of the Granite City Works. The PSD Permit addressed an expansion project that included increases in the production of iron from the two existing blast furnaces at the steel mill and an increase in the production of steel from the two existing BOP furnaces.

17. Consistent with the PSD program and regulations in place in 1996, the PSD Permit established maximum production rates for the Blast Furnace Operations, BOF Shop, Continuous Casting Operations, as well as maximum annual emission limits for the related emission units and activities. Annual emission limits are located in Table 5 of the PSD Permit.

18. The PSD Permit also included emission factors, by pollutant, for major processes and activities. Emission factors and annual maximum emissions for certain activities are located in Tables 1 – 4 of the PSD Permit.

C. Emission Factors Are Not Emission Limits

19. The 2013 CAAPP Permit includes a new Condition 5.13 with new procedures for “emission limits” in which Illinois EPA details that both the emission factors and maximum emissions are “emission limits.” Condition 5.13 states, in relevant part:

⁷ After the issuance of the PSD Permit in 1996, the permit was subsequently revised several times (on July 23, 1996; October 18, 1996; April 2, 1997; June 6, 1997; January 5, 1999; June 25, 2002; and December 17, 2012). The emission factors established in the PSD Permit in 1996 have remained the same throughout the subsequent revisions to the PSD Permit.

Pursuant to Sections 39.5(7)(b) and (p)(v) of the Act, these procedures are applicable for the emission limits in Conditions 7.1.6(b)(i) through (iv), 7.4.6(b) through (f), 7.5.6(c) through (g) and 7.6.6(a) through (e), which address the rates of emissions or “emission factors” (commonly in pounds/ton) and the annual emissions or “maximum emissions” (in tons/year) of certain emission units . . .

20. Illinois EPA, in the 2013 Response to Comments, explained in regards to new Condition 5.13 that emission factors in the subject conditions are emission limits.

Illinois EPA stated:

The initial discussion in new Condition 5.13, the General Procedures for Certain Permit Limits on Emissions, now explicitly indicates that the “emission factors” contained in the subject conditions are emission limits. This change has been made because of the continuing confusion displayed in comments about whether the emission factors in those conditions were limits or fixed values of emissions that US Steel could use to address compliance with the limits in the subject conditions for annual emissions. This change is consistent with the 2012 order as it stated that the Illinois EPA should consider clarifying in the Revised Permit that the emission factors in the subject conditions are, in fact, emission limits. *See*, 2012 Order, pages 8-9.

2013 Response to Comments at 48. (Emphasis added.)

21. The 2013 CAAPP Permit, for the first time, explicitly states in Condition 5.13 Illinois EPA’s interpretation that the emission factors in the contested conditions are emission limits. Prior CAAPP Permits made no such determination, explicit or otherwise.

22. Further, Illinois EPA had previously never alleged a violation of an “emission factor limit” until it issued the Violation Notice on November 30, 2012, in

which it asserted that the emission factors were emission limits.⁸

23. While Illinois EPA asserts that new Condition 5.13 was added to the 2013 CAAPP Permit to clarify the purpose of the emission factors, by adding new Condition 5.13⁹ to the 2013 CAAPP Permit, Illinois EPA fundamentally changed the contested conditions at Conditions 7.1.6(b)(i)-(iv), 7.4.6(b)-(f), 7.5.6(c)-(g), and 7.6.6(a)-(e), by stating that the emission factors, originally established in the PSD Permit, are emission limits. The assertion that the new language is merely a “clarification” does not comport with Illinois EPA’s own language that the “change” in the permit is to “now explicitly” indicate that the emission factors are emission limits.

24. In addition, some of the emission factors that Illinois EPA refers to as limits by way of Condition 5.13 were derived from AP-42, Compilation of Air Pollutant Emission Factors. In AP-42, USEPA clearly states that AP-42 emission factors are “generally assumed to be representative of long-term averages for all facilities in the source category.”¹⁰ In AP-42, USEPA also states that “[e]mission factors in AP-42 are neither EPA-recommended emission limits . . . nor standards . . .”¹¹ USEPA clarifies:

⁸ Although Illinois EPA noted in the 2011 Response to Comments that certain emission factors from the PSD Permit should be considered limits, Illinois EPA did not explicitly indicate in the 2011 CAAPP Permit that the emission factors were emission limits. It was not until the issuance of the 2013 CAAPP Permit that Illinois EPA stated in the permit itself that emission factors are emission limits.

⁹ Condition 5.13 states that certain emission factors are emission limits. However, it establishes a procedure by which U.S. Steel must review and update emission factors that it is using, which indicates that the emission factors are factors and not emission limits, since a permittee is not allowed to revise its own limits.

¹⁰ Emission Factors & AP-42, Compilation of Air Pollutant Emission Factors, available at www.epa.gov/ttnchie1/ap42 (April 3, 2013).

¹¹ Compilation of Air Pollutant emission Factors Volume I: Stationary Point and Area Sources, Fifth Edition at 2, USEPA (Jan. 1995). (Emphasis in the original.)

[u]se of emission factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.¹²

In short, USEPA clearly articulates that AP-42 emission factors are indeed emission estimates. This is consistent with how Illinois EPA determined the annual emission limits – by using the AP-42 emission factor as the average.

25. The use of emission factors as limits is generally rejected by USEPA. In an order responding to a petition to object to a Title V permit, USEPA plainly states:

[a]n AP-42 emission factor is a value that roughly correlates the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. The use of these emission factors may be appropriate in some permitting applications, such as establishing operating permit fees. However, EPA has stated that AP-42 factors do not yield accurate emissions estimates for individual sources. *See In the Matter of Cargill, Inc.*, Petition IV-2003-7 (Amended Order) at 7, n.3 (Oct. 19, 2004). Because emission factors essentially represent an average of a range of facilities and of emission rates, they are not necessarily indicative of the emissions from a given source at all times; with a few exceptions, use of these factors to develop source-specific permit limits or to determine compliance with permit requirements is generally not recommended.

Order Denying in Part and Granting in Part A Petition for Objection to Permit, *In the Matter of Chevron Products Company, Richmond, California Facility*, Petition No. IX-2004-08 at 23-24 (March 2005). In *Chevron*, USEPA also explains that a single emission factor that was developed to represent *long-term average emissions* is not necessarily predictive of determining compliance at any *specific* time. *Id.*

¹² *Id.*

26. Some of the emission factors from the 1996 PSD Permit that are incorporated into the 2013 CAAPP Permit have low emission factor ratings.¹³ For example, the Hot Metal Desulfurization and Hot Metal Transfer emission factor for VOM at Condition 7.5.6(e) is derived from the AIRS compilation of emission factors, which are rated as “E” quality factors based on the AP-42 rating scale.¹⁴ Since no data were available at the time of the PSD permit application and issuance, the emission factor for VOM was based on an emission factor with a rating of “poor,” which means that the factor was based on limited data. It is unreasonable now, more than 15 years later, to claim that the use of an “E” rated emission factor in a permit application and referred to in the issued permit is intended to be a short term emission limit. Since no data were available at the time of permit application preparation and issuance, it was, at the time, reasonable to use the emission factor to estimate annual emissions.

27. Also, some emission factors are derived from historical stack tests conducted many years ago, and accordingly, outdated stack testing data should not be considered emission limits because the emission factors established by the tests are averages. For example, in the case of the iron spout baghouse, the SO₂ emission factor (0.0073 lb/ton) at Condition 7.4.6(f) is based on an average of three one-hour test runs, at which time, several parameters were tested to develop the emission factor. The SO₂ emission factor is an average, where two of the test runs were above the 0.0073 lb/ton

¹³ Emission factor ratings in AP-42 provide indications of the robustness, or appropriateness, of emission factors *for estimating average emissions* for a source activity.

¹⁴ AP-42 rates emission factors using letters: A (Excellent), B (Above Average), C (Average), D (Below Average), and E (Poor).

SO2 factor, which was ultimately included in the PSD Permit. Illinois EPA used the SO2 emission factor established during the stack testing to determine anticipated average emissions, which were then used as the basis for annual emission limits. Moreover, even in cases where stack test data are used to establish emission limits, it is usual and customary (even in 1996) to apply an operations contingency or “safety” factor to account for expected variability in operations and process parameters, such as temperature. The emission factors established by stack testing were intended to be only factors and not limits, as Illinois EPA has interpreted, because the factors are based on an average developed during multiple test runs.

28. Accordingly, Illinois EPA’s inclusion of new Condition 5.13 and new determination in referring to the emission factors as emission limits in Condition 7.1.6(b)(i)-(iv), Condition 7.4.6(b)-(f), Condition 7.5.6(c)-(g), and Condition 7.6.6(a)-(e) as included in the 2013 CAAPP Permit was arbitrary, capricious and not supported by the Act or Board regulations.

IV. A COMPLIANCE SCHEDULE SHOULD BE INCLUDED IN THE 2013 CAAPP PERMIT

29. On November 30, 2012, Illinois EPA issued VN No. A-2012-00169, attached here to as Exhibit E, to U.S. Steel alleging violations of the NOx and VOM annual limits for the BOF and associated electrostatic precipitator (“ESP”) in Condition 7.5.6(c) of U.S. Steel’s 2011 CAAPP Permit. Illinois EPA also alleged a violation of the NOx and VOM emission factors stating that the Facility “caused or

allowed the emissions of NOx and VOM in excess of the emission limits of 0.0389 lb/ton and 0.006 lb/ton, respectively.” See Exhibit E.

30. On January 30, 2012, U.S. Steel submitted to Illinois EPA a detailed compliance plan/schedule for future stack testing and permitting in order to establish appropriate NOx and VOM annual emission limits for the BOF and ESP. U.S. Steel requested that the compliance plan/schedule be incorporated into the 2013 CAAPP Permit. U.S. Steel’s proposed compliance plan/schedule is attached hereto as Exhibit F.

31. As noted above, U.S. Steel submitted comments (Exhibit C) during the public comment period on the Public Notice Draft of the 2013 CAAPP Permit. Although Illinois EPA had made the preliminary decision not to include U.S. Steel’s proposed compliance schedule in the planned revisions to the 2013 CAAPP Permit, U.S. Steel explained in its comments that the Act and the regulations promulgated thereunder require that a compliance schedule be included in the 2013 CAAPP Permit, since stack testing demonstrated that U.S. Steel cannot comply with the annual maximum emission limits at Condition 7.5.6(c). See Exhibit C for U.S. Steel’s discussion detailing why a compliance schedule should be included in the 2013 CAAPP Permit.

32. In addition to the Act’s requirements for compliance schedules, Section 504(a) of the CAA, 42 U.S.C. § 7661c(a), requires compliance schedules in CAAPP permits. Section 504(a) states:

Each permit issued under this subchapter shall include enforceable emission limitations and standards, a schedule of compliance, a requirement that the permittee submit to the permitting authority, no less often than every 6 months, the results of any required monitoring , and such other conditions as are necessary to assure compliance with

applicable requirements of this chapter, including the requirements of the applicable implementation plan.

42 U.S.C. § 7661c(a). (Emphasis added.)

33. Based on the above provisions, CAAPP permits are required to include compliance schedules for emission units that are not in compliance with applicable requirements of the permit at the time of issuance. Illinois EPA stated that it is too soon to determine non-compliance based on the issuance of the VN to U.S. Steel because the enforcement process is only in the beginning stages. Illinois EPA also noted that other considerations and information needs to be taken into account prior to revising the CAAPP Permit to include a compliance schedule. However, U.S. Steel's January 30, 2013 letter requesting a compliance schedule clearly explained that data from the last two stack tests demonstrated "that the BOF ESP cannot maintain compliance with the current emission limits for NOx and VOM." *See* Exhibit F.

34. Thus, U.S. Steel concluded that, based on stack test data, that it cannot comply with certain permit requirements that were expected to be, and in fact were, included in the 2013 CAAPP Permit. Accordingly, in its February 14, 2013 comments on the draft 2013 CAAPP Permit, U.S. Steel requested that a compliance schedule be included in the 2013 CAAPP Permit and requested Illinois EPA reconsider its position on the issue. Furthermore, U.S. Steel requested that Illinois EPA include the requested compliance schedule at a new Condition 7.5.13 in the 2013 CAAPP Permit, as well as add a Note (*) after existing Condition 7.5.6(c) as follows:

* These limits have been addressed by the compliance schedule established for compliance with these factors and limits. (See Condition 7.5.13).

Exhibit C at 3.

35. Because a compliance schedule was not included at Condition 7.5.13 and the note was not included at Condition 7.5.6(c), U.S. Steel is not only contesting the emission factors as emission limits in Condition 7.5.6(c), but it is also contesting the NOx and VOM annual maximum emissions at Condition 7.5.6(c), as U.S. Steel has demonstrated that it cannot meet the 69.63 tpy NOx and 10.74 tpy VOM annual limits for the BOF ESP Stack. The corresponding annual emission limits for NOx and VOM for BOF Shop emissions at Condition 7.5.6(b) are based on the BOF ESP Stack maximum annual emissions at Condition 7.5.6(c), and accordingly, the annual emission limits at Condition 7.5.6(b) are also being contested since U.S. has concluded, based on stack testing, that it cannot comply with the annual NOx and VOM emission limits for the BOF Shop.

WHEREFORE, Petitioner, UNITED STATES STEEL CORPORATION petitions the Illinois Pollution Control Board for a hearing on the Illinois EPA's final action on the 2013 CAAPP Permit with respect to the permit conditions and issues referenced herein, and a determination that the Illinois EPA's action was arbitrary, capricious and not supported by the Act or Board regulations. In addition, as set forth in the accompanying Motion, U.S. Steel requests that the Board stay the contested conditions of the 2013 CAAPP Permit during the pendency of the review process. U.S. Steel reserves the right to amend this Petition as necessary in order to raise newly discovered issues arising from

the 2013 CAAPP Permit and/or to provide additional specificity regarding the conditions of the 2013 CAAPP Permit, if required by the Board.

Respectfully submitted,

UNITED STATES STEEL CORPORATION,
Petitioner,

Dated: April 8, 2013

By: Monica T. Rios
Monica T. Rios

Katherine D. Hodge
Monica T. Rios
HODGE DWYER & DRIVER
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217/785-1705

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
REVISED

PERMITTEE:

U. S. Steel Corporation
Granite City Works
Attn: Bryan Kresak
20th and State Streets
Granite City, Illinois 62040

I.D. No.: 119813AAI

Date Originally Received: March 6, 1996

Application No.: 96030056

Date Originally Issued: September 3, 2009

Date Revised Permit Issued: March 4, 2013

Expiration Date¹: September 3, 2014

Operation of: Integrated Steel Mill

Source Location: 20th and State Streets, Granite City

Responsible Official: Richard E. Veitch, General Manager

This permit is hereby granted to the above-designated Permittee to OPERATE an Integrated Steel Mill Plant, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

This permit was revised on March 4, 2013, in accordance with Sections 39.5(9)(e) through (g) of the Environmental Protection Act, pursuant to an order from Lisa P. Jackson, Administrator of the USEPA, *In the Matter of United States Steel Corporation - Granite City Works*, Petition Number V-2011-2 (December 3, 2012), which order was received by the Illinois EPA on December 4, 2012.

If you have any questions concerning this permit, please contact Anatoly Belogorsky or Michael Reed at 217/785-1705.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

ECB:MR:psj

cc: Illinois EPA, FOS, Region 3
CES
Lotus Notes

¹ Except as provided in Conditions 1.5 and 8.7 of this permit.

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1.0 SOURCE IDENTIFICATION

1.1 Source

U. S. Steel Corporation
Granite City Works
20th and State Streets
Granite City, Illinois 62040
618/451-3456

I.D. No.: 119813AAI
County: Madison
Standard Industrial Classification: 3312, Integrated Steel Mill

Responsible Official: Richard E. Veitch, General Manager

Delegated Authorities:
Michelle Fields, Division Manager - Coke and Iron Making;
Michael Terry, Division Manager - Steelmaking

1.2 Owner/Parent Company

United States Steel Corporation
600 Grant Street
Pittsburgh, Pennsylvania 15219

1.3 Operator

U. S. Steel Corporation
Granite City Works
20th and State Streets
Granite City, Illinois 62040

Contact Person:
Bryan Kresak, Manager Environmental Control
618/451-3456

1.4 Source Description

Integrated steel manufacturing employing raw material processing/preparation, coke production, iron production, steel production, and steel finishing.

1.5 Title I Conditions

As generally identified below, this CAAPP permit contains certain conditions for emission units at this source that address the applicability of permitting programs for the construction and modification of sources, which programs were established pursuant to Title I of the Clean Air Act (CAA) and regulations thereunder. These programs include 40 CFR 52.21, Prevention of Significant Deterioration (PSD) and 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM), and are implemented by the Illinois EPA pursuant to Sections 9, 9.1, 39(a) and 39.5(7)(a) of the Illinois Environmental Protection Act (Act). These conditions continue in effect,

notwithstanding the expiration date specified on the first page of this permit, as their authority derives from Titles I and V of the CAA, as well as Titles II and X of the Act. (See also Condition 8.7.)

- a. This permit contains "Title I Conditions" that reflect Title I requirements established in permits previously issued for this source, which conditions are specifically designated as "T1".
- b. This permit contains Title I conditions that are newly established in this CAAPP permit, which conditions are specifically designated as "T1N".

2.0 LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED

ACMA	Alternative Compliance Market Account
Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
ATU	Allotment Trading Unit
BACT	Best Available Control Technology
BAT	Best Available Technology
BFG	Blast Furnace Gas
BOF	Basic Oxygen Furnace
BOPF	Basic Oxygen Process Furnace
BTX	Benzene, toluene and xylene
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COG	Coke Oven Gas
COG-DS	Coke Oven Gas Desulfurization System
COMS	Continuous Opacity Monitoring System
CPMS	Continuous Parameters Monitoring System
dscf	Dry standard cubic feet
ERMS	Emissions Reduction Market System
ESP	Electro Static Precipitator
°F	Fahrenheit
FESOP	Federally Enforceable State Operating Permit
GHG	Greenhouse Gases
gr	grains
HAP	Hazardous Air Pollutant
HCL	Hydrogen Chloride
H ₂ S	Hydrogen Sulfate
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
LAER	Lowest Achievable Emission Rate
LMF	Ladle Metallurgy Furnace
MACT	Maximum Achievable Control Technology
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods

PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns as measured by applicable test or monitoring methods
ppm	Parts per million
PSD	Prevention of Significant Deterioration
RMP	Risk Management Plan
scf	Standard cubic feet
SO ₂	Sulfur Dioxide
SSM	Startup, Shutdown and Malfunction
T1	Title I - identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New - identifies Title I conditions that are being established in this permit
T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VHAP	Volatile Hazardous Air Pollutant
VOM	Volatile Organic Material

3.0 CONDITIONS FOR INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

a. Material Handling and Processing Operations

N/A

b. Coke Production

N/A

c. Coke Oven Gas By-Products Recovery Plant

Ammonium Sulfate Handling

d. Blast Furnaces

N/A

e. Basic Oxygen Furnaces

N/A

f. Continuous Casting

Tanks #543, #544, #545, #555

g. Finishing Operations

Scale Pits

#6 Zinc Pot (Backup)

#7 and #8 Zinc Pots

Storage Tanks ##306-310, #403, #427, #800, #815

h. Wastewater Treatment

N/A

i. Boiler Houses

N/A

3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

a. Material Handling Operations

N/A

b. Coke Production

N/A

c. Coke Oven Gas By-Products Recovery Plant

Storage Tanks #116, #117, #118, #120

d. Blast Furnaces

Torpedo Car Dekishing

e. Basic Oxygen Furnaces

Lime/Magnesium Handling and Storage Unit

f. Continuous Casting

N/A

g. Finishing Operations

72" Line and Cold Mill

h. Wastewater Treatment

N/A

i. Boiler Houses

N/A

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

a. Material Handling Operations

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

b. Coke Production

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

c. Coke Oven Gas By-Products Recovery Plant

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

d. Blast Furnaces

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat

input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

e. Basic Oxygen Furnaces

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

f. Continuous Casting

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a) (17)].

g. Finishing Operations

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a) (4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a) (10)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a) (11)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a) (17)].

h. Wastewater Treatment

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a) (10)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a) (11)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a) (17)].

i. Boiler Houses

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a) (4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a) (10)].

Storage tanks of virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a) (11)].

Gas turbines and stationary reciprocating internal combustion engines of less than 112 kW (150 horsepower) power output [35 IAC 201.210(a) (15)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a) (17)].

- 3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b). Note: These activities are not required to be individually listed.

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.3.2), the Permittee shall comply with the following requirements, as applicable:

- 3.2.1 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322 (see Attachment 2) and 35 IAC Part 266. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.
- 3.2.2 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or, if no odor nuisance exists, do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.
- 3.2.3 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 219.182.
- 3.2.4 For each open burning activity, the Permittee shall comply with 35 IAC Part 237, including the requirement to obtain a permit for open burning in accordance with 35 IAC 237.201, if necessary.
- 3.2.5 For each storage tank that has a storage capacity greater than 946 liters (250 gallons) and, if no odor nuisance exists, that stores an organic material with a vapor pressure exceeding 2.5 psia, the Permittee shall comply with the applicable requirements of 35 IAC 219.122, which requires use of a permanent submerged loading pipe, submerged fill, a vapor recovery system, or an equivalent device approved by the Illinois EPA. [Note: storage tanks used for storing gasoline and any hazardous air pollutants are not eligible for insignificant activities].
- 3.2.6 For sulfuric acid operations and storage, the Permittee shall comply with the following emission limits of sulfuric acid and/or sulfur trioxide from all emission sources (with the exception of fuel combustion emission sources and acid manufacturing) at a plant or premises, pursuant to 35 IAC 214.303:
- a. 45.4 grams in any one hour period for sulfuric acid usage less than 1180 Mg/yr (100 percent acid basis) (0.10 lbs/hr up to 1300 T/yr); and
 - b. 250 grams per metric ton of acid used for sulfuric acid usage greater than or equal to 1180 Mg/yr (100 percent acid basis) (0.50 lbs/T over 1300 T/yr).

3.3 Addition of Insignificant Activities

- 3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a

type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

- 3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.
- 3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SUMMARY OF SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Department	Description	Emission Control Equipment	Section
Material Handling and Processing Operations	Coal Crusher, Coal Pulverizer, Conveyors, Screens, Storage Bins, Feed Hoppers	Baghouse, Various Dust Collectors and Enclosures	7.1
Coke Production	Coke Oven Batteries "A" and "B" Coke Quenching	Water Scrubber; Flares Tower, Baffles	7.2
Coke By-Product Recovery Plant	Various Storage Tanks and Process Vessels	Vapor Recovery System and Various Blanketing and Negative Pressure Systems	7.3
COG Desulfurization System	Amine Unit and SRU Unit	Thermal Oxidizer	
COG System	Holding Tank and COG Flare	None	
Blast Furnaces	Blast Furnaces "A" and "B" BFG Flares #1 and #2	Casthouse Baghouse; Iron Spout Baghouse	7.4
Basic Oxygen Processes	BOF #1/#2 and Auxiliary Equipment	Electrostatic Precipitator; Baghouses	7.5
Continuous Casting	Continuous Casting and Slab Formation	None	7.6
Hot Strip Mill	Slab Reheat Furnaces	None	7.7
Finishing Operations	Pickling Line, Galvanizing Lines, Coating Operations	Fume Scrubbers; Catalytic Converter	7.8
Wastewater Treatment Plant	Various tanks, filtration and Lagoons	None	7.9
Boilers	Power Boiler #1 Boilers #11 and #12 Cooling Water Tower Portable Boilers #1 - #4	Flue Gas Recirculation (planned for Boilers #11 and #12)	7.10
Internal Combustion Engine	Emergency Engine-Generator	None	7.11
Gasoline Storage and Dispensing	Four Gasoline Storage Tanks and associated Dispensing Operations	None	7.12

Department	Description	Emission Control Equipment	Section
Fugitive Dust	Landfill Vehicular Traffic on Roadways, Parking Lots and Other Open Areas Storage Piles including truck unloading, wind erosion and material transfer from storage piles, beaching areas	None	7.13

5.0 OVERALL SOURCE CONDITIONS

5.1 Applicability of Clean Air Act Permit Program (CAAPP)

- 5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of NO_x, PM₁₀, SO₂, VOM, CO, GHG and HAP emissions.
- 5.1.2 For purposes of the CAAPP, U.S. Steel is considered a single source with Stein Steel Mill Services (I.D. 119813AAD) located at 20th Street and Edwardsville in Granite City. Stein Steel Mill Services has a separate CAAPP permit for its operations.
- 5.1.3 For purposes of the CAAPP, U.S. Steel is considered a single source with Granite City Slag, LLC (I.D. 119040ATF) located at 20th Street and Edwardsville in Granite City. Granite City Slag has a separate CAAPP permit for its operations.
- 5.1.4 For purposes of the CAAPP, U.S. Steel is considered a single source with AKJ Industries, Inc (I.D. 119040AEB) located at 20th Street and Edwardsville in Granite City. AKJ Industries has a separate CAAPP permit for its operations.
- 5.1.5 For purposes of the CAAPP, U.S. Steel is considered a single source with Oil Technology, Inc (I.D. 119040ATG) located onsite of Granite City Steel (Route 203) in Granite City. Oil Technology has a separate CAAPP permit for its operations.
- 5.1.6 For purposes of the CAAPP, U.S. Steel is considered a single source with Tube City IMS (I.D.119040ATL) located at 2500 East 23rd Street in Granite City. Tube City has a separate CAAPP permit for its operations.
- 5.1.7 For purposes of the CAAPP, U.S. Steel is considered a single source with Gateway Energy & Coke Co LLC (I.D. 119040ATN) located at Edwardsville Road in Granite City. Gateway Energy & Coke has elected to obtain a separate CAAPP permit for its operations.

5.2 Area Designation

- 5.2.1 This permit is issued based on the source being located in an area that, as of the date of permit issuance, is designated nonattainment for the National Ambient Air Quality Standards for ozone (moderate nonattainment), PM_{2.5} and lead, and attainment or unclassifiable for all other criteria pollutants (PM₁₀, CO, NO_x, SO₂).

5.3 Source-Wide Applicable Provisions and Regulations

- 5.3.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions for Specific Emission Units) of this permit.
- 5.3.2 Fugitive Dust

- a. This source shall be operated under the provisions of Fugitive Particulate Matter Operating Program prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions [35 IAC 212.309(a)]. The Permittee shall comply with the fugitive particulate matter operating program and any amendments to the program submitted pursuant to Condition 5.3.2(b), as required by 35 IAC 212.309. As a minimum, the operating program shall include provisions identified in 35 IAC 212.310(a) through (g) and the following:
 - i. A detailed description of the best management practices utilized to achieve compliance with 35 IAC 212.304 through 212.308.
 - ii. Estimated frequency of application of dust suppressants by location; and
 - iii. Such other information as may be necessary to facilitate the Illinois EPA's review of the operating program.
- b. Pursuant to 35 IAC 212.312, the operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with the requirements set forth by this Condition 5.3.2 and shall be submitted to the Illinois EPA within 30 days of such amendment.
- c. In addition to the items described above in Condition 5.3.2(a), the Permittee shall include the following additional plans and programs as part of the Fugitive Particulate Matter Operating Program:
 - i. Housekeeping program for non-roadway areas as required by Condition 7.13.5(a) (i) (B);
 - ii. Road Cleaning Program as required by Condition 7.13.5(d); and
 - iii. On-site fugitive dust control program as referenced in Condition 7.13.9(b).
- d. The revised Fugitive Particulate Matter Operating Program, submitted by the Permittee on August 12, 2009, (identified as Revision 8 and necessitated by changes to responsible officials and description of areas treated] and containing an attached Table and Map for the iron-making and steel-making roads respectively), is incorporated herein by reference. The document constitutes the formal operating program required under 35 IAC 212.310, addressing the control of fugitive particulate matter emissions from all plant roadways, including the iron-making and steel-making

roads, storage piles, access areas near storage piles, and other subject operations located at the facility that are subject to 35 IAC 212.309.

Any future revision to the aforementioned operating program made by the Permittee during the permit term is automatically incorporated by reference provided that said revision is not expressly disapproved, in writing, by the Illinois EPA within 30 days of receipt of said revision. In the event that the Illinois EPA notifies the Permittee of a deficiency with any revision to the operating program, the Permittee shall be required to revise and resubmit the operating program within 30 days of receipt of notification to address the deficiency [415 ILCS 39.5(7)(a)].

- e. Pursuant to 35 IAC 212.301, the affected emission units at the source shall not cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source.
- f. Pursuant to 35 IAC 212.307, all unloading and transporting operations of materials collected by pollution control equipment shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods.

5.3.3 PM₁₀ Contingency Measure Plan

- a. This stationary source meets the criteria in 35 IAC 212.700 and is required to prepare and submit a contingency measure plan reflecting the PM₁₀ emission reductions as set forth in 35 IAC 212.701 and 212.703.
- b. PM₁₀ Contingency Measure Plan shall be implemented by the Permittee in accordance with 35 IAC 212.704 upon notification from the Illinois EPA.
- c. Pursuant to 35 IAC 212.701(c), for operational changes subject to Sections 212.304, 212.305, 212.306, 212.308, 212.316(a) through (e), 212.424 or 212.464 which require either a new permit or a revision to an existing permit the Permittee shall, within 30 days after such changes, submit a request to modify this CAAPP permit in order to include a new, appropriate contingency measure plan.
- d. The plan, as submitted by the Permittee on November 15, 1994 (which includes tabulations of PM₁₀ fugitive emissions, maps for the steel-works and iron making respectively, and a comparative analysis of contingency requirements and existing road programs), is incorporated herein by reference. The document constitutes the formal PM₁₀ Contingency Measure Plan required by 35 IAC 212.701, addressing the Levels 1 and 2 control measures for reducing annual source-wide fugitive emissions of PM₁₀ from plant

roads (paved and unpaved) and materials handling operations in the event of an exceedance of the 24-hour ambient air quality standard for PM10 under 35 IAC 212.704 or 212.705.

5.3.4 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.3.5 Standards for Asbestos Demolition and Renovation (40 CFR 61.145)

- a. Prior to demolition or renovation of the affected facility or part of the affected facility, the Permittee shall fulfill notification requirements established by 40 CFR 61.145(b).
- b. During demolition or renovation, the Permittee shall comply with the procedures for asbestos emission control established by 40 CFR 61.145(c).

5.3.6 Future Emission Standards

Should this stationary source become subject to a regulation under 40 CFR Parts 60, 61, 62, or 63, or 35 IAC Subtitle B after the date this permit is issued, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by Condition 9.8. This permit may also have to be revised or reopened to address such new regulations (see Condition 9.12.2).

5.3.7 Episode Action Plan

- a. Pursuant to 35 IAC 244.141, the Permittee shall maintain at the source and have on file with the Illinois EPA a written Episode Action Plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures.

- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared, as required by 35 IAC 244.169, or as may otherwise be required under 35 IAC 244, Appendix D.
- c. If an operational change occurs at the source which invalidates the plan, a revised plan shall be submitted to the Illinois EPA for review within 30 days of the change, pursuant to 35 IAC 244.143(d). Such plans shall be further revised if disapproved by the Illinois EPA.
- d. The revised plan, submitted by the Permittee on October 19, 2009, (which contains a completed APC Form 100 and attached Tables I-V identifying additional actions to be implemented), is incorporated herein by reference. The document constitutes the formal Episode Action Plan required by 35 IAC 244.142, addressing the actions that will be implemented to reduce SO₂, PM₁₀, NO₂, CO and VOM emissions from various emissions units in the event of a yellow alert, red alert or emergency issued under 35 IAC 244.161-244.165.

Any future revision to the aforementioned plan made by the Permittee during the permit term is automatically incorporated by reference provided that said revision is not expressly disapproved, in writing, by the Illinois EPA within 30 days of receipt of said revision. In the event that the Illinois EPA notifies the Permittee of a deficiency with any revision to the plan, the Permittee shall be required to revise and resubmit the plan within 30 days of receipt of notification to address the deficiency [415 ILCS 39.5(7) (a)].

5.3.8 Risk Management Plan (RMP)

Should this stationary source, as defined in 40 CFR 68.3, become subject to the federal regulations for Chemical Accident Prevention in 40 CFR Part 68, then the owner or operator shall submit the items below. This condition is imposed in this permit pursuant to 40 CFR 68.215(a)(2)(i) and (ii).

- a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or
- b. A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the RMP, as part of the annual compliance certification required by Condition 9.8.

5.3.9 Energy Assessment (40 CFR 63, Subpart DDDDD)

Pursuant to 40 CFR 63.7500(a)(1) and Item 3 of Table 3 of 40 CFR 63 Subpart DDDDD, the Permittee must have a one-time energy assessment performed on the major source facility (i.e., the facility) by a qualified energy assessor. This energy

assessment shall be completed no later than the applicable compliance date of this NESHAP for existing sources and meet requirements in Table 3, including preparation of a comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments. This energy assessment shall be conducted consistent with the definitions for "energy assessment", "energy management practices" and "energy use system" in 40 CFR 63.7575

5.4 Source-Wide Non-Applicability of Regulations of Concern

- a. Except where noted, 35 IAC 212.321 and 212.322 shall not apply to the steel manufacturing processes subject to 35 IAC 212.442 through 212.452 [35 IAC 212.441].
- b. Except where noted, emission limitations of 35 IAC 212.324 are not applicable to any emission unit subject to a specific emissions standard or limitation contained in 35 IAC Subpart R, Primary and Fabricated Metal Products and Machinery Manufacture pursuant to 35 IAC 212.324(a)(3)(C).
- c. This source (as a source of coke manufacturing, by-products recovery plant, iron and steel production) is excluded from the control requirements of 35 IAC Part 219 Subpart TT pursuant to 35 IAC 219.980(e).
- d. This source does not receive any off-site waste as defined in 40 CFR 63.680(b) and, therefore is not subject to 40 CFR Part 63 Subpart DD "Off-site Waste and Recovery Operations".
- e. The source is not required to address 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources at the time of issuance of this permit, because the initial CAAPP application was submitted prior to April 1998 [40 CFR 64.5(a)(1)].

5.5 Source-Wide Control Requirements and Work Practices

The Permittee (U.S. Steel), in conjunction with Gateway Energy and Coke Company shall maintain 267.77 tons of PM₁₀ emission offsets generated by the following activities/projects (see also Sections 7.3 and 7.13):

Activity/Project	(Tons/Year)
Coke Oven Gas (COG) Desulfurization Project	31.74
Road Cleaning Program	236.03
Total:	267.77

- a. These emission reductions have been relied upon by the Illinois EPA to issue Construction Permits 06070088 and 06070020 for projects by the Permittee and Gateway, respectively and cannot be used as emission reduction credits for other purposes.
- b. If the Permittee proposes to rely upon emission offsets from other sources or other activities/projects, the Permittee shall

apply for and obtain a revision to Permit 06070088 prior to relying on such emission offsets, which application shall be accompanied by detailed documentation for the nature and amount of those alternative emission offsets.

5.6 Source-Wide Production and Emission Limitations

5.6.1 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.6.2 Other Source-Wide Production and Emission Limitations from existing permits:

a. Provisions from Construction Permit #95010001

- i. Total production of iron and steel by U.S. Steel/Granite City plant shall not exceed the following limits. Compliance with these annual production limits shall 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 Illinois EPA Compliance Section and Collinsville Regional Office as provided below [T1]:

Product	Net tons/yr
Iron	3,165,000
Steel	3,580,000

- A. If no production schedule is submitted to the Illinois EPA 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 Condition 5.6.2(a) (i) above.
- B.
 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 Condition 5.6.2(a) (i) above. 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 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.

ii. Total fuel usage for blast furnaces stoves (A and B), boilers 11 and 12, ladle drying preheaters and blast furnace gas flare #1 and shall not exceed the following limits. Compliance with the monthly limits shall be determined by direct comparison of monthly data to the applicable limit. Compliance with the annual limits shall be determined based on a calendar year [T1]:

A. Natural Gas usage:

225 million ft³ per month and 1,346 million ft³ per year;

B. Blast Furnace Gas (BFG) usage:

30,800 million ft³ per month and 185,030 million ft³ per year; and

C. Fuel Oil usage:

60,000 gallons per month and 365,000 gallons per year.

iii. A. Annual emissions from the fuel combustion units identified in Condition 5.6.2(a) (ii) above shall not exceed the following limits in tons/year:

PM/PM ₁₀	SO ₂ *	NO _x	VOM	CO	Lead
274	641	706	2	1,295	0.06

* These limits have been addressed by an enforcement action, with a compliance schedule established for compliance with these limits. (See Condition 7.4.13)

B. Annual emissions from each individual fuel used in the fuel combustion units identified in

Condition 5.6.2(a) (ii) above shall not exceed the following limits:

1. Natural Gas

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmcf)</u>	<u>Maximum Emissions (Tons/Yr)</u>
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

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmcf)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	2.90	268.29
PM ₁₀	2.90	268.29
SO ₂	6.65*	615.22*
NO _x	5.28	488.48
CO	13.70	1,267.46

* These limits have been addressed by an enforcement action, with a compliance schedule established for compliance with these factors and limits. (See Condition 7.4.13)

3. Fuel Oil

<u>Pollutant</u>	<u>Emission Factor (Lbs/Mgal)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	9.72	1.77
PM ₁₀	9.75	1.77
SO ₂	141.30	25.79
NO _x	55.00	10.04
VOM	0.28	0.05
CO	5.00	0.91
Lead	0.336	0.06

(Waste Oil)

C. Compliance with the annual limits in Condition 5.6.2(a) (iii) shall be determined based on a calendar year.

b. Provisions from Construction Permit #06070022:

Annual emissions of the source from combustion of COG shall not exceed the following limits [T1]

	Limits (Tons/Year)	
	PM ₁₀	SO ₂
"Outage" of Affected System	47.55	530.59
Total (includes normal and outage):	224.80	807.90

c. Provisions from FESOP #94120017:

Emissions of SO₂ from the so called "sulfur dioxide emission units" operated at the source shall not exceed the following limits. Compliance with the limits shall be determined in accordance with the procedure in Condition 5.12.

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
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

5.7 Source-Wide Testing Requirements

Pursuant to 35 IAC 201.282 and Section 4(b) of the Act, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

- a. Testing by Owner or Operator: The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests [35 IAC 201.282(a)].

- b. Testing by the Illinois EPA: The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary [35 IAC 201.282(b)].
- c. Any such tests are also subject to the Testing Procedures of Condition 8.5 set forth in the General Permit Conditions of Section 8.

5.8 Source-Wide Monitoring Requirements

- a. Requirements for coke oven gas (COG) flow meters from FESOP #94120017: for purposes of these conditions, a Unit Operating Group is a group of emission units as defined in Condition 5.6.2(c).

Note: Requirements for monitoring the sulfur content of COG as present in FESOP #94120017 are included in Section 7.3 of this CAAPP permit.

- i. The Permittee shall test, operate, and maintain a system for measuring the COG usage for each unit operating group.
- ii. A flow meter shall be maintained on the main Blast Furnace and Steelworks COG feed lines and each individual emission unit or unit operating group and shall be used to measure the COG usage rate. The total COG usage for each unit operating group as a whole shall be the sum of the individual usage for the emission units of that group as measured by the individual meters or that measured by a single flow meter measuring the COG usage for the unit operating group as a whole.
- iii. The COG flow meter system shall be capable of recording the COG usage in standard cubic feet on an hourly and daily basis. COG usage shall be obtained from the COG flow meter system to allow the determination of hourly and/or daily COG usage for each unit operating group, as needed for the emission rate calculations of this permit.
- iv. The COG flow meter system shall be operated, and data collected, reduced and maintained, in accordance with the applicable requirements of 40 CFR 60.13 and 35 Ill. Adm. Code Part 201 Subpart L.
 - A. Each COG flow meter shall be tested at least every 12 months, in accordance with the procedures of 40 CFR 60, Appendix B, Performance Specification 6.

- B. The results of these flow meter performance tests shall be sent to the Illinois EPA's Division of Air Pollution Control, Permit Section and Regional Office within 14 days after completion of the tests. In addition, the results shall be maintained in accordance with the recordkeeping requirements specified in this permit.
 - C. If a single flow meter on an unit operating group fails, then the COG usage for that group may be calculated using the difference between overall total COG usage and the total COG usage at the remaining properly operating COG flow meters, or the difference in COG usage from the main COG feed line of the affected unit operating group and the COG usage at the remaining properly operating flow meters associated with that main feed line.
 - D. In the event that several flow meters are down such that the above COG usage calculation is not possible, the COG usage for the affected unit operating group(s) shall be determined by a method approved by the Illinois EPA (e.g., use of temporary backup measurement system). In no case shall COG usage not be determined by a method described in this permit, or an approved alternative method, so as to result in insufficient data being obtained to determine the COG usage for any unit operating group as needed to evaluate compliance using the emission rate calculations of this permit.
- v. In the event of malfunction or breakdown of a COG flow meter system, the Permittee shall repair and recalibrate the meter or monitoring system as soon as practicable but no later than 10 days after the malfunction or breakdown is detected, unless prior Illinois EPA approval is obtained by submitting a notification of extended outage and adequate justification to the Illinois EPA detailing the reasons for delay. Records of repair and recalibration must be maintained in accordance with the recordkeeping requirements of this CAAPP permit. This condition does not relieve the Permittee of the minimum data obtaining requirements of this CAAPP permit.
- b. The Permittee shall conduct observations at the property line of the source for visible emissions of fugitive particular matter from the source to address compliance with 35 IAC 212.301, upon request by the Illinois EPA, as follows:

For this purpose, daily observations shall be conducted for a week for particular area(s) of concern at the source, as specified in the request. Observations shall begin either within one day or three days of receipt of a written request

from the Illinois EPA, depending, respectively, upon whether observations will be conducted by employees of the Permittee or a third-party observer hired by the Permittee to conduct observations on its behalf. The Permittee shall keep records for these observations, including identity of the observer, the date and time of observations, the location(s) from which observations were made, and duration of any fugitive emissions event(s).

- c. Pursuant to FESOP 94120017, the Permittee shall analyze the fuel oil used at the source in accordance with the following.
 - i. The sulfur content and density as determined by the ASTM methods specified in the testing requirements of FESOP 94120017 shall be used in emission calculations.
 - ii. The sulfur content and density of the fuel oil shall be determined upon each instance of fuel oil usage.

5.9 Source-Wide Recordkeeping Requirements

5.9.1 Records for Opacity and Emission Limits

The Permittee shall maintain the following records pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall maintain records of the total annual net production of iron and steel on a monthly basis and a total calendar year basis, to verify compliance with Condition 5.6.2(a)(i).
- b. The Permittee shall maintain records of monthly and annual use of fuels to verify compliance with Condition 5.6.2(a)(ii).
- c. The Permittee shall maintain records of annual emissions from the emission units listed in Condition 5.6.2(a)(ii) for comparison to the annual emission limits in Condition 5.6.2(a)(iii)(A) for PM/PM₁₀, SO₂, NO_x, VOM, CO and lead.
- d. The Permittee shall maintain the following records for the emission units identified in Condition 5.6.2(a)(ii) to verify the emission factors for different fuels listed in Condition 5.6.2(a)(iii)(B):
 - i. For emissions of NO_x, PM, PM₁₀, VOM, and CO, records for the emission factors used by the Permittee to determine emissions of the pollutant from the subject emission units for firing of natural gas, blast furnace gas and oil, with supporting documentation and analysis, and the "maximum" annual emission factors for the different fuels and pollutants calculated as a weighted average of the individual

factors for different emission units, weighted for the greatest relative annual use of fuel in different units, beginning with the unit that has the highest emission factor. For example, if the boilers have the highest emission factors for NO_x, the factors shall be weighted for the greatest percentage of fuels expected to be used in the boilers, and then for the units that have the next highest emission factor(s), and so forth until all of the fuel has been accounted for. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the subject unit do not understate emissions, including review when emission testing is conducted for the subject emission units, review when emission testing of similar emission units is conducted at other facilities (as would be needed if the Permittee is relying upon data from emission testing at other US Steel facilities), and review when USEPA revises its *Compilation of Air Pollutant Emission Factors*, AP-42 (as would be needed if the Permittee has relied upon emission factors from AP-42). These records shall be prepared and copies submitted to the Illinois EPA in accordance with Condition 5.9.6(c).

- ii. Records for the sulfur content of COG and BFG, as measured pursuant to Conditions 5.9.1(e) and 7.3.9(f) and Condition 7.10.8-1(c), respectively, which data shall either be used when determined SO₂ emissions from combustion of the fuels or used to confirm that the determinations of SO₂ emissions from combustion of these fuels do not understate actual SO₂ emissions.
 - iii. Records for the actual average annual emission rates for different fuels and pollutants, including SO₂ and lead, calculated by dividing the actual emissions of the subject units for different fuels and pollutants by the annual usage of fuels. These records shall be compiled on an annual basis by the Permittee when the records for annual emissions of the subject units are compiled.
- e. The Permittee shall maintain the following records for the emissions of PM₁₀* and SO₂ associated with use of COG to verify compliance with the emission limits in Condition 5.6.2(b). (See also recordkeeping requirements in Section 7.3 of the permit.)

* For the purpose of this condition, the Permittee shall address total PM₁₀, including both filterable and condensable particulate, rather than only filterable particulate.

- i. Records for the volumes of COG that are and are not processed by the COG Desulfurization System (scf), with data for undesulfurized COG on a 3-hour, daily and monthly basis and data for desulfurized COG on a daily and monthly basis.
- ii. Records for the sulfur contents of COG (gr/scf or gr/100 scf), with data for undesulfurized COG on a 3-hour, daily and monthly basis and data for desulfurized COG on a daily and monthly basis.
- iii. Records for the emission factors used by the Permittee to determine the PM₁₀ emissions from firing desulfurized and undesulfurized COG for the emission units at the facility that fire COG, with supporting documentation and analysis, and the "maximum" annual PM₁₀ emission factor calculated as a weighted average of the individual factors for different emission units, weighted for the greatest relative annual use of COG in different units, beginning with the unit that has the highest emission factor. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of units firing COG do not understate emissions, including review when PM₁₀ emission testing is conducted for units at the facility and review when PM₁₀ emission testing of similar emission units is conducted at other facility.
- iv. Records for the annual PM₁₀ and SO₂ emissions from the facility from combustion of COG that has not been desulfurized, determined from the summation of the volume of such COG multiplied by either its sulfur content or the established PM₁₀ emission factor for undesulfurized COG.
- v. Records for the annual PM₁₀ and SO₂ emissions from the facility from combustion of COG that has been desulfurized, determined from the summation of the volume of such COG multiplied by either its sulfur content or the established PM₁₀ emission factor for desulfurized COG.
- vi. Records for the total annual PM₁₀ and SO₂ emissions from the facility from combustion of COG, determined as the sum of the annual emission from combustion of COG that has and has not been desulfurized.

5.9.2 Records for HAP Emissions

The Permittee shall maintain source-wide records of HAP emissions on a calendar year basis and individually for the emission units or group of emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this

permit and emitting HAPs, pursuant to Section 39.5(7) (b) of the Act.

5.9.3 Records for Source-Wide Control Requirements and Work Practices

- a. The Permittee shall keep a copy of the fugitive particulate matter operating plan, and any amendments or revisions to the plan, as required by Condition 5.3.2. The Permittee shall also keep a record of activities completed according to the plan.
- b. The Permittee shall keep copy of the PM₁₀ contingency plan, and any amendments or revisions as described by Condition 5.3.3. The Permittee shall also keep a record of activities completed according to the plan.
- c. The Permittee shall keep a copy of the Episode Action Plan, and any amendments or revisions to the plan, as described in Condition 5.3.7. The Permittee shall also keep a record of activities completed according to the plan.
- d. The Permittee shall keep a record of property line observations required by Condition 5.8(b).

5.9.4 Records to address SO₂ emission limits in Condition 5.6.2(c) from FESOP #94120017:

- a. SO₂ emissions of each unit operating group in terms of the associated emission limits of this permit (i.e., lbs/3-hrs and lbs/day) accompanied by the data from which they were determined.
- b. SO₂ emissions of each unit operating group in tons/month.
- c. SO₂ emissions of each unit operating group in tons/year determined by using a rolling total of the previous 12 consecutive months of data.
- d. Records for repairs of any COG flow meter, as required by Condition 5.8(a) (v), including copies of any notifications to the Illinois EPA for extended outage of a flow meter.
- e. Records for any fuel oil usage instances with the results of the sampling and analysis of oil sulfur content.

5.9.5 The Permittee shall retain copies of all emission test reports and other test reports and other submittals to the Illinois EPA related to testing that are required by Conditions 5.7 and 5.10 and other conditions of this permit.

5.9.6 Retention, Availability and Submittal of Records

Pursuant to Section 39.5(7) (e) (ii) of the Act, the Permittee shall keep the records required by this permit as follows:

- a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein). The Permittee shall keep the last 3 years of data on-site and remaining 2 years data may be kept at an offsite location. The Permittee shall make all these readily accessible records available to the Illinois EPA or USEPA for inspection and/or copying upon request.
- b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.
- c. For certain records related to emission factors or emission rates required to be kept by this permit for various emission units at this source, as specifically identified in other conditions of this permit, the Permittee shall submit a copy of the records to the Illinois EPA as provided below:
 - i. Copies of initial records shall be submitted to the Illinois EPA within 15 days of the date that the Permittee prepares these records for subject unit(s), which shall in no case be later than January 20, 2012.
 - ii. Thereafter, copies of revised records shall be submitted to the Illinois EPA with the emission test reports for subject emission unit(s) if the records were revised as a consequence of emission testing or otherwise within 15 days of the date that the Permittee completes the preparation of revised records for subject unit(s).

5.9.7 Inspection, Sampling and Observations Documentation

Inspection, sampling and observation performed as required by this permit shall have documentation in addition to the records elsewhere in this permit that identifies at least the following:

- a. Name of person(s) or representative performing such activity;
- b. Date and time of such activity;
- c. Any applicable industry standards or other specific procedures for such activities; and
- d. Any quality assurance or quality control results.

5.10 Source-Wide Reporting Requirements

5.10.1 General Source-Wide Reporting Requirements

- a. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations from applicable requirements as follows:
 - i. Requirements in Condition 5.3.2(d) and (e)
 - ii. Requirements in Condition 5.5.
 - iii. Requirements in Condition 5.6.2.
- b. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- c. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by in Condition 8.6.1.
- d. All required deviation reports described in Condition 5.10.1 above shall contain the following information:
 - i. Date and time of the deviation;
 - ii. Emission units(s)/operation involved;
 - iii. The duration of the event;
 - iv. Probable cause of the deviation;
 - v. Any corrective actions or preventative measures taken;
 - vi. Reporting on malfunction and breakdown shall be performed in accordance with Condition 5.10.5; and
 - vii. Reporting on startup shall be performed in accordance with Condition 5.10.5.

5.10.2 Annual Emissions Report

- a. The annual emissions report required pursuant to Condition 9.7 shall contain emissions information, including HAP emissions, for the previous calendar year.
- b. The Permittee shall submit the following additional information from the prior calendar year with the Annual Emissions Report, due May 1st of each year, pursuant to Permit 95010001:

- i. Iron and steel production (tons/month and tons/yr, each);
 - ii. Natural gas and BFG usage (mmft³/month and mmft³/yr, each); and
 - iii. Fuel oil usage (thousand gallons/month and thousand gallons/yr, for each type of oil).
- c. The Permittee shall submit an annual report to the Illinois EPA with its Annual Emission Report describing the implementation of the Road Cleaning Program for the affected road segments, as defined in Condition 7.13.5(d), during the previous year. This report shall at a minimum provide: the number of times each road segment was cleaned; the number of times that scheduled cleaning was not performed, with explanation; a description of any significant changes in road cleaning equipment or cleaning practices, with explanation; and a description of other significant changes to the Program, including changes in contractors [Permit #06070088].

5.10.3 Reporting requirements from FESOP #94120017

- a. The Permittee shall submit quarterly reports (every 3 calendar months) to the Illinois EPA. This report is due 30 days after the end of the reporting period and may be submitted on computer disk. This report shall contain the following information for the days during the quarter:
 - i. A summary showing the emissions of SO₂ for each unit operating group for each day and the 12 month rolling average in tons/year.
 - ii. A statement identifying any apparent violations which occurred during the quarter covered by the report or, if there have been no apparent violations, a statement to that effect.
 - iii. A summary of any COG flow meter downtime.
 - iv. Identification of any days for which data for at least 75% of the operating hours of the unit operating group was not obtained by an approved method; justification for not obtaining the data; and description of corrective action taken.
- b. These reports shall be sent to IEPA Compliance Section in Springfield and IEPA Regional Office in Collinsville.
- c. Copies of the Final Report for the tests identified in Condition 5.8(a)(iv) shall be submitted to the Illinois EPA along with the quarterly reports required by this CAAPP permit within 30 days after the reported quarter.

5.10.4 Other Source-Wide Reporting Requirements

- a. i. A quarterly report shall be submitted to the Illinois EPA stating the following: the dates any necessary control measures were not implemented, a listing of those control measures, the reasons that the control measures were not implemented, and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not applied based on a belief that application of such control measures would have been unreasonable given prevailing atmospheric conditions, which shall constitute a defense to the requirements of this Section. This report shall be submitted to the Illinois EPA thirty (30) calendar days from the end of a quarter. Quarters end March 31, June 30, September 30, and December 31 [35 IAC 212.316(g) (5)].
- ii. The reporting requirements from the above are established for fugitive particulate matter control measures implemented for the certain operations identified in 35 IAC 212.316(b) through 212.316(f).
- iii. Control measures for this condition are those identified in the Fugitive Particulate Matter Operating Program.
- b. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made [35 IAC 212.324(g) (6)].

5.10.5-1 Reporting for Startups (State Authorization)

Pursuant to 39.5(7) (a) and (f) (ii) of the Act, when startup reports are required for an emission unit by unit specific conditions in Chapter 7 of this permit, such reports shall be submitted to the Illinois EPA, Air Compliance Section and Collinsville Regional Field Office on a semi-annual basis, and include the following information related to startups of such emission unit and associated air pollution control equipment.

- a. If startups occurred during the reporting period, the report shall include the following:
 - i. The number of startups.
 - ii. The number of departures from established procedures.

- iii. The number of exceedances of each applicable standard.
 - iv. A general explanation for the magnitude of the numbers reported and the significance or meaning of those numbers.
 - v. A general explanation for the departures.
 - vi. A general explanation for the exceedances.
 - vii. A general discussion of whether any improvements were made to startup practices
- b. If there were no startups for the reporting period, a statement that "No startups occurred during this reporting period."
 - c. Startups that resulted in excess emissions shall be addressed in the deviation reports as required by unit specific conditions in Chapter 7 of this permit.

5.10.5-2 Reporting for Malfunction or Breakdown (State Authorization)

- a. The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Section and Collinsville Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected emission unit or related air pollution control equipment when such continued operation would cause a violation of a standard or limitation in 35 IAC Subtitle B, Chapter I, subchapter c:
 - i. If an emission unit or control device operates during a malfunction/breakdown, the Permittee shall immediately report such event to the Illinois EPA within 2 working days after such event occurs. The immediate notification shall be provided to the Illinois EPA's Springfield Office (Compliance Section) by a telephone, facsimile, electronic mail or other alternative method of correspondence that constitutes the fastest available alternative. The immediate notification shall be followed by a letter to the Illinois EPA's Springfield Office (Compliance Section), postmarked within 7 working days after the end of the event. The 7 day follow-up letter shall contain the name, title, and signature of the owner or operator or other responsible official certifying its accuracy, explaining the circumstances and reasons for event, describing all excess emissions and/or parameter monitoring exceedances which may have occurred during the malfunction/breakdown event, actions taken to minimize emissions or parameter exceedance and all repairs made in conjunction with such malfunction/breakdown event.

- ii. If all the necessary information identified above is contained within the 2-day immediate notification and the notification was done by means of written correspondence, a 7-day follow-up letter is not required to be submitted.
- iii. A summary of these malfunction/breakdown reports required by this permit shall be submitted to the Illinois EPA's Springfield Office Compliance Section on a quarterly basis and contain the following:
 - A. Date and time of malfunction/breakdown;
 - B. Emission unit(s)/control involved;
 - C. The duration of the event;
 - D. Probable cause of malfunction/breakdown; and
 - E. Repairs and other corrective actions taken.

5.10.5-3 Federal Startup Shutdown and Malfunction/Breakdown Requirements

- a. For those emission units subject to a NESHAP standard and for which an SSM plan is required under 40 CFR 63.10(d)(5), the Permittee shall submit reports as required by the NESHAP including:
 - i. Periodic startup, shutdown or malfunction reports [40 CFR 63.10(d)(5)(i)]
 - A. 1. If actions taken by an owner or operator during a startup or shutdown (and the startup or shutdown causes the affected emission unit to exceed any applicable emission limitation in the relevant NESHAP emission standards specified in Section 7 of this permit), or malfunction of an affected emission unit (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan (see 40 CFR 63.6(e)(3)), the Permittee shall state such information in a startup, shutdown, and malfunction report.
 - 2. Actions taken to minimize emissions during such startups, shutdowns, and malfunctions shall be summarized in the report and may be done in checklist form; if actions taken are the same for each event, only one checklist is necessary.

3. Such a report shall also include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.
 - B. The startup, shutdown, and malfunction report shall consist of the following:

A letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy.
 - C. Reports shall only be required if a startup, shutdown or malfunction occurred during the reporting period.
 - D. The SSM Report shall be submitted to the Illinois EPA semiannually and shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate).
 - E. If the owner or operator is required to submit excess emissions and continuous monitoring system performance (or other periodic) reports required by this permit, the startup, shutdown, and malfunction reports required under 40 CFR 63.10(d) may be submitted simultaneously with the excess emissions and continuous monitoring system performance (or other) reports.
 - F. If startup, shutdown, and malfunction reports are submitted with excess emissions and continuous monitoring system performance (or other periodic) reports, and the owner or operator receives approval to reduce the frequency of reporting for the latter under 40 CFR 63.10(e), the frequency of reporting for the startup, shutdown, and malfunction reports also may be reduced if the Illinois EPA does not object to the intended change. The procedures to implement the allowance in the preceding sentence shall be the same as the procedures specified in 40 CFR 63.10(e) (3).
- ii. Immediate startup, shutdown or malfunction reports [40 CFR 63.10(d) (5) (ii)]
 - A. Notwithstanding the allowance to reduce the frequency of reporting for periodic startup,

shutdown, and malfunction reports under 40 CFR 63.10(d)(5)(i), any time an action taken by an owner or operator during a startup or shutdown that caused the source to exceed any applicable emission limitation in the relevant NESHAP emission standards specified in Section 7 of this CAAPP, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall submit an immediate report stating the actions taken for that event within 2 working days after commencing actions inconsistent with the plan and a follow-up report submitted within 7 working days after the end of the event.

- B. The immediate report shall consist of a telephone call (or facsimile (FAX) transmission) to the Illinois EPA.
- C. The follow-up report shall consist of the following:
 - 1. The name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy and explaining the circumstances of the event.
 - 2. The reasons for not following the startup, shutdown, and malfunction plan.
 - 3. Description all excess emissions and/or parameter monitoring exceedances which are believed to have occurred (or could have occurred in the case of malfunctions).
 - 4. And actions taken to minimize emissions in conformance with 40 CFR 63.6(e)(1)(i).

5.10.6 Separate copies of all reports required by this permit shall be sent to the IEPA Regional Office in Collinsville.

5.10.7 40 CFR 63, Subpart DDDDD (Notification of Compliance)

- a. Pursuant to 40 CFR 63.7545(b), the Permittee must submit an initial Notification according to 40 CFR 63.9(b)(2).
- b. Pursuant to 40 CFR 63.7545(e), the Permittee must submit a Notification of Compliance Status according to 40 CFR 63.9(h)(2)(ii). For the initial compliance demonstration for each affected unit, the Permittee must submit the Notification of Compliance Status, including all

performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for the affected unit according to 40 CFR 63.10(d)(2).

- c. For subject emission units, for which Permittee must conduct an initial compliance demonstration, the report shall include the information specified in 40 CFR 63.9(h)(2) and 63.7545(e).
- d. In addition to the information required by 40 CFR 63.9(h)(2), the notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official:
 - i. "This facility complies with the requirements in 40 CFR 63.7540(a)(10) to conduct an annual or biennial tune-up, as applicable, of each unit."
 - ii. "This facility has had an energy assessment performed according to 40 CFR 63.7530(e)."
 - iii. "No secondary materials that are solid waste were combusted in any affected unit."
- e. Pursuant to 40 CFR 63.7530(e), the Permittee must include with the Notification of Compliance Status a signed certification that the energy assessment was completed according to Table 3 of 40 CFR Part 63, Subpart DDDDD and is an accurate depiction of the affected facility.
- f. Pursuant to 40 CFR 63.7530(d), the Permittee must submit a signed statement in the Notification of Compliance Status report that indicates a tune-up was completed on each existing unit firing natural gas with a heat input capacity of less than 10 million Btu per hour.

5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios

No source-wide operational flexibility/anticipated operating scenarios have been established in this permit.

5.12 Source-Wide Compliance Procedures

Compliance Provisions for Condition 5.6.2(c) (adopted from FESOP 94120017):

- a. Compliance with the lbs/3-hours limits in Condition 5.6.2(c) shall be demonstrated by using emission rate calculations for eight discrete 3-hour periods per day, with the first period beginning at midnight.

- b. Compliance with the daily emission limits in Condition 5.6.2(c) shall be demonstrated by using emission rate calculations on a daily block basis (i.e., midnight to midnight).
- c. The compliance calculations shall be the primary compliance method for determining compliance with the emission limits in Condition 5.6.2(c), except for the blast furnace casthouse baghouse and iron spout baghouse, for which stack testing shall be the primary means of determining compliance.
- d. Total SO₂ emissions from an unit operating group for determination of compliance with the SO₂ limits in Condition 5.6.2(c) shall be the sum of the emissions resulting from the use of COG and fuel oil at the unit operating group, i.e.:

Lbs SO₂ per unit operating group = SO₂ emissions from fuel oil usage + SO₂ emissions from COG usage

Note: When FESOP Permit 94120017 was originally issued, the SO₂ emissions which would result from the use of blast furnace gas and natural gas in the unit operating groups were accounted for in the SO₂ limits of that permit. This was accomplished by lowering the permitted SO₂ from the SO₂ levels used for air quality modeling by an amount equal to the SO₂ which would have been emitted should the unit operating groups use blast furnace gas or natural gas continuously. The SO₂ 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.

- e. The SO₂ emissions attributable to fuel oil usage shall be calculated from the records required by the CAAPP permit for usage of fuel oil and the sulfur and heat content of oil (See Condition 5.9.4) and the following equation:

Lbs SO₂/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.

- f. The SO₂ emissions attributable to COG usage shall be calculated from the records required by the CAAPP permit for the amount of COG burned and the sulfur content of the COG (See Condition 5.9.1(e)) and the following equation:

Lbs SO₂/period = thousand standard cubic feet of COG burned per period x average H₂S content of the COG in grains per standard cubic foot for the period x 0.269.

- g. Stack test measurement shall be the primary method of determining the compliance of the Blast Furnace Casthouse and Iron Spout Baghouse with the lbs/day limits in Condition 5.6.2(c). The secondary means of determining compliance shall be the following:
 - i. The SO₂ attributable to the Blast Furnace Casthouse Baghouse shall be calculated using an emission factor of 0.173 lbs SO₂ per ton of hot metal cast.
 - ii. The SO₂ attributable to the Iron Spout Baghouse shall be calculated using an emission factor of 0.0063 lbs SO₂ per ton of hot metal cast.
- h. Compliance with the tons/yr limits in Condition 5.6.2(c) shall be determined using a rolling total of 12 consecutive calendar months of data.
- i. When fuel oil is used and data is not available for the fuel oil at the individual unit operating groups, the oil usage during such period shall be calculated from the data for total usage of oil apportioned among the individual operating groups using oil based on the relative heat inputs the unit operating group during that period.
- j. Usage of COG shall be determined from data collected by the COG flow meters.

Note: For this purpose, data from flow meters for both desulfurized and undesulfurized COG may be used in accordance with Condition 5.9.1(e) (i).

- k. The average H₂S content of COG for the lbs/3-hours compliance calculations shall be calculated using an arithmetic average of all available H₂S data during the 3-hour period that COG was burned. In the event that the H₂S monitoring system is unable to obtain a single reading for the 3-hour period, the H₂S content for that 3-hour period shall be obtained by one of the alternative methods specified in Condition 7.3.9(f) of this permit (i.e., manual sampling of H₂S content or determined by type of coal used during that period and previous recorded H₂S content when using this coal type).

For this purpose, data from H₂S monitoring systems for both desulfurized and undesulfurized COG, in accordance with Condition 5.9.1(e) (ii), shall be used as appropriate depending upon whether desulfurized or undesulfurized COG is being combustion.

- l. The daily average H₂S content of COG for use in the lbs/day compliance calculations shall be calculated using an arithmetic average of all available hourly average H₂S content data for

that day, and at least data from 75% of the daily operating hours.

Note: For this purpose, data from the H₂S monitoring systems for both desulfurized and undesulfurized COG, in accordance with Condition 5.9.1(e) (ii).

5.13 General Procedures for Certain Permit Limits on Emissions

Pursuant to Sections 39.5(7) (b) and (p) (v) of the Act, these procedures are applicable for the emission limits in Conditions 7.1.6(b) (i) through (iv), 7.4.6(b) through (f), 7.5.6(c) through (g) and 7.6.6(a) through (e), which address the rates of emissions or "emission factors" (commonly in pounds/ton) and the annual emissions or "maximum emissions" (in tons/year) of certain emission units, as the Permittee determines compliance with these limits with "emission factors," using the common meaning of this term. In particular, notwithstanding the fact that the above listed conditions set "emission factor limits" or limits on the rates of emissions, for purposes of this condition, an "emission factor" is a set value for the mass of a pollutant emitted by a particular emission unit relative to the amount of material that is processed or handled by the unit, or in the case of lead, a set value for the mass of lead emissions for each hour that the particular unit operates, which value is used in the determination of the emissions of the unit.

Note: For the emission units (i.e., operations and processes) that are subject to the above emission limits, Conditions 7.1.9(h), 7.4.9(h) (vii) and (i), 7.5.9(f) and (g), and 7.6.9(c) require the Permittee to keep records for the emissions factors that it is using to determine compliance with these emission limits, along with records for the emissions of these units. The specific emission factors being used by the Permittee for the various subject units, based on information provided by the Permittee as of the date of issuance of this revised permit, are found in Attachment 3 of this permit.

- a. The emission factors used by the Permittee to determine compliance with these emission limits shall not understate actual emissions.
- b. Compliance with these emission limits shall be determined as follows. For terms that are expressed in pounds per ton or, for lead, pounds per hour (i.e., the same terms as the relevant emission factor), compliance shall be determined by comparison against the relevant emission factor for the unit and mode of operation, as applicable. For each annual limit, compliance shall be determined by comparison against the annual emissions of the unit, calculated as the product of the actual annual operation of the unit and the relevant emission factor. If more than one emission factor is needed to address the actual annual emissions of a unit, to address different modes of operation, the annual emissions of the unit shall be calculated as the sum of the annual emissions, calculated as above, for each mode of operation of the unit for which there is a different emission factor. If there are additional emissions that are not accounted

for by the established emission factor(s), these additional emissions shall also be included in the calculation of annual emissions.

- c. The Permittee shall, at a minimum, review and, if necessary, update the relevant emission factors that it is using as follows, to assure that the emission factors that it uses to calculate emissions for purposes of determining compliance with these limits are appropriate, i.e., do not understate actual emissions.
 - i. For emission units that are subject to limits for which emission testing is required to be conducted by this permit, whenever such testing is conducted, relevant emission factors shall be reviewed based on the results of such testing and, if necessary, updated based on those results.
 - ii. For emission units that are subject to limits for which emission testing is not required to be conducted by this permit, the relevant emission factors shall be reviewed and, if necessary, updated on at least an annual basis, considering new information on emissions of such units that has become available, including revisions of USEPA's *Compilation of Air Pollutant Emission Factors*, AP-42, other information published by USEPA, information related to other emission units operated by U.S. Steel, information presented in specific papers and reports concerning the steel industry, and other salient information.
- d. The Permittee shall comply with the following reporting requirements related to the emission factors that it is using to determine compliance with these emission limits:
 - i. If the Permittee updates the emission factors that it is using, as a result of its review of the relevant emission factors, as provided for by Condition 5.13(c) (i) or (ii), copies of the revised records for such emission factor(s) shall be submitted to the Illinois EPA in accordance with Condition 5.9.6(c) (ii).
 - ii. At the same time that it submits its Annual Emission Report, as addressed by Condition 5.10.2, the Permittee shall also submit a report confirming its review of relevant emission factors in accordance with Condition 5.13(c) (i) and (ii) during the previous year, which report shall, for each applicable emission limit, include an identification of the testing conducted during the previous year, if any, or a description of all new information that was considered, if any, and the findings and conclusion of its review of such information and any updates that it made to the emission factors that it uses, with explanation.
- e. Upon written notification from the Illinois EPA or USEPA that it has determined one or more of the following, the Permittee shall conduct appropriate further review for the emission factor(s)

that are the subject of such notification and submit a written response to the Illinois EPA and, if applicable, USEPA within 45 days, which response may be accompanied by updates to those emission factor(s).

- i. The Permittee's records for the applicable emission factor(s), as addressed by Condition 5.9.6(c) (ii) or 5.13(d) (i) do not contain adequate documentation for the selected emission factor(s).
- ii. The Permittee's report pursuant to Condition 5.13(d) (ii) does not provide adequate explanation for the updates that were made to the emission factor(s).
- iii. The emission factor(s) used by the Permittee do not appear to appropriately address a new mode of operation of the subject unit.
- iv. There is new information, as described in or included with the notification, that appears pertinent that the Permittee has not considered in its review for the emission factor(s).

5.14 Source-wide State-Only Conditions

5.14.1 Permitted Emissions for Fees

Emission limitations are not set for the source for the purpose of permit fees. The Permittee shall pay the applicable fee pursuant to Section 39.5 of the Act.

6.0 CONDITIONS FOR EMISSIONS CONTROL PROGRAMS

This section is reserved for emissions control programs. As of the date of issuance of this permit, there are no such programs applicable to this source.

7.0 UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS

7.1 Material Handling and Processing Operations

7.1.1 Description

Coal handling systems:

The crusher is mainly used in the winter to break-up frozen chunks of coal to prepare the coal to be processed in the pulverizer.

There are two coal pulverizers. Only one pulverizer can be used at any one time. The remaining pulverizer is maintained as a backup unit. The pulverizers reduce the size of the coal to prepare it for the coking process. A baghouse controls the discharge outlets of the coal pulverizers.

Blast furnace raw material handling systems:

Raw materials such as coke, iron-bearing materials, and fluxes are charged to blast furnaces in the iron making process. The materials are charged in the top of the furnace from skip cars, which are filled in the stockhouse from conveyors or hoppers. Iron pellets and coke are screened prior to charging.

New Coke Conveyance System:

The new coke conveyor system transfers coke from Gateway Energy to US Steel to be used in the existing Blast Furnaces.

Steel making system:

Raw materials used in the BOFs and LMF are delivered to the facility by both truck and railcar. The trucks and railcars are either unloaded to the ground or directly into an underground feed hopper. Materials unloaded to the ground are placed in storage piles, or in super sacks, endloaders are used to transfer the materials from the storage piles or super sacks to the underground feed hopper. The underground feed hopper then feeds material onto BOF material transfer conveyor C-1. This material transfer is controlled by the Trackhopper Baghouse, this bag house empties back onto C-1 conveyor.

Materials added in the BOF and LMF are transferred from the underground feed hopper, by a conveyor system consisting of three conveyors (nos. C-1, C-2, and C-3) arranged in series. From conveyor C-3 the materials are offloaded into storage bins 1 thru 10, or a rotating hopper known as the lazy susan, or onto conveyor C-5. The storage bins unload materials to conveyor C-4, which transfers and off-loads the materials into the BOF feed hoppers for #1 vessel or #2 vessel. The lazy susan feeds directly into the BOFs Alloy transfer car. Conveyor C-5 transfers materials to the LMF material handling system. All operations carried out within this unit take place within

enclosed structures. The transfer from conveyors C-1 to C-2 and C-2 to C-3 are controlled by the Binfloor Baghouse, this bag house empties into Bin #2.

Materials are transferred from the BOF Binfloor to the LMF on conveyor C-5. This conveyor off-loads into storage bins which transfer to conveyor C-6. The emissions from the transfer from conveyor C-5 to C-6 are handled by Baghouse #1. Additional raw materials used in the LMF are transferred from the Tripper Conveyor to a set of storage bins. Emissions generated by loadout of the Tripper Conveyor are controlled by Baghouse #2.

Note: This narrative description is for informational purposes only and is not enforceable.

7.1.2 List of Emission Units and Air Pollution Control Equipment

Area	Emission Unit Description	Emission Control Equipment	Date Constructed
Coal Handling and Processing	Coal Crusher	None	Pre-1974
	Coal Pulverizers (2)	Baghouse	
	Conveyors	None	
Blast Furnace	Screens (3) <ul style="list-style-type: none"> • Two Coke • One Iron Pellet 	None	Pre-1974
	Conveyors and Feed Hoppers	None	
	Stock House Storage Bins	None	
	New Coke Conveyance System <ul style="list-style-type: none"> • Conveyors and Hoppers • Day Bins 	Baghouses	2009
Steelmaking	Dump Pit Conveyor	Trackhopper Baghouse	Pre-1974
	Conveyors and Storage Bins	Bin floor Baghouse	
	LMF Conveyors and Storage Bins	Baghouse #1	Prior to 1986

7.1.3 Applicable Provisions and Regulations

- a.
 - i. The "affected material handling operations" for the purpose of these unit-specific conditions, are the emission units described in Conditions 7.1.1 and 7.1.2.
 - ii. The "affected crushing operations" for the purpose of these unit-specific conditions, are the crusher and pulverizers described in Conditions 7.1.1 and 7.1.2.
 - iii. The "affected screening operations" for the purpose of these unit-specific conditions, are the iron

pellet and coke screens described in Conditions 7.1.1 and 7.1.2.

- iv. The "affected transfer operations" for the purpose of these unit-specific conditions, are the conveyors, storage bins, new coke conveyance system and feed hoppers described in Conditions 7.1.1 and 7.1.2.
- b. Pursuant to 35 IAC 212.316(b), the Permittee shall not cause or allow fugitive particulate matter emissions generated by the affected crushing and screening operations to exceed an opacity of 10 percent.
- c. Pursuant to 35 IAC 212.316(f), the Permittee shall not cause or allow fugitive particulate matter emissions generated by the affected transfer operations to exceed an opacity of 20 percent.
- d. Pursuant to 35 IAC 212.321(a), the Permittee shall not cause or allow the emission of particulate matter into the atmosphere in any one hour period from the new coke conveyor system or LMF conveyors and LMF storage bins for which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 2).
- e. Pursuant to 35 IAC 212.322(a), the Permittee shall not cause or allow the emission of particulate matter into the atmosphere in any one hour period from any affected material handling operation for which construction or modification commenced prior to April 14, 1972*, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (see also Attachment 2).
 - * The new coke conveyor system and LMF conveyors and LMF storage bins constructed after April 14, 1972, is not subject to 35 IAC 212.322.
- f. Pursuant to 35 IAC 212.458(b) (7) and (c), the Permittee shall not cause or allow emissions of PM10, other than that of fugitive particulate matter, into the atmosphere from any affected material handling operation to exceed 0.01 gr/scf during any one hour period, except for this mass emission limit shall not apply to those emission units with no visible emissions other than that of fugitive particulate matter; however, if a stack test is performed, this subsection is not a defense to a finding of a violation of the mass emission limits contained in this condition.

7.1.4 Non-Applicability of Regulations of Concern

The emission limitations of 35 IAC 212.324 are not applicable to the affected material handling operations, as provided by 35 IAC 212.324(a)(3), because the affected operations are subject to standards in 35 IAC Part 212, Subpart R, "Primary and Fabricated Metal Products and Machinery Manufacture".

7.1.5 Control Requirements and Work Practices

- a. The affected material handling operations shall be operated under the provisions of a fugitive particulate matter operating program consistent with the provisions of 35 IAC 212.309, 212.310 and 212.312 (see also Condition 5.3.2(a) [35 IAC 212.309]).
- b. Pursuant to 35 IAC 212.307, material collected by control equipment on the affected material handling operations shall be handled in accordance with Condition 5.3.2(e).
- c. For the air pollution control equipment on the affected operations, the Permittee shall comply with maintenance and repair requirements in 35 IAC 212.324(f), as follows, pursuant to 35 IAC 212.458(d):

The Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.458 shall be met at all times. Proper maintenance shall include the following minimum requirements:

- i. Visual inspections of air pollution control equipment;
 - ii. Maintenance of an adequate inventory of spare parts; and
 - iii. Expeditious repairs, unless the emission unit is shutdown.
- d. BACT/LAER requirements for the new coke conveyor system, from Permit 06070088:
 - i. PM and PM₁₀ emissions from the day bins shall be controlled by [T1]:
 - A. Enclosure of the day bin so as to prevent visible fugitive emissions, as defined by 40 CFR 60.671.
 - B. Aspiration of the day bins or the enclosure in which they are enclosed to a control device, which device shall be operated in accordance with good air pollution control practice to

minimize emissions. For this purpose, the control device shall be a baghouse or other filtration type device unless the Permittee demonstrates and the Illinois EPA concurs that another type of control device is preferable due to considerations of operational safety.

- ii. PM and PM₁₀ emissions from the new coke conveyance system shall be controlled by enclosure so as to prevent visible fugitive emissions, as defined by 40 CFR 60.671 [T1].
- iii. Emissions of PM and PM₁₀ from the control devices for the new coke conveyance system shall not exceed 0.005 gr/dscf [T1].

Condition 7.1.5(d) represents the application of Best Available Control Technology and Lowest Achievable Emission Rate.

7.1.6 Production and Emission Limitations

- a. Production and emission limits for the new coke conveyor system from Permit 06070088:
 - i. The new coke conveyance system shall not transfer more than 740,000 tons of coke per year [T1].
 - ii. The emissions from the new coke conveyance system shall not exceed 0.95 tons/year of PM and 0.45 tons/year of PM₁₀ [T1].
 - iii. Compliance with the annual limits of Condition 7.1.6(a) 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) [T1].
- b. Emission limits for blast furnace and steel making material handling operations from Permit 95010001:
 - i. Emissions from Material HS and Deslagging Station shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton of steel)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.00355	6.35
PM ₁₀	0.00355	6.35

- ii. BOF Additive System (Trackhopper Baghouse) emissions shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton of steel)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.00032	0.57
PM ₁₀	0.00032	0.57

- iii. Flux conveyor & transfer points (Bin Floor Baghouse) emissions shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton of steel)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.0016	2.86
PM ₁₀	0.0016	2.86

- iv. Iron Pellet Screen emissions shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton Iron)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.00279	6.01
PM ₁₀	0.00279	6.01

- v. Compliance with the annual limits in Condition 7.1.6(b) shall be determined based on a calendar year [T1].

7.1.7 Testing Requirements

The following emission tests and opacity observations shall be conducted pursuant to Section 39.5.(7) (d) and (p) of the Act.

- a. i. The Permittee shall measure the opacity from the affected crushing, screening and transfer operations unless prolonged weather conditions preclude scheduled observations. These observations shall be conducted by a qualified observer in accordance with Method 9, as further specified below, pursuant to Section 39.5(7) (d) of the Act.
 - A. This testing shall be conducted at least annually.
 - B. Upon written request by the Illinois EPA, such testing shall be conducted for specific affected operation(s) within 45 calendar days of the request or by the date agreed upon by the Illinois EPA, whichever is later. At least 30 days prior to the scheduled test date, the Permittee shall submit a detailed test plan to

the Illinois EPA, describing the manner of operation of the affected activity and all control measures that will be implemented during the testing. The results of the testing will be submitted within thirty calendar days of the completion of the tests.

- ii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages).
- b. The Permittee shall test for opacity and PM/PM10 emissions from the baghouse for the coal pulverizers and either the trackhopper baghouse, bin floor baghouse or baghouse #1 as will be specified by the Illinois EPA within 30 days of receipt of the test protocol. These two tests shall be completed within 30 months of the effective date of this permit condition. The Permittee shall use the following methods:

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2, 2A - H
Flue Gas Weight	Method 3, 3A - C
Moisture	Method 4
PM/PM ₁₀ as provided for by 35 IAC 212.108	Method 5, 201 or 201A

7.1.8 Monitoring Requirements

The Permittee shall perform the following inspections, pursuant to Section 39.5(7)(p)(ii) of the Act:

- a. Affected material handling operations other than the new coke conveyance system.

The Permittee shall perform quarterly inspections of the control measures, while the affected material handling operations are in use. For purposes of this condition, all affected material means each type of material handled. Types of material are materials such as: 1) coal; 2) coke; 3) limestone; 4) iron pellets; 5) alloy materials; 6) desulfurization reagents; and 7) slag materials. These inspections shall, at a minimum, include the following:

- i. Verification that control measures, including reliance on characteristics of materials, is being properly implemented. For conveyors, these inspections shall include, where applicable, verification that all covers, enclosures and dribble pans are present and in good working condition. For crushers, these inspections shall also include verifications for choke feeding.
- ii. For the baghouses on the affected material handling operations - a check of differential pressure and

inspection of the dust removal system, compressed air system, bag condition, fan condition and structural components.

iii. As part of the inspections, the Permittee shall perform observations for visible emissions by Method 22. These observations shall be conducted during the operations of each activity for a minimum of 18 minutes, or for activities that operate on a batch basis, for a minimum of six consecutive batches or 18 minutes. If visible emissions are observed, the Permittee shall take corrective action within 2 hours to return the status of the operations to no visible emissions or observations of opacity by Method 9 shall be conducted. For the purpose of this condition, returning the status of operations to no visible emissions does not include, for any activity, temporary idling or the lack of operations between batches.

b. Affected new coke conveyance system

- i. The Permittee shall conduct inspections of the new coke conveyor system on at least a monthly basis for the specific purpose of verifying that control measures required to control emissions from the new coke conveyor system are being properly implemented.
- ii. These inspections shall include observation for the presence of visible emissions, performed in accordance with USEPA Method 22, from the conveyors and day bins.

7.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items, pursuant to Sections 39.5(7) (a) and (e) of the Act:

a. The Permittee shall keep the following file(s) and log(s):

File(s) containing the following information for the affected material handling operations with supporting information:

- i. Information related to the dust collection equipment associated with the affected operations, including design control efficiency or performance specifications and maximum design particulate matter emissions, gr/dscf.
- ii. The maximum design capacity of each operation, (tons/hr).

b. For the air pollution control equipment on affected operations, the Permittee shall keep the following records

related to maintenance and repair, as required by 35 IAC 212.458(d):

- i. Records of inventory of spare parts and documentation of inspections, maintenance, and repairs of all air pollution control equipment shall be kept in accordance with 35 IAC 212.324(f) [35 IAC 212.324(g) (1)].
 - ii. Records documenting any period during which any process emission unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made [35 IAC 212.324(g) (2)].
 - iii. A written record of the inventory of all spare parts not readily available from local suppliers shall be kept and updated [35 IAC 212.324(g) (3)].
- c. The Permittee shall keep the written records required by 35 IAC 212.316(g) (1) as follows:
- i. For fugitive particulate matter emission units subject to 35 IAC 212.316, records related to the application of control measures for compliance with the opacity limitations of 35 IAC 212.316, including submittals to the Illinois EPA an annual report containing a summary of the information in these records.
 - ii. These records shall include at least the information specified by 35 IAC 212.316(g) (2), as follows:
 - A. The name and address of the source;
 - B. The name and address of the owner and/or operator of the source;
 - C. A map or diagram showing the location of all emission units controlled;
 - D. For application of physical or chemical control agents: the name of the agent, application rate and frequency, and total quantity of agent, and, if diluted, percent of concentration, used each day; and
 - E. A log recording incidents when control measures were not used and a statement of explanation.
 - iii. These records shall be handled as follows:

- A. Copies of all records required by 35 IAC 212.316 shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA and shall be transmitted to the Illinois EPA by a company-designated person with authority to release such records [35 IAC 212.316(g) (3)].
 - B. The records required under 35 IAC 212.316 shall be kept and maintained for at least five (5) years at the source and be available for inspection and copying by Illinois EPA representatives during working hours [35 IAC 212.316(g) (4)].
- d. The Permittee shall maintain records for:
- i. The amount of coke handled by the new coke conveyor system (tons/month and tons/year).
 - ii. The amount of iron pellets screened (tons/month and tons/year).
- e. The Permittee shall maintain the following records for the inspections required by Condition 7.1.8:
- i. For the inspections required by Condition 7.1.8(a) for each affected material handling operation:
 - A. Date and time the inspection was performed and name(s) of inspection personnel.
 - B. The observed condition of the control measures for each affected operation, including the presence of any visible emissions or accumulations of dust in the vicinity of the operation.
 - C. A description of any maintenance or repair associated with established control measures that are recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., whether recommended action has been taken, is yet to be performed or no longer appears to be required.
 - D. A summary of the observed implementation or status of actual control measures.
 - ii. For the inspections required by Condition 7.1.8(b) for the affected new coke conveyor system, pursuant to Permit 06070088:

- A. The Permittee shall maintain a file, which shall be kept current, that contains the maximum operating capacity of the new coke conveyance system (tons/day).
- B.
 - 1. The Permittee shall keep inspection and maintenance log(s) or other records for the control measures associated with the new coke conveyance system, including enclosures and fabric filters.
 - 2. These records shall include the following information for the inspections required by Condition 7.1.8(a) and (b):
 - I. Date and time the inspection was performed.
 - II. The observed condition of the control measures, including the presence of any visible emissions.
 - III. A description of any maintenance or repair associated with the control measures that are recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., whether recommended action has been taken, is yet to be performed or no longer appears to be required.
- f. In the operational logs or other records for the operation of the affected material handling operations for steelmaking, the Permittee shall include information confirming routine implementation of normal practices for unloading of materials into the receiving hopper and housekeeping practices for this hopper and information identifying departures from those practices, with description, explanation, and corrective actions taken.
- g. The Permittee shall maintain records of the following for each incident when any affected material handling operations and the new coke conveyor system operate without control measures:
 - i. The date of the incident and identification of the operations that were involved.
 - ii. A description of the incident, including the control measures that were not present or implemented; the control measures that were present, if any; other control measures or mitigation measures that were

- implemented, if any; and the magnitude of the PM emissions during the incident.
- iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.
 - iv. The length of time after the incident was identified that the operations continued to operate before control measures were in place or the operations were shutdown (to resume operation only after control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.
 - v. The estimated total duration of the incident, i.e., the total length of time that the operations ran without control measures and the estimated amount of coal handled during the incident.
 - vi. A discussion of the probable cause of the incident and any preventative measures taken.
 - vii. A discussion whether any applicable emission standards, as listed in Condition 7.1.3, may have been violated during the incident, with supporting explanation.
- h. The Permittee shall maintain the following records for the new coke conveyor system and each other operation subject to limits on PM/PM₁₀ emissions in Condition 7.1.6:
- i. A file containing the emission factors used by the Permittee to determine emissions of each operation, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the affected operations do not understate actual emissions. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
 - ii. Records for any periods of operation of such operations that are not otherwise addressed in the required records during which the established emission factor in Condition 7.1.9(f) (i) would understate actual emissions of such operation, with description of the period of operation and an estimate of the additional emissions during such period that would not be accounted for by the established factor, with supporting explanation and calculations.

- iii. Records for the annual PM/PM₁₀ emissions of each operation, based on operating data and appropriate emission factors for comparison to the limits in Conditions 7.1.6(b), with supporting documentation and calculations.
- i. The Permittee shall keep records for all opacity measurements conducted in accordance with Method 9 that it conducts or that it orders to be conducted. For each occasion on which such measurements are made, these records shall include the identity of the observer, a description of the measurements that were made, the operating condition of the operations, the observed opacity, and copies of the raw data sheets for the measurements.
- j. The Permittee shall keep copies of all tests performed on the affected material handling operations and new coke conveyor system.

7.1.10 Reporting Requirements

- a. i. The Permittee shall submit quarterly and annual reports to the Illinois EPA in accordance with 35 IAC 212.316(g) (1) and (5) [35 IAC 212.316(g)].
- ii. Pursuant to 35 IAC 212.324(g) (6), upon written request by the IEPA, a report shall be submitted to the IEPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.
- iii. Pursuant to Permit 06070088 for the new coke conveyor system, the Permittee shall notify the Illinois EPA within 30 days of deviations from applicable emission standards or operating requirements that continue* for more than 24 hours.

* For this purpose, time shall be measured from the start of a particular event. The absence of a deviation for a short period shall not be considered to end the event if the deviation resumes. In such circumstances, the event shall be considered to continue until corrective actions are taken so that the deviation ceases or the Permittee takes the affected unit out of service for repairs.

- b. i. Pursuant to Section 39.5(7) (f) (ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air

Compliance Section, within 30 days of deviations by the affected material handling operations and new coke conveyor system from applicable requirements as follows:

- A. Requirements in Condition 7.1.3(b) through (f).
- B. Requirements in Condition 7.1.5.
- C. Requirements in Condition 7.1.6.
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- iii. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations from permit requirements as part of the semiannual monitoring reports required by Condition 8.6.1.
- iv. All deviation reports described in Condition 7.1.11(b) above shall contain the following:
 - A. Date, time and duration of the deviation;
 - B. Description of the deviation;
 - C. Probable cause of the deviation; and
 - D. Any corrective actions or preventive measures taken.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected material handling operations and new coke conveyor system.

7.1.12 Compliance Procedures

Compliance with the emission standards in Condition 7.1.3 and the operational/emission limits in Condition 7.1.6 is addressed by the testing requirements of Condition 7.1.7, inspection requirements of Condition 7.1.8 and recordkeeping requirements of Condition 7.1.9.

7.1.13 State-Only Conditions

State-only conditions are not being established.

7.2 Coke Production

7.2.1 Description

Two coke oven batteries (45 ovens each), dual collecting main by-product coke oven batteries, referred to as batteries A and B, are utilized at this iron and steel mill. Each is capable of processing 454,000 tons/year of coal. Potential emissions from these batteries consist of particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic materials, and HAPs.

Topside:

Emission points include leaks from coke oven charging, lids, off takes, soaking and emergency flares. Coal is charged to the ovens through four charging port lids, on each oven, utilizing sequential charging with steam aspiration to the collecting mains. Each oven has two off takes to the collecting mains that duct raw coke oven gas from the coking process to the by-products plant (see Section 7.3 of this permit). Soaking occurs after the coking process is completed, when an oven is dampered off from the collecting mains and its off takes' standpipes are opened before beginning pushing. Each battery also has an emergency by-pass on the collecting main (one on each main, two per battery). In the event of an emergency which would lead to excess pressure in a main, e.g., loss of suction from the by-product plant, the by-pass opens. The raw coke oven gas is then combusted in the associated emergency flare.

Doors:

Emissions consist of leaks from coke oven doors. Each oven has two doors, with one on its push side and one on its coke side.

Pushing:

Once the coking cycle in an oven has been completed, the push and coke side doors are removed, respectively, by the pushing machine and coke-side door machines. A ram on the pushing machine pushes the coke out through a guide on the door machine. The coke falls through the guide, which is covered by a hood on the machine, and into the quench box. The emissions from oven pushing are controlled by the pushing system. This mobile control system consists of a venturi scrubber, mist eliminator and exhaust fan. The Permittee currently has two mobile scrubber cars for pushing (PCS cars #3 and #4). The quench box and car travel with this system to the coke quenching operation.

Coke Quenching:

In this operation, loads of hot coke from the ovens are quenched with water. There are two locations where quenching normally takes place. The primary is the West Quench Tower. This tower is equipped with a baffle system. The east quench station,

which is utilized as a backup for the West Tower, does not currently have a quench tower, however, the Permittee is currently engaged in a project to upgrade the quenching operations, adding a quench tower to the East Quench Station and replacing the conventional Quench Tower at the West Quench Station with a low emission quench tower (Construction Permit 08060026).

Underfiring:

Coke oven gas (COG) is combusted to generate the heat required to convert coal to coke. This COG would be treated by both by-products plant and, except during maintenance and outage, by the COG desulfurization system. Natural gas may also be added through the blending station in order to stabilize the heat content of the COG. Emissions from this unit occur at the main stacks of each battery and are mainly the by-products of combustion, including particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and volatile organic materials.

Note: This narrative description is for informational purposes only and is not enforceable.

7.2.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Coke Oven Batteries "A" and "B"	Coke Oven Battery "A"	Battery "A" was rebuilt between 1979 and 1980	Emergency Bypass Flares
	Coke Oven Battery "B"	Battery "B" was rebuilt between 1981 and 1982	Emergency Bypass Flares
	2 Larry Cars		None
	2 Pushing/Quench Cars		Mobile Venturi Scrubber (PCS Cars #3 & #4)
	East Quench Station (backup)		Tower and Baffles (planned)
	West Quench Station		Tower and Baffles
	Coke Oven Underfiring (coke oven combustion stacks)		None

7.2.3 Applicable Provisions

- a. The "affected coke oven operations" for the purpose of these unit-specific conditions, are the emission units and activities described in Conditions 7.2.1 and 7.2.2.
- b. The affected coke oven operations are subject to 35 IAC 212.443. Certain provisions of this regulation are discussed further in this subsection.
- c.
 - i. The following affected coke oven operations are subject to 40 CFR Part 63, Subpart L Coke Oven Batteries: charging, doors, lids, off takes, collecting mains and bleeder stacks. The Permittee is complying with the so-called LAER track under this NESHAP, as provided for by 40 CFR 63.304.
 - ii. For affected coke oven operations, the Permittee shall comply with applicable provisions of the NESHAP, 40 CFR 63 Subpart A.
- d.
 - i. The following affected coke oven operations are subject to 40 CFR Part 63, Subpart CCCCC: pushing, soaking, quenching and battery underfiring stacks.
 - ii. For affected operations at the coke oven battery, the Permittee shall comply with applicable provisions of the NESHAP, 40 CFR 63 Subpart A as specified in Table 1 in 40 CFR 63 Subpart CCCCC.

7.2.3-1 Applicable Standards: Coke Oven Charging

- a. 35 IAC 212.443(b) (1) (A)

No person shall cause or allow the emission of visible particulate matter from any coke oven charging operation, from the introduction of coal into the first charge port, as indicated by the first mechanical movement of the coal feeding mechanism on the larry car, to the replacement of the final charge port lid for more than a total of 125 seconds over 5 consecutive charges; provided however that 1 charge out of any 20 consecutive charges may be deemed an uncountable charge at the option of the operator.

Compliance with this limit shall be determined in accordance with the applicable procedures in 35 IAC 212.443(b) (1) (B) and Condition 7.2.12.

- b. 40 CFR 63.304(b) (2) (iv)

Emissions to the atmosphere from coke oven charging shall not exceed 12 seconds of visible emissions per charge, as determined by the procedures in 40 CFR 63.309(d) (2).

c. Battery B

The aggregate of visible emissions from the charging of coke ovens at Battery B shall not exceed a total 55 seconds during any 5 consecutive charges [T1].

Note: This limit is the determination of LAER for charging for Battery B made in Construction Permit C808048.

7.2.3-2 Applicable Standards: Leaks from Doors

a. 35 IAC 212.443(d)

i. No person shall cause or allow visible emissions from more than 10 percent of all coke oven doors at any time. Compliance shall be determined by a one pass observation of all coke oven doors on any one battery.

ii. No person shall cause or allow the operation of a coke oven unless there is on the plant premises at all times an adequate inventory of spare coke oven doors and seals and unless there is a readily available coke oven door repair facility.

b. Battery B

At no time shall there be any visible emissions from more than 5 percent of the door areas on Battery B [T1].

Note: This limit is the determination of LAER for door leaks for Battery B was established in Construction Permit C808048.

c. 40 CFR 63.304(b)(3)(ii)

3.3 percent leaking coke oven doors for each by-product coke oven battery not subject to the emission limitation 40 CFR 63.304(b)(3)(i), as determined by the procedures in 40 CFR 63.309(d)(1).

7.2.3-3 Applicable Standards: Leaks from Lids

a. 35 IAC 212.443(e)

No person shall cause or allow visible emissions from more than 5 percent of all coke oven lids at any time. Compliance shall be determined by a one pass observation of all coke oven lids.

b. Battery B

There shall be no visible emissions from more than 1 percent of the charging ports or lids [T1].

Note: This limit is the determination of LAER for lid leaks for Battery B made in Construction Permit C808048.

- c. 40 CFR 63.304(b) (2) (ii)

0.4 percent leaking topside port lids, as determined by the procedures in 40 CFR 63.309(d) (1).

7.2.3-4 Applicable Standards: Leaks from Off Takes

- a. 35 IAC 212.443(f)

No person shall cause or allow visible emissions from more than 10 percent of all coke oven off take piping at any time. Compliance shall be determined by a one pass observation of all coke oven off take piping.

- b. Battery B

There shall be no visible emissions from more than 4 percent of the off take piping on the coke ovens on Battery B [T1].

Note: This limit is the determination of LAER for off take leaks for Battery B made in Construction Permit C808048.

- c. 40 CFR 63.304(b) (2) (iii)

2.5 percent leaking off take system(s), as determined by the procedures in 40 CFR 63.309(d) (1).

7.2.3-5 Applicable Standards: Coke Oven Pushing

- a. 35 IAC 212.443(c) (1) (A)

Emissions of uncaptured particulate matter from pushing operations shall not exceed an average of 20 percent opacity for 4 consecutive pushes considering the highest average of six consecutive readings in each push.

Compliance with this limit shall be determined in accordance with the procedures in 35 IAC 212.443(c) (1) (B) and Condition 7.2.12.

- b. 35 IAC 212.443(c) (2)

i. The particulate emissions from control equipment used to control emissions during pushing operations shall not exceed 0.040 pounds per ton of coke pushed. Compliance shall be determined in accordance with the procedures set forth in 40 CFR Part 60, Appendix A, Methods 1-5, incorporated by reference in Section 212.113. Compliance shall be based on an arithmetic average of three runs (stack tests) and the

calculations shall be based on the duration of a push as defined in 35 IAC 212.443(c) (1) (A).

- ii. The opacity of emissions from control equipment used to control emissions during pushing operations shall not exceed 20%. For a push of less than six minutes duration, the actual number of 15-second readings taken shall be averaged. Compliance shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113, Section 2.5 of 40 CFR Part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113, for data reduction shall not be used for pushes of less than six minutes duration [35 IAC 212.443(c) (2) (B)].

- c. 40 CFR 63.7290(a) (4)

Particulate matter emissions to the atmosphere from the mobile scrubber car for pushing which captures emissions during travel shall not exceed 0.04 lb/ton of coke.

- d. Battery B

Pushing emissions from Battery B shall be captured and cleaned by a single-spot, coke guide evacuated, enclosed quench car/scrubber car system which meets the following limitations [T1]:

- i. The gas cleaning device shall be operated to meet 0.04 pounds of particulate matter per ton of coke pushed during the pushing operation.
- ii. Visible emissions from the gas cleaning device outlet and uncaptured fugitive emissions shall not exceed 20 percent opacity.

Note: These limits are the determination of LAER for pushing emissions from Battery B made in Construction Permit C808048.

7.2.3-6 Applicable Standards: Coke Quenching

- a. i. 40 CFR 63.7295(a) (1) (i)

For the quenching of hot coke, the Permittee must meet the following requirements of 40 CFR 63.7295(a) (1) (i):

The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L).

ii. 40 CFR 63.7295(a) (2)

The Permittee must use acceptable makeup water, as defined in 40 CFR 63.7352, as makeup water for quenching.

iii. 40 CFR 63.7295(b)

For each quench tower at a coke oven battery, the Permittee must meet each of the following requirements:

- A. Pursuant to 40 CFR 63.7295(b) (1), each tower is equipped with baffles such that no more than 5 percent of the cross sectional area of the tower may be uncovered or open to the sky;
- B. Pursuant to 40 CFR 63.7295(b) (2), baffles in each quench tower shall be washed once each day that the tower is used to quench coke, except as specified below:
 - 1. Baffles in a quench tower are not required to be washed if the highest measured ambient temperature remains less than 30 degrees Fahrenheit throughout that day (24-hour period). If the measured ambient temperature rises to 30 degrees Fahrenheit or more during the day, the Permittee shall resume daily washing.
 - 2. The Permittee shall continuously record the ambient temperature on days that the baffles were not washed.
- C. Pursuant to 40 CFR 63.7295(b) (3) and (4), the Permittee shall comply with inspection and repair provisions (see Condition 7.2.8-3).

b. 35 IAC 212.443(h) (1)

All coke oven quench towers shall be equipped with grit arrestors or equipment of comparable effectiveness. Baffles shall cover 95 percent or more of the cross sectional area of the exhaust vent or stack and must be maintained. Quench water shall not include untreated coke by-product plant effluent. All water placed on the coke being quenched shall be quench water.

c. 35 IAC 212.443(h) (2)

Total dissolved solids concentrations in the quench water shall not exceed a weekly average of 1200 mg/L.

7.2.3-7 Applicable Standards: Combustion (Battery) Stack

a. 35 IAC 212.443(g)

- i. No person shall cause or allow the emissions of particulate matter from a coke oven combustion stack to exceed 110 mg/dscm (0.05 gr/dscf); and
- ii. No person shall cause or allow the emission of particulate matter from a coke oven combustion stack to exceed 30% opacity. Compliance shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113. However, the opacity limit shall not apply to a coke oven combustion stack when a leak between any coke oven and the oven's vertical or crossover flues is being repaired, after pushing coke from the oven is completed, but before resumption of charging. The exemption from the opacity limit shall not exceed three (3) hours per oven repaired. The owner or operator shall keep written records identifying the oven repaired, and the date, time, and duration of all repair periods. These records shall be subject to the requirements of 35 IAC 212.324(g) (4) and (g) (5).

b. 40 CFR 63.7296

The Permittee must not discharge to the atmosphere any emissions from any battery stack at an existing by-product coke oven battery that exhibits opacity greater than the following applicable limits:

- i. Daily average of 15 percent opacity for a battery on a normal coking cycle.
- ii. Daily average of 20 percent opacity for a battery on batterywide extended coking.

c. Battery B

Pursuant to Construction Permit 82060043, non-sulfate particulate matter emissions from the battery stack serving Battery B shall not exceed 0.03 gr/dscf [T1].

7.2.3-8 Applicable Standards: Bypass/Bleeder Stack

- a.
 - i. Pursuant to 40 CFR 63.307(a) (1), the Permittee shall operate and properly maintain a bypass/bleeder stack flare system that is capable of controlling 120 percent of the normal gas flow generated by the affected battery.
 - ii. Coke oven emissions shall not be vented to the atmosphere through bypass/bleeder stacks, except

through the flare system or an alternative control device as described in 40 CFR 63.307(d) [40 CFR 63.307(a) (2)].

- iii. Each flare installed pursuant to 40 CFR 63.307 shall meet the applicable requirements specified by 40 CFR 63.307(b) with compliance determined as specified by 40 CFR 63.309(h).
- b. Pursuant to 40 CFR 63.307(c), the flare shall be operated with no visible emissions, as determined by the methods specified in 40 CFR 63.309(h) (1), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

7.2.4 Non-Applicability of Regulations of Concern

- a. The emission limitations of 35 IAC 212.324 are not applicable to any emission unit subject to a specific emissions standard or limitation contained in 35 IAC Part 212 Subpart R, Primary and Fabricated Metal Products and Machinery Manufacture, pursuant to 35 IAC 212.324 (a) (3).
- b. The affected coke oven operations are not fuel combustion emission units as defined in 35 IAC 211.2470 and therefore are not subject to the standards for fuel combustion emission units in 35 IAC Parts 212, 214, 216 and 217.
- c. This permit is issued based on the affected coke oven operations not being subject to the applicable requirements of 35 IAC 219.301 because there is 85 percent reduction of uncontrolled organic material that would otherwise be emitted into atmosphere, pursuant to 35 IAC 219.302.

7.2.5-1 Work Practices: Soaking Plan (40 CFR 63.7294)

Pursuant to 40 CFR 63.7294(a), the Permittee shall operate the coke ovens pursuant to a written work practice plan for soaking, which includes the measures specified by 40 CFR 63.7294(a), including, if soaking emissions are caused by leaks from the collecting main, the Permittee shall take corrective actions to eliminate soaking emissions in accordance with the actions identified in the soaking plan. If soaking emissions are not caused by leaks, the Permittee must determine whether the soaking emissions are due to incomplete coking. If incomplete coking is the cause of the soaking emissions, the Permittee must put the oven back on the collecting main until it is completely coked or the Permittee must ignite the standpipe emissions as specified by 40 CFR 63.7294(a) (4) and (5).

7.2.5-2 Work Practice Plan (40 CFR 63.306)

- a. Pursuant to 40 CFR 63.306(c), for affected units subject to the NESHAP, 40 CFR 63 Subpart L, the Permittee shall implement a written emission control Work Practice Plan for each affected coke oven battery designed to achieve

compliance with visible emission limitations for coke oven doors, topside port lids, off take systems, and charging operations.

- b. Pursuant to 40 CFR 63.306(a)(1) and (b), the Permittee shall organize the work practice plan to indicate clearly which parts of the plan pertain to each emission point subject to visible emission standards under 40 CFR Subpart L. Each of the following provisions, at a minimum, shall be addressed in the plan in sufficient detail and with sufficient specificity to allow USEPA and the Illinois EPA to evaluate the plan for completeness and enforceability:
 - i. An initial and refresher training program for all coke plant operating personnel with responsibilities that impact emissions, including contractors, in job requirements related to emission control and the requirements of 40 CFR Subpart L, including work practice requirements, that includes all the elements specified by 40 CFR 63.306(b)(1). Contractors with responsibilities that impact emission control may be trained by the Permittee or by qualified contractor personnel; however, the Permittee shall ensure that the contractor training program complies with the requirements of 40 CFR 63.306(b)(1).
 - ii. Procedures for controlling emissions from coke oven doors on by-product coke oven batteries, including the elements specified by 40 CFR 63.306(b)(2).
 - iii. Procedures for controlling emissions from charging operations on by-product coke oven batteries, including the elements specified by 40 CFR 63.306(b)(3).
 - iv. Procedures for controlling emissions from topside port lids on by-product coke oven batteries, including the elements specified by 40 CFR 63.306(b)(4).
 - v. Procedures for controlling emissions from off take system(s) on by-product coke oven batteries, including the elements specified by 40 CFR 63.306(b)(5).
 - vi. Procedures for each emission point subject to visible emission limitations under 40 CFR 63 Subpart L for maintaining a daily record of the performance of plan requirements pertaining to the daily operations of the affected coke oven operations as defined in Condition 7.2.3(c) and its emission control equipment, including the elements specified by 40 CFR 63.306(b)(7).

- vii. Any additional work practices or requirements specified by the USEPA or Illinois EPA pursuant to 40 CFR 63.306(d).
- c. Pursuant to 40 CFR 63.306(c) the Permittee shall implement the provisions of the work practice plan pertaining to a particular emission point:
 - i. Following the second independent exceedance of the visible emission limitation for the emission point in any consecutive 6-month period, by no later than 3 days after receipt of written notification of the second such exceedance from the certified observer. For this purpose, the second exceedance is "independent" if the criteria of 40 CFR 63.306(c) (1) (i) (A), (B) or (C) are met.
 - ii. And continue to implement such plan provisions until the visible emission limitation for the emission point is achieved for 90 consecutive days. After the visible emission limitation for a particular emission point is achieved for 90 consecutive days, any exceedances prior to the beginning of the 90 days are not included in making the above determination of exceedances.
- d. Revisions to the work practice plan shall be done in accordance with 40 CFR 63.306(d) and (a) (2).
- e. The Work Practice Plan, as submitted by the Permittee on November 12, 1993, (which contains various training and standard operating procedures for the A & B coke oven batteries), is incorporated herein by reference. The document constitutes the formal work practice plan required by 40 CFR 306(a) for each coke oven battery, addressing work practices for achieving compliance with the visible emissions limitations of Subpart L.

Any future revision to the aforementioned plan made by the Permittee during the permit term is automatically incorporated by reference provided that said revision is not expressly disapproved, in writing, by the Illinois EPA within 30 days of receipt of said revision. In the event that the Illinois EPA notifies the Permittee of a deficiency with any revision to the plan, the Permittee shall be required to revise and resubmit the plan within 30 days of receipt of notification to address the deficiency [Section 39.5(7) (a) of the Act].

7.2.5-3 NESHAP Provisions for Startup, Shutdown and Malfunction

- a. Pursuant to 40 CFR 63.7310(a) and (c), for affected coke oven operations subject to 40 CFR 63 Subpart CCCCC:

- i. The Permittee shall comply with the emission limitations, work practice standards, and operating and maintenance requirements of 40 CFR 63 Subpart CCCCC, at all times except periods of startup, shutdown, and malfunction as defined at 40 CFR 63.2.
 - ii. The Permittee shall develop and implement a written startup, shutdown and malfunction plan according to the provisions in 40 CFR 63.6(e) (3).
 - b. Pursuant to 40 CFR 63.310, for affected coke oven operations subject to 40 CFR 63 Subpart L:
 - i. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall operate and maintain the affected coke oven operations, and associated pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions to the levels required by standards under 40 CFR Subpart L. Failure to adhere to the requirement of 40 CFR 63.310 shall not constitute a separate violation if a violation of an applicable performance or work practice standard has also occurred [40 CFR 63.310(a)].
 - ii. The Permittee shall develop and implement according to 40 CFR 63.310(c), a written startup, shutdown, and malfunction plan that describes procedures for operating the affected units, including associated air pollution control equipment, during a period of a startup, shutdown, or malfunction in a manner consistent with good air pollution control practices for minimizing emissions, and procedures for correcting malfunctioning process and air pollution control equipment as quickly as practicable [40 CFR 63.310(b)].
 - iii. Pursuant to 40 CFR 63.310(c), during a period of startup, shutdown, or malfunction the Permittee shall operate the battery (including associated air pollution control equipment) in accordance with the procedure specified in the startup, shutdown, and malfunction plan; and malfunctions shall be corrected as soon as practicable after their occurrence, in accordance with the plan.
 - iv. To satisfy the requirement for a startup, shutdown, and malfunction plan, the Permittee may use the standard operating procedures manual for the battery, provided the manual meets all the requirements of 40 CFR 63.310 and is made available for inspection at reasonable times when requested by the Administrator (USEPA) or Illinois EPA, as provided by 40 CFR 63.310(g).

- v. The USEPA or Illinois EPA may require reasonable revisions to a startup, shutdown, and malfunction plan as provided by 40 CFR 63.310(h).
- vi. Pursuant to 40 CR 63.310(i), if the Permittee demonstrates to the satisfaction of the Administrator (USEPA and Illinois EPA) that a startup, shutdown, or malfunction has occurred, then an observation occurring during such startup, shutdown, or malfunction shall not:
 - A. Constitute a violation of relevant requirements of 40 CFR 63 Subpart L;
 - B. Be used in any compliance determination under 40 CFR 63.309; or
 - C. Be considered for purposes of 40 CFR 63.306 (the work practice plan), until the Administrator (USEPA and Illinois EPA) has resolved the claim that a startup, shutdown, or malfunction has occurred, as further provided by 40 CFR 63.310(i)(3).
- vii. The Permittee shall maintain all records related to startup, shutdown and malfunction, including internal reports which form the basis of each malfunction notification under 40 CFR 63.310(d) as required by 40 CFR 63.310(f).

7.2.5-4 Startup Authorization Pursuant to State Rule

Pursuant to 35 IAC 201.149 and Part 201, Subpart I, subject to the following terms and conditions, for the affected coke ovens, the Permittee is authorized to violate the applicable standards in 35 IAC 212.443 during startup. For this purpose a start-up is the resumption of normal production following the period when the battery has been idled.

Note: This authorization is provided because the Permittee has applied for such authorization in its CAAPP application, generally describing the efforts that will be used "...to minimize startup emissions, duration of individual starts, and frequency of startups".

- a. This authorization does not relieve the Permittee from the continuing obligation to demonstrate that all reasonable efforts are made to minimize startup emissions, duration of individual startups and frequency of startups.
- b. The Permittee shall conduct startup of the affected coke oven operations in accordance with the manufacturer's written instructions or other written procedures prepared by the Permittee and maintained at the source (see

Condition 7.2.9(g)(i)), that are specifically developed to minimize emissions from the startup.

- c. The Permittee shall fulfill applicable recordkeeping of Condition 7.2.9(g).
- d. The Permittee shall fulfill applicable reporting of Condition 5.10.5-1.
- e. As provided by 35 IAC 201.265, an authorization in a permit for excess emissions during startup does not shield a Permittee from enforcement for any violation of applicable emission standard(s) that occurs during startup and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.2.5-5 Malfunction and Breakdown Authorization Pursuant to State Rule

- a. Pursuant to 35 IAC 201.149 and Part 201, Subpart I, subject to the following terms and conditions, the Permittee is authorized to continue operation of the affected coke oven batteries in excess of the applicable state standards in 35 IAC 212.443 in the event of a malfunction or breakdown.

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally explaining why such continued operation would be required to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns.

- i. This authorization only allows such continued operation as necessary to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.
- ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall repair the responsible affected coke oven operations or other responsible equipment and/or re-establish the applicable control practices (e.g., the rail system for quench car).
- iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.2.9(h) and Condition 5.10.5-2, respectively. For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume.

- iv. Following notification to the Illinois EPA (see Condition 5.10.5-2(a)(i)) of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident.
 - v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.
- b. During the period when only one quench station is available (i.e., the other quench station is not operable because of construction work on a new quench tower) or there is a malfunction or breakdown preventing hot coke from being moved to a tower-equipped quench station (e.g., rail line malfunction), the Permittee is authorized to continue operation of the coke ovens with emergency quenching, i.e., quenching without a quench tower or at a quench station that is experiencing a malfunction or breakdown (see Condition 7.2.5-5).

7.2.6 Production and Emission Limitations

- a. i. The amount of coal charged to the affected Battery "B" shall not exceed 454,000 tons per year [Construction Permit C808048].
- b. i. Emissions of PM from the mobile scrubber cars for pushing shall not exceed 4.2 lb/hr and 18.3 t/yr [T1].

Compliance with annual limits shall be determined from a running total of 12 months of data [Construction Permit 88070071].
- ii. Spare cars, parts inventories and maintenance practices shall be maintained and implemented by the Permittee for the pushing operations (quench cars and mobile scrubbers) consistent with good air pollution control practices [Permit 88070071].
- c. i. Supplementary natural gas usage for the coke ovens shall not exceed 20 million scf/month and 123 million scf/yr [T1].
- ii. Emissions attributable to the combustion of natural gas for the underfiring of the batteries shall not exceed the following limits. Compliance with the

annual limits shall be determined from a running total of 12 months of data [T1]:

Pollutant	Emissions	
	(Tons/Month)	(Tons/Year)
NO _x	2.80	17.22
CO	0.84	5.17
PM	0.12	0.73
PM ₁₀	0.11	0.62
VOM	0.06	0.34
SO ₂	0.01	0.04

- iii. The above limitations were established in the Permit 04110018.
- d. i. Once shakedown of the new quench tower on the West Quench Station has been completed, the Permittee shall use the West Quench Station preferentially. For this purpose, on an annual basis*, excluding periods when the West Quench Station cannot be used due to malfunction or breakdown, the East Quench Station shall not quench more than: 5 percent of the total number of quenches or 15,000 tons of coke, whichever is greater, not to exceed 30,000 tons of coke per year.
 - * This limit shall apply for the 12 month period from July 1 of one year through June 30 of the following year. This limit shall also apply for the initial 12 months following shakedown of the West Quench Station with new quench tower.
- ii. Shakedown of each affected quench tower shall be completed within 180 days of the initial quench with each tower.
- iii. The above limitations were established in the Permit 08060026.

7.2.7-1 Emission Testing for Coke Oven Pushing

- a. Testing requirements established by 40 CFR Part 63 Subpart CCCCC:
 - i. Pursuant to 40 CFR 63.7321, for each control device subject to an emission limit for particulate matter in 40 CFR 63.7290(a), the Permittee must conduct performance tests no less frequently than twice (at mid-term and renewal) during each term of the CAAPP permit (i.e., every 30 months).

- ii. The Permittee must conduct each performance test according to the following requirements in 40 CFR 63.7322.
 - A. To determine compliance with a process-weighted mass rate of particulate matter (lb/ton of coke) from a control device applied to pushing emissions where a cokeside shed is not used, follow these test methods and procedures to determine the concentration of particulate matter according to the following test methods in Appendix A to 40 CFR Part 60:
 - 1. Method 1 to select sampling port locations and the number of traverse points. Sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere.
 - 2. Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.
 - 3. Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.
 - 4. Method 4 to determine the moisture content of the stack gas.
 - 5. Method 5 or 5D, as applicable, to determine the concentration of front half particulate matter in the stack gas.
 - B. During each particulate matter test run, sample only during periods of actual pushing when the capture system fan and control device are engaged. Collect a minimum sample volume of 30 dry standard cubic feet of gas during each test run. Three valid test runs are needed to comprise a performance test. Each run must start at the beginning of a push and finish at the end of a push (*i.e.*, sample for an integral number of pushes).
 - C. Determine the total combined weight in tons of coke pushed during the duration of each test run according to the procedures in the Permittee's source test plan for calculating coke yield from the quantity of coal charged to an individual oven.

- D. Compute the process-weighted mass emissions (E_p) for each test run using the following equation:

Where:

E_p = Process weighted mass emissions of particulate matter, lb/ton;

C = Concentration of particulate matter, gr/dscf;

Q = Volumetric flow rate of stack gas, dscf/hr;

T = Total time during a run that a sample is withdrawn from the stack during pushing, hr;

P = Total amount of coke pushed during the test run, tons; and

K = Conversion factor, 7,000 gr/lb.

- b. Testing requirements to address 35 IAC 212.443(c)(2)

If the PM emissions measured during the emissions testing conducted pursuant to Condition 7.2.7-1(a) are more than 0.036 lb/ton, the Permittee shall conduct a follow-up test between 12 and 18 months after such test, unless subsequent emission testing conducted in the 12 month period following such test shows PM emissions are no more than 0.030 lb/ton.

7.2.7-2 Testing Requirements for Coke Quenching

- a. Requirements of 40 CFR Part 63 Subpart CCCCC

i. Pursuant to 40 CFR 63.7333(f), the Permittee shall sample and analyze quench water for total dissolved solids on at least a weekly basis in accordance with the procedures specified by 40 CFR 63.7325(a).

ii. If the Permittee elects to comply with the TDS limit for quench water in 40 CFR 63.7295(a)(1)(i), the Permittee must conduct each performance test that applies to the affected quenching operations according to the following conditions in 40 CFR 63.7325(a)(1) and (2):

- A. Take the quench water sample from a location that provides a representative sample of the quench water as applied to the coke (e.g., from the header that feeds water to the quench tower reservoirs). Conduct sampling under normal and representative operating conditions.
 - B. Determine the TDS concentration of the sample using Method 160.1 in 40 CFR part 136.3 (see residue-filterable"), except that you must dry the total filterable residue at 103 to 105°C instead of 180°C.
- b. Requirements of 35 IAC 212.443(h)
- i. Pursuant to 35 IAC 212.443(h) (3), the quench water shall be sampled for total dissolved solids concentrations in accordance with the methods specified in Standard Methods for the Examination of Water and Wastewater, Section 209C, "Total Filterable Residue Dried at 103-105°C" 15th Edition, 1980, incorporated by reference in 35 IAC 212.113. Analyses shall be performed on grab samples of the quench water as applied to the coke in accordance with the sampling schedule in Condition 7.2.12(c).
 - ii. If the quench station is not used during any given calendar week, the grab samples for that quench station need not be analyzed.
- c. Testing requirements for West Quench Station from Permit 08060026

Within two years after initial startup of the West Quench Station with low emission quench tower, the Permittee shall have emission test(s) conducted for this quench station at its expense as follows:

- i. The emissions test(s) shall be designed to measure the PM, PM₁₀, and PM_{2.5} emission rates (lb/ton coke) from the quench tower under conditions that are representative of the maximum emissions as the station is normally operated.
 - ii. The Permittee shall install any facilities necessary to accommodate this emissions testing.
 - iii. The following methods and procedures shall be used for testing emissions of PM unless other method(s) are approved by the Illinois EPA as part of its review of the test plan.
- A. The following USEPA Test Methods:

Refer to 40 CFR 60, Appendix A for USEPA test methods and www.epa.gov/ttn/emc/prelim.html for other test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
PM	USEPA Method 5

- B. Testing for emissions of filterable and condensable PM₁₀ shall be conducted using an appropriate Test Method developed by USEPA, e.g., Method 201/201A or Other Test Method (OTM) 27 and Method 202 or OTM 28, or a Reference Method proposed by USEPA, subject to review by the Illinois EPA as part of the review of the test plan.
- C. Testing for emissions of filterable PM_{2.5} shall be conducted using an applicable Reference Method, as adopted by USEPA in 40 CFR Part 51, Appendix M, or in 40 CFR Part 60, Appendix A. If USEPA has not adopted a Reference Method for testing of filterable PM_{2.5} when testing must be performed, testing for filterable PM_{2.5} shall be conducted using an appropriate Test Method developed by USEPA, e.g., OTM 27, or a Reference Method proposed by USEPA, subject to review by the Illinois EPA as part of the review of the test plan.
- iv. For this emission testing, test notification and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.

7.2.7-3 Compliance Demonstrations and Emission Testing for Coke Oven Underfiring (combustion stacks)

- a. For compliance demonstration with opacity limits, the Permittee must conduct each performance test that applies to the affected operations according to the following requirements in 40 CFR 63.7324(b):

To determine compliance with the daily average opacity limit for stacks of 15 percent for a by-product coke oven battery on a normal coking cycle or 20 percent for a by-product coke oven battery on batterywide extended coking, follow the test methods and procedures outlined below:

- i. Using the continuous opacity monitoring system (COMS) required in 40 CFR 63.7330(e), measure and record the

opacity of emissions from each battery stack for a 24-hour period.

- ii. Reduce the monitoring data to hourly averages as specified in 40 CFR 63.8(g)(2).
 - iii. Compute and record the 24-hour (daily) average of the COMS data.
- b. Pursuant to Sections 39.5(7)(d) and (p) of the Act, the Permittee shall conduct emission tests for each coke oven combustion stack under conditions that are representative of maximum emissions as follows:
- i. Testing for PM emissions (filterable PM from Battery A and filterable and filterable non-sulfate PM from Battery B) shall be conducted as follows:
 - A. Initial testing shall be conducted within 24 months of the effective date of this permit condition.
 - B. Thereafter, emission testing shall be repeated in 30 months, unless the PM emission rate measured from both stacks during the previous testing is less than 0.040 gr/dscf for filterable PM and less than 0.024 gr/dscf for filterable non-sulfate PM from the combustion stack on Battery B, in which case testing shall be repeated in 60 months.
 - C. Testing shall also be conducted for combustion stack(s) upon written request from the Illinois EPA as specified in the request. This testing shall be completed within 90 days of the date of the request or such later date agreed to by the Illinois EPA.
 - ii. In conjunction with the initial testing for PM emissions required by Condition 7.2.7-3(b)(i)(A), the Permittee shall also test for CO and NO_x from one of the coke oven combustion stacks, as selected by the Illinois EPA.
 - iii. The following USEPA test methods shall be used for testing of emissions, unless another USEPA test method is approved by the Illinois EPA. Refer to 40 CFR 51, Appendix M, and 40 CFR 60, Appendix A, for test methods.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4

PM (filterable)	Method 5
PM (non-sulfate filterable)	Method 5F
CO	Method 10
NO _x	Method 7 or 7E

- iv. For this emission testing, test notification and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.
 - v. With the report for emission testing, the Permittee shall also provide a summary of the opacity data monitored during the period of testing (6 minute averages and daily average), the sulfur content of COG being combusted during the period of testing, as measured by the monitoring system(s) for COG, the PM content of COG combusted during the period of testing, and data for the firing rate of the battery during testing (mmBtu or SCF of COG and natural gas per hour) for each test run, with supporting calculations.
- c. Testing conditions above are established pursuant to Sections 39.5(7) (d) and (p) of the Act.

7.2.8-1 Monitoring Requirements for Charging, Doors, Lids and Off Takes

- a. i. Pursuant to 40 CFR 63.309(a), daily performance tests shall be conducted by a certified observer each day, 7 days per week for the affected battery, as specified by 40 CFR 63.309, the results of which shall be used in accordance with procedures specified in 40 CFR 63 Subpart L to determine compliance with each of the applicable visible emission limitations for coke oven doors, topside port lids, off take systems, and charging operations in 40 CFR 63 Subpart L.
- ii. The Permittee shall enter into a contract providing for the inspections and performance tests required under the NESHAP, 40 CFR 63 Subpart L, to be performed by a Method 303 certified observer. The inspections and performance tests will be conducted at the expense of the Permittee, during the period that the USEPA is the implementing agency [40 CFR 63.309(a) (5) (ii)].
 - A. The certified observer shall conduct daily performance tests according to the requirements specified in 40 CFR 63.309(c).
 - B. Pursuant to 40 CFR 63.309(c) (3), upon request of the certified observer the Permittee shall demonstrate pursuant to Reference Method 303 the accuracy of the pressure measurement device

for the collecting mains and shall not adjust the pressure to a level below the range of normal operation during or prior to the inspection.

C. In no case shall the owner or operator knowingly block a coke oven door, or any portion of a door for the purpose of concealing emissions or preventing observations by the certified observer, as prohibited by 40 CFR 63.309(c) (6).

D. 1. Pursuant to 40 CFR 63.309(e), the certified observer shall make available to the implementing agency, as well as to the Permittee, a copy of the daily inspection results by the end of the day and shall make available the calculated rolling average for each emission point to the Permittee as soon as practicable following each performance test. The information provided by the certified observer is not a compliance determination. For the purposes of notifying the owner or operator of the results obtained by a certified observer, the person does not have to be certified.

2. Pursuant to 40 CFR 63.306(d) (3), if the certified observer calculates that a second exceedance (or if applicable, a second independent exceedance) has occurred, the certified observer shall notify the Permittee. No later than 10 days after receipt of such notification, the Permittee shall notify the administrator (USEPA) and Illinois EPA of any finding of whether work practices are related to the cause or solution of the problem.

Note: Pursuant to 40 CFR 63.306(d) (6), the reviewing authority (USEPA) may disapprove the submitted finding if it determines that a revised work practice plan is needed to prevent exceedances of the applicable visible emission limitations.

iii. Pursuant to 40 CFR 63.309(f), compliance with the NESHAP, 40 CFR 63 Subpart L shall not be determined more often than the schedule provided for performance tests under 40 CFR 63.309. If additional valid emissions observations are obtained (or in the case

of charging, valid sets of emission observations), the arithmetic average of all valid values (or valid sets of values) obtained during the day shall be used in any computations performed to determine compliance under 40 CFR 63.309(d) or determinations under 40 CFR 63.306.

- iv. Pursuant to 40 CFR 63.309(i), no observations obtained during any program for training or for certifying observers under 40 CFR 63 Subpart L shall be used to determine compliance with the requirements of 40 CFR 63 Subpart L or any other federally enforceable standard.
- b. Pursuant to 40 CFR 63.308, for the collecting mains, the Permittee shall conduct daily inspections for leaks and promptly repair any leaks as specified by 40 CFR 63.308(a) through (d).
- c. Pursuant to Section 39.5(7)(d) of the Act, the Permittee shall have daily inspections conducted for charging and doors, lids and off takes to confirm compliance by Battery A with 35 IAC 212.443(b), (d), (e) and (f) and by Battery B with LAER limit (See Conditions 7.2.3-1(c), 7.2.3-2(b), 7.2.3-3(b), and 7.2.3-4(b)). These inspections shall be conducted in accordance with applicable procedures in Condition 7.2.12(a). These inspections may be coordinated with the daily inspections required by the NESHAP, provided that appropriate observations are made and collected to address these applicable limits under state rule and permit.

7.2.8-2 Monitoring Requirements for Pushing

- a. Pursuant to 40 CFR 63.7330(b), For each venturi scrubber applied to pushing emissions, the Permittee must at all times monitor the pressure drop and water flow rate using a CPMS according to the following requirements:

Pursuant to 40 CFR 63.7331(e), operate, and maintain CPMS to measure and record the pressure drop across the scrubber and scrubber water flow rate during each push according to the requirements in the site specific monitoring plan as well as the following:

- i. Each CPMS must complete a measurement at least once per push [40 CFR 63.7331(e)(1)];
- ii. Each CPMS must produce valid data for all pushes [40 CFR 63.7331(e)(2)]; and
- iii. Each CPMS must determine and record the daily (24-hour) average of all recorded readings [40 CFR 63.7331(e)(3)].

- b. Pursuant to 40 CFR 63.7330(d), For each capture system applied to pushing emissions, the Permittee must at all times operate and maintain a device to measure the fan RPM.
- c. Pursuant to 40 CFR 63.7331(b), the Permittee must maintain and make available for inspection upon request by the Illinois EPA and USEPA a site-specific monitoring plan for each Continuous Parameter Monitoring System (CPMS) that addresses the following requirements:
 - i. Installation of the CPMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device) [40 CFR 63.7331(b) (1)];
 - ii. Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system [40 CFR 63.7331(b) (2)];
 - iii. Performance evaluation procedures and acceptance criteria (e.g., calibrations) [40 CFR 63.7331(b) (3)];
 - iv. Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c) (1), (3), (4) (ii), (7), and (8) [40 CFR 63.7331(b) (4)];
 - v. Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d) [40 CFR 63.7331(b) (5)]; and
 - vi. Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 63.10(c), (e) (1), and (e) (2) (i) [40 CFR 63.7331(b) (6)].
- d. Pursuant to 40 CFR 63.7331(d), the Permittee must operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.
- e. Pursuant to 40 CFR 63.7332(a), except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) at all times the affected source is operating.

- f. Pursuant to 40 CFR 63.7332(b), the Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or in fulfilling a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitor to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- g. Pursuant to 40 CFR 63.7333(d)(3)(ii), check the fan RPM at least every 8 hours to verify the daily average fan RPM is at or above the minimum level in Condition 7.2.8-2(h) and recording the results of each check.
- h. i. Pursuant to 40 CFR 63.7290(b)(1), for each venturi scrubber applied to pushing emissions, the Permittee must maintain the daily average pressure drop and scrubber water flow rate at or above (no lower than) the following minimum levels established as the site-specific operating limits during testing:

PCS Car	Scrubber Water Flow Rate, gal/min	Pressure Drop, in. wc
#3	860	37
#4	607	33

- ii. Pursuant to 40 CFR 63.7290(b)(3)(ii), for each capture system the Permittee must maintain the daily average fan revolutions per minute (RPM) at or above (no lower than) the minimum level established as the site-specific operating limits during testing:

PCS Car	RPM
#3	1650
#4	1743

- iii. Pursuant to 40 CFR 63.7323 (e)(1) through (3), the Permittee may change the operating limit for a venturi scrubber, capture system, or mobile control device that captures emissions during pushing if the Permittee meets the following requirements described below:
- A. Submit a written notification to the Illinois EPA of Permittee's request to conduct a new performance test to revise the operating limit.
- B. Conduct a performance test to demonstrate that emissions of particulate matter from the

control device do not exceed the applicable limit in 40 CFR 63.7290(a).

- C. Establish revised operating limits according to the applicable procedures in 40 CFR 63.7323.
- i. The Permittee shall comply with the work practice standards for fugitive pushing emissions as specified by 40 CFR 63.7291. In particular:
 - i. The Permittee shall observe and record the opacity of fugitive pushing emissions as required by 40 CFR 63.7291(a) (1), (a) (2), (a) (3) and (a) (4).
 - ii. The Permittee shall undertake corrective action(s) in the event that the opacity of fugitive pushing emissions exceeds the applicable limit, as required by 40 CFR 63.7291(a) (5) through (a) (7).
 - iii. Pursuant to 40 CFR 63.7291(b), the Permittee may request to use an alternative to the work practice standards in 40 CFR 63.7291(a) using the procedure provided in 40 CFR 63.6(g).
- j. For each by-product coke oven battery with vertical flues subject to the work practice standards for fugitive pushing emissions in 40 CFR 63.7291(a), the Permittee must demonstrate continuous compliance according to the following requirements of 40 CFR 63.7334(a) (1) through (8):
 - i. The Permittee shall observe and record the opacity of fugitive emissions for four consecutive pushes per operating day, except the Permittee may make fewer or non-consecutive observations as permitted by 40 CFR 63.7291(a) (3). The Permittee shall maintain records of the pushing schedule for each oven and records indicating the legitimate operational reason for any change in the pushing schedule according to 40 CFR 63.7291(a) (4).
 - ii. The Permittee shall observe and record the opacity of fugitive emissions from each oven in a battery at least once every 90 days. If an oven cannot be observed during a 90-day period, the Permittee shall observe and record the opacity of the first push of that oven following the close of the 90-day period that can be read in accordance with the procedures in 40 CFR 63.7334(a) (1) through (8).
 - iii. The Permittee shall make all observations and calculations for opacity observations of fugitive pushing emissions in accordance with Method 9 in appendix A to 40 CFR Part 60 using a Method 9

certified observer unless the Permittee has an approved alternative procedure under 40 CFR 63.7334(a)(7).

- iv. The Permittee shall record pushing opacity observations at 15-second intervals as required in section 2.4 of Method 9 Appendix A to 40 CFR Part 60. The following requirements do not apply: (section 2.4 of Method 9) for a minimum of 24 observations; the data reduction requirements in (section 2.5 of Method 9); and obtaining at least 3 hours of observations (thirty 6-minute averages) to demonstrate initial compliance (40 CFR 63.6(h)(5)(ii)(B)) does not apply.
- v. If fewer than six but at least four 15-second observations can be made, the Permittee shall use the average of the total number of observations to calculate average opacity for the push. Missing one or more observations during the push (*e.g.*, as the quench car passes behind a building) does not invalidate the observations before or after the interference for that push. However, a minimum of four 15-second readings must be made by the Permittee for a valid observation.
- vi. The Permittee shall begin observations for a push at the first detectable movement of the coke mass. The Permittee shall end observations of a push when the quench car enters the quench tower.
 - A. For a battery without a cokeside shed, the Permittee shall observe fugitive pushing emissions from a position at least 10 meters from the quench car that provides an unobstructed view and avoids interferences from the topside of the battery. This may require the observer to be positioned at an angle to the quench car rather than perpendicular to it. Typical interferences for the observer to avoid include emissions from open standpipes and charging. Opacity of emissions shall be observed above the battery top with the sky as the background where possible. The Permittee shall record the oven number of any push not observed because of obstructions or interferences.
 - B. An observer may reposition after the push to observe emissions during travel if necessary.

- vii. If it is infeasible to implement the procedures in 40 CFR 63.7334 (a) (1) through (6) for an oven due to physical obstructions, nighttime pushes, or other reasons, the Permittee may apply to an appropriate permitting authority (USEPA) for permission to use an alternative procedure. The application must provide a detailed explanation of why it is infeasible to use the procedures in 40 CFR 63.7334 (a) (1) through (6), identify the oven and battery numbers, and describe the alternative procedure. An alternative procedure must identify whether the coke in that oven is not completely coked, either before, during, or after an oven is pushed.
- viii. For each oven observed that exceeds an opacity of 30 percent for any short battery, the Permittee must take corrective action and/or increase the coking time in accordance with 40 CFR 63.7291(a). The Permittee shall maintain records documenting conformance with the requirements in 40 CFR 63.7291(a).
- k. Pursuant to Section 39.5(7)(d) of the Act, the Permittee shall have daily observations conducted for pushing to confirm compliance with 35 IAC 212.443(c) (1) (A) (Condition 7.2.3-5(a)). These observations shall be conducted in accordance with applicable procedures in Condition 7.2.12(b). These observations may be coordinated with the observations required by the NESHAP provided that appropriate observations are made and data collected to address the applicable standard under state rule. These observations shall also include, on a monthly basis, opacity observations for the stack of the mobile scrubber car.
- l. For each coke oven battery with a capture system or control device applied to pushing emissions, the Permittee shall demonstrate continuous compliance with the operation and maintenance requirements in 40 CFR 63.7300(c) by meeting the following requirements outlined in 40 CFR 63.7335(b):
 - i. Making monthly inspections of capture systems according to 40 CFR 63.7300(c) (1) and recording all information needed to document conformance with these requirements; and
 - ii. Performing preventative maintenance for each control device according to 40 CFR 63.7300(c) (2) and recording all information needed to document conformance with these requirements.

7.2.8-3 Monitoring Requirements for Quenching

- a. For each coke oven battery subject to the work practice standard for quenching in 40 CFR 63.7295(b), the Permittee must demonstrate continuous compliance according to the following requirements of 40 CFR 63.7334(e) (1) through (3):
 - i. Maintaining baffles in each quench tower such that no more than 5 percent of the cross-sectional area of the tower is uncovered or open to the sky as required in 40 CFR 63.7295(b) (1);
 - ii. Maintaining records that document conformance with the washing, inspection, and repair requirements in 40 CFR 63.7295(b) (2), including records of the ambient temperature on any day that the baffles were not washed; and
 - iii. Maintaining records of the source of makeup water to document conformance with the requirement for acceptable makeup water in 40 CFR 63.7295(a) (2).
- b. Pursuant to 40 CFR 63.7295(b), for the quench tower, the Permittee shall perform inspections on at least a monthly basis for damaged or missing baffles and initiate repair or replacement within 30 days, which shall be completed as soon as practicable, as specified by 40 CFR 63.7295(b) (3) and (4).

7.2.8-4 Monitoring Requirements for Combustion Stacks

- a. Pursuant to 40 CFR 63.7330(e), for each coke oven battery stack, the Permittee must operate and maintain a COMS to measure and record the opacity of emissions exiting each stack according to the requirements in 40 CFR 63.7331(j) (1) through (5) and the following below:
 - i. The Permittee must operate, and maintain each COMS according to the requirements in 40 CFR 63.8(e) and Performance Specification 1 in 40 CFR Part 60, Appendix B. The Permittee shall identify periods the COMS is out-of-control, including any periods that the COMS fails to pass a daily calibration drift assessment, quarterly performance audit, or annual zero alignment audit.
 - ii. The Permittee must conduct a performance evaluation of each COMS according to the requirements in 40 CFR 63.8 and Performance Specification 1 in Appendix B to 40 CFR Part 60.
 - iii. The Permittee must develop and implement a quality control program for operating and maintaining each

COMS according to the requirements in 40 CFR 63.8(d). At minimum, the quality control program must include a daily calibration drift assessment, quarterly performance audit, and an annual zero alignment audit of each COMS.

- iv. Each COMS installed, operated and maintained by the Permittee must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. The Permittee must reduce the COMS data as specified in 40 CFR 63.8(g) (2).
 - v. The Permittee must determine and record the hourly and daily (24-hour) average opacity according to the procedures in 40 CFR 63.7324(b) using all the 6-minute averages collected for periods during which the COMS is not out-of-control.
- b. Pursuant to Sections 39.5(7) (d) and (p) of the Act, the Permittee shall also record 6-minute average opacity data from the COMS required by Condition 7.2.8-4(a).

7.2.8-5 Monitoring Requirements for Emergency By-pass Bleeder Stacks

Pursuant to 40 CFR 63.309(h) (1), for a flare installed to meet the requirements of 40 CFR 63.307(b) (see Condition 7.2.3-8(b)):

If any emergency by-pass bleeder stack flare operates more than 5 minutes (cumulative) during any 2 hour period, visible emissions observations shall be conducted by using Method 22 in Appendix A of 40 CFR Part 60.

7.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected coke production operations, pursuant to Sections 39.5(7) (a) and (e) of the Act:

- a. 40 CFR 63, Subpart CCCCC (40 CFR 63.7334(d))

For each by-product coke oven battery subject to the work practice standard for soaking in 40 CFR 63.7294(a), the Permittee must demonstrate continuous compliance by maintaining records that document conformance with requirements in 40 CFR 63.7294(a) (1) through (5).

- b. 40 CFR 63, Subpart CCCCC (40 CFR 63.7342 and 63.7343)
 - i. The Permittee shall keep the following records specified in 40 CFR 63.7342 (a) (1) through (3):

- A. A copy of each notification and report that the Permittee submitted to comply with 40 CFR 63 Subpart CCCCC, including all documentation supporting any initial notification or notification of compliance status that the Permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv).
 - B. The records in 40 CFR 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.
 - C. Records of performance tests, performance evaluations, and opacity observations as required in 40 CFR 63.10(b)(2)(viii).
- ii. For each COMS or CEMS, the Permittee shall keep the following records specified in 40 CFR 63.7342(b)(1) through (4):
- A. Records described in 40 CFR 63.10(b)(2)(vi) through (xi).
 - B. Monitoring data for COMS during a performance evaluation as required in 40 CFR 63.6(h)(7)(i) and (ii).
 - C. Previous (that is, superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3).
 - D. Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.
- iii. The Permittee shall keep the records in 40 CFR 63.6(h)(6) for visual observations [40 CFR 63.7342(c)].
- iv. The Permittee shall keep the records required in 40 CFR 63.7333 through 63.7335 to show continuous compliance with each emission limitation, work practice standard, and operation and maintenance requirement that applies to the Permittee [40 CFR 63.7342(d)].
- v. The Permittee shall keep its records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1) [40 CFR 63.7343(a)].

- vi. As specified in 40 CFR 63.10(b)(1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record [40 CFR 63.7343(b)].
 - vii. The Permittee shall keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The Permittee may keep the records offsite for the remaining 3 years [40 CFR 63.7343(c)].
- c. 40 CFR 63, Subpart CCCCC (40 CFR 63.7326)
- i. Pursuant to 40 CFR 63.7326(a)(2), For each venturi scrubber applied to pushing emissions, the Permittee shall have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with 40 CFR 63.7323(a).
 - ii. Pursuant to 40 CFR 63.7326(a)(4)(iii), For each capture system applied to pushing emissions, the Permittee shall have a record of the fan RPM measured during the performance test in accordance with 40 CFR 63.7323(c)(3).
- d. 40 CFR Part 63, Subpart L (40 CFR 63.311(f) and (g))

The Permittee shall maintain files of all required information in a permanent form suitable for inspection at an onsite location for at least 1 year and must thereafter be accessible within 3 working days to the Administrator for the time period specified in 40 CFR 70.6(a)(3)(ii)(B). Copies of the work practice plan developed under 40 CFR 63.306 and the startup, shutdown, and malfunction plan developed under 40 CFR 63.310 shall be kept onsite at all times. The Permittee shall maintain the following information:

- i. A copy of the work practice plan required by 40 CFR 63.306 and any revision to the plan [40 CFR 63.311(f)(3)];
- ii. If the Permittee is required under 40 CFR 63.306I to implement the provisions of a work practice plan for a particular emission point, the following records shall be maintained by the Permittee regarding the implementation of plan requirements for that emission point during the implementation period [40 CFR 63.311(f)(4)]:

- A. Copies of all written and audiovisual materials used in the training, the dates of each class, the names of the participants in each class, and documentation that all appropriate personnel have successfully completed the training required under 40 CFR 63.306(b) (1);
 - B. The records required to be maintained by the plan provisions implementing 40 CFR 63.306(b) (7);
 - C. Records resulting from audits of the effectiveness of the work practice program for the particular emission point, as required under 40 CFR 63.306(b) (2) (i), 63.306(b) (3) (i), 63.306(b) (4) (i), or 63.306(b) (5) (i); and
 - D. If the plan provisions for coke oven doors must be implemented, records of the inventory of doors and jambs as required under 40 CFR 63.306(b) (2) (vi).
- iii. The design drawings and engineering specifications for the bypass/bleeder stack flare system or approved alternative control device or system as required under 40 CFR 63.307 [40 CFR 63.311(f) (5)].
 - iv. Records specified in 40 CFR 63.310(f) regarding the basis of each malfunction notification [40 CFR 63.311(f) (6)].
 - v. Records required to be maintained and reports required to be filed with the Illinois EPA under Subpart L shall be made available in accordance with the requirements of 40 CFR 63.311(g) by the Permittee to the authorized collective bargaining representative of the employees at a coke oven battery, for inspection and copying.
 - A. Requests under 40 CFR 63.311(g) shall be submitted in writing, and shall identify the records or reports that are subject to the request with reasonable specificity;
 - B. The Permittee shall produce the reports for inspection and copying within a reasonable period of time, not to exceed 30 days. A reasonable fee may be charged for copying (except for the first copy of any document), which shall not exceed the copying fee charged by the Illinois EPA under the Act;

- C. Nothing in 40 CFR 63.311(g) shall require the production for inspection or copying of any portion of a document that contains trade secrets or confidential business information that the Illinois EPA would be prohibited from disclosing to the public under the Act; and
 - D. The inspection or copying of a document under 40 CFR 63.311(g) shall not in any way affect any property right of the owner or operator in such document under laws for the protection of intellectual property, including the copyright laws.
- e. Implementation of the good air pollution control practices, as required by Condition 7.2.5-3(b) (i), shall be supported by maintaining logs or other records for the implementation of operation practices and for maintenance activities performed by Permittee.
 - f. Records of the total annual coke production at batteries "A" and "B" (ton/yr) and separately for the Battery B [39.5(7) (b) of the Act].
 - g. Records for Startups of Affected coke ovens, pursuant to Section 39.5(7) (b) of the Act
 - i. The Permittee shall maintain startup procedures for each affected coke oven, as required by Condition 7.2.5-4(b) .
 - ii. The Permittee shall maintain the following records for each startup of an affected coke oven:
 - A. Date, time and duration of the startup.
 - B. A description of the startup and reason(s) for the startup.
 - C. Whether a violation of an applicable standard may have occurred during startup accompanied by the information in Condition 7.2.9(g) (iv) if a violation may have or did occur.
 - D. Whether the established startup procedures, maintained above, were followed accompanied by the information in Condition 7.2.9(g) (iii) if there were departure(s) from those procedures.
 - iii. If the established startup procedures were not followed during a startup, the Permittee shall maintain the following records:

- A. A description of the departure(s) from the established procedures.
- B. The reason(s) for the departure(s) from the established procedures.
- C. An explanation of the consequences of the departure(s) for emissions, such as whether the departure(s) prolonged the startup or resulted in additional emissions, and if so:
 - 1. The actions taken to minimize emissions and the duration of the startup; and
 - 2. An explanation whether similar incidents might be prevented in the future and if so, the corrective actions taken or to be taken to prevent similar incidents.
- iv. If a violation did or may have occurred during a startup, the Permittee shall maintain the following records:
 - A. Identification of the applicable standard(s) that were or may have been violated.
 - B. An explanation of the nature of such violation(s), including the magnitude of such excess emissions.
 - C. A description of the actions taken to minimize the magnitude of emissions and duration of the startup.
 - D. An explanation whether similar incidents could be prevented or ameliorated in the future and if so, a description of the actions taken or to be taken to prevent similar incidents in the future.
- h. Records for Malfunctions or Breakdowns

Pursuant to 35 IAC 201.263, the Permittee shall maintain records of continued operation of the affected coke ovens as addressed by Condition 7.2.5-4, during malfunctions or breakdowns, which at a minimum, shall include the following records. The preparation of these records shall be completed within 45 days of an incident, unless the Permittee conducts a root cause analysis for the incident, in which case the preparation of these records, other than

the root cause analysis, shall be completed within 120 days of the incident.

- i. Date, time and duration of the incident.
- ii. A detailed description of the incident, including:
 - A. A chronology of significant events during and leading up to the incident.
 - B. Relevant operating data for the unit, including information such as operator log entries and directives provided by management during the incident.
 - C. The measures taken to reduce the quantity of emissions and the duration of the incident including the resources utilized to address the incident.
 - D. The magnitude of emissions during the incident.
- iii. An explanation why continued operation of an affected coke oven was necessary to prevent personnel injury or prevent equipment damage.
- iv. A discussion of the cause(s) or probable cause(s) of the incident including the following:
 - A. Whether the incident was sudden, unavoidable, or preventable, including:
 1. Why the equipment design did not prevent the incident;
 2. Why better maintenance could not have avoided the incident;
 3. Why better operating practices could not have avoided the incident; and
 4. Why there was no advance indication for the incident.
 - B. Whether the incident stemmed from any activity or event that could have been foreseen, avoided or planned for,
 - C. Whether the incident was or is part of a recurring pattern indicative of inadequate design, operation or maintenance.

- v. A description of any steps taken to prevent similar future incidents or reduce their frequency and severity.
- vi. As an alternative to keeping the records required by Condition 7.2.9(h) (iv), the Permittee may perform a root cause analysis. For this purpose, a root cause analysis is an analysis whose purpose is to determine, correct and eliminate the primary causes of the incident and the excess emissions resulting there from. If the Permittee performs a root cause analysis method that would define the problem, define all causal relationships, provide a causal path to the root cause, delineate the evidence, and provide solutions to prevent a recurrence. Such an analysis shall be completed within one year of the incident.

i. Quench stations

The Permittee shall maintain the following records for quenching operations:

- i. A file listing the emissions factors used by the Permittee to determine the emissions of the various quenching operations, with supporting documentation and analysis. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
- ii. Records for the total number of quenches (ovens pushed), the total amount of coke quenched (tons) and the average amount of coke per quench (tons/quench) on a monthly and annual basis*.
- iii. A log showing each period of time when coke was quenched at the East Quench Station, with number of quenches during the period and explanation of reason for use of the East Quench Station.
- iv. Records on an annual basis* for the:
 - A. Total number of quenches.
 - B. For the East Quench Station:
 - 1. Total number of quenches and amount of coke quenched at the East Quench Station.
 - 2. Total number of quenches and amount of coke quenched at the East Quench Station due to malfunction and breakdown.
 - 3. Percentage of total quenches that occurred at the East Quench Station.

C. For the emergency quench station:

1. Total number of quenches and amount of coke quenched at the emergency quench station.
2. Percentage of total quenches that occurred at the emergency quench station.

* These records shall be kept for the 12-month period from July 1 to June 30 and the initial 12-month period following shakedown of the West Quench Station with new quench tower.

- v. Records for emissions of PM, PM₁₀, and PM_{2.5} from each affected quench station and from the emergency quench station (tons/month and tons/year), with supporting calculations.
- j.
 - i. A file containing the emission rates (lb/hr and lb/ton) used by the Permittee to determine PM emissions from the mobile quench cars, with supporting documentation, which rates shall be reviewed when new data becomes available to assure that these rates do not understate actual emissions. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
 - ii. Records of PM emissions of the mobile scrubber cars (tons/month and tons/year), with supporting calculations.
- k.
 - i. Monthly and annual records of supplementary natural gas usage (scf) for underfiring the coke oven batteries and associated emissions (tons) with supporting calculations.
 - ii. Records of emissions as addressed in Condition 7.2.6(c).
- l. Records of observations of duration of charging, percentage of leaks or opacity that are conducted by the Permittee or on its behalf to determine compliance with 35 IAC 212.443(b) and (c) (1) (A) in addition to the observations required by Condition 7.2.8-1 and 7.2.8-2.
- m. Records of all test reports and submittals related to emission testing required by Section 7.2 of this permit.

7.2.10 Reporting Requirements

- a. Opacity Monitoring Reports for Combustion Stacks

Pursuant to Sections 39.5(7) (a), (d) and (p) of the Act, the Permittee shall provide the following reports for each coke oven battery to the Illinois EPA, including a copy directly to Collinsville Regional Office, on a quarterly basis.

- i. "Excess opacity reports" that list all opacity measurements which exceed 30 percent, averages over a six minute period. These reports shall also 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 excess opacity. These reports shall also specify the date of those periods during which the continuous monitoring system was not in operation.
- ii. "Summary reports" that provide the average opacity, 6-minute average, measured during the reporting period and the distribution of opacity measurements, 6-minute average and hourly average, during the reporting period, by percent, in ranges as follows:

Ranges	
6-Minute Averages	Hourly Averages
< 2	< 1
> 2 and < 5	> 1 and < 3
> 5 and < 10	> 3 and < 6
> 10 and < 15	> 6 and < 10
> 15 and < 20	> 10 and < 15
> 20 and < 30	> 15
> 30	

- b. 40 CFR Part 63, Subpart CCCCC (40 CFR 63.7336)

Pursuant to 63.7336(a) the Permittee must report each instance in which it did not meet each emission limitation in Conditions 7.2.3-5(c), 7.2.3-6(a) and 7.2.3-7(b). This includes periods of startup, shutdown, and malfunction. The Permittee must also report each instance in which it did not meet each work practice standard or operation and maintenance requirement in Condition 7.2.8-2(h). These instances are deviations from the emission limitations (including operating limits), work practice standards, and operation and maintenance requirements. These deviations must be reported according to the requirements in 40 CFR 63.7341.

- c. 40 CFR Part 63, Subpart CCCCC (40 CFR 63.7341)

- i. Pursuant to 40 CFR 63.7341(a) (3) and (4), compliance report due dates. Unless the Illinois EPA has approved a different schedule, the Permittee shall submit quarterly compliance reports for battery

stacks and semiannual compliance reports for all other affected sources to the Illinois EPA according to the following requirements:

- A. All quarterly compliance reports for battery stacks must be postmarked or delivered no later than one calendar month following the end of the quarterly reporting period. All semiannual compliance reports must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.
 - B. If the Illinois EPA has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A), the Permittee may submit compliance reports according to the dates the Illinois EPA has established instead of according to the dates in 40 CFR 63.7341(a)(1) through (3).
- ii. Quarterly compliance report contents. Each quarterly report must provide information on compliance with the emission limitations for battery stacks in 40 CFR 63.7296. The reports must include the information in 40 CFR 63.7341(c)(1) through (3), and as applicable, 40 CFR 63.7341(c)(4) through (8).
 - iii. Semiannual compliance report contents. Each compliance report must provide information on compliance with the emission limitations, work practice standards, and operation and maintenance requirements for all affected sources except battery stacks. The reports must include the following information [40 CFR 63.7341(c)]:
 - A. Company name and address.
 - B. Statement by a responsible official, with the official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
 - C. Date of report and beginning and ending dates of the reporting period.
 - D. If the Permittee had a startup, shutdown, or malfunction during the reporting period and the Permittee took actions consistent with the startup, shutdown, and malfunction plan, the compliance report must include the information in 40 CFR 63.10(d)(5)(i).

- E. If there were no deviations from the continuous compliance requirements in 40 CFR 63.7333(e) for battery stacks, a statement that there were no deviations from the emission limitations during the reporting period. If there were no deviations from the continuous compliance requirements in 40 CFR 63.7333 through 63.7335 that apply to the Permittee (for all affected sources other than battery stacks), a statement that there were no deviations from the emission limitations, work practice standards, or operation and maintenance requirements during the reporting period.
- F. If there were no periods during which a continuous monitoring system (including COMS, continuous emission monitoring system (CEMS), or CPMS) was out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which a continuous monitoring system was out-of-control during the reporting period.
- G. For each deviation from an emission limitation in Subpart CCCCC (including quench water limits) and for each deviation from the requirements for work practice standards in Subpart CCCCC that occurs at an affected source where the Permittee is not using a continuous monitoring system (including a COMS, CEMS, or CPMS) to comply with the emission limitations in Subpart CCCCC, the compliance report must contain the following information (this includes periods of startup, shutdown, and malfunction):
1. The total operating time of each affected source during the reporting period.
 2. Information on the number, duration, and cause of deviations (including unknown cause, if applicable) as applicable and the corrective action taken.
- H. For each deviation from an emission limitation occurring at an affected source where the Permittee is using a continuous monitoring system (including COMS, CEMS, or CPMS) to comply with the emission limitation in Subpart CCCCC, the Permittee shall include the

following information (this includes periods of startup, shutdown, and malfunction):

1. The date and time that each malfunction started and stopped.
2. The date and time that each continuous monitoring system (including COMS, CEMS, or CPMS) was inoperative, except for zero (low-level) and high-level checks.
3. The date, time, and duration that each continuous monitoring system (including COMS, CEMS, or CPMS) was out-of-control, including the information in 40 CFR 63.8(c)(8).
4. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.
5. A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
6. A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.
7. A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.
8. An identification of each HAP that was monitored at the affected source.
9. A brief description of the process units.
10. A brief description of the continuous monitoring system.

11. The date of the latest continuous monitoring system certification or audit.
 12. A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.
- iv. Immediate startup, shutdown, and malfunction report. If the Permittee had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with the Permittee's startup, shutdown, and malfunction plan, the Permittee shall submit an immediate startup, shutdown, and malfunction report according to the requirements in 40 CFR 63.10(d)(5)(ii).
- d. 40 CFR Part 63, Subpart L (40 CFR 63.311)
- i. Semiannual compliance certification. The Permittee shall include the following information in the semiannual compliance certification [40 CFR 63.311(d)]:
 - A. Certification, signed by the Permittee, that no coke oven gas was vented, except through the bypass/bleeder stack flare system of a by-product coke oven battery during the reporting period or that a venting report has been submitted according to the requirements in 40 CFR 63.311(e).
 - B. Certification, signed by the Permittee, that a startup, shutdown, or malfunction event did not occur for a coke oven battery during the reporting period or that a startup, shutdown, and malfunction event did occur and a report was submitted according to the requirements in 40 CFR 63.310(e).
 - C. Certification, signed by the Permittee, that work practices were implemented if applicable under 40 CFR 63.306.
 - ii. Report for the venting of coke oven gas other than through a flare system. The Permittee shall report any venting of coke oven gas through a bypass/bleeder stack that was not vented through the bypass/bleeder stack flare system to the Administrator as soon as practicable but no later than 24 hours after the beginning of the event. A written report shall be submitted within 30 days of the event and shall include a description of the event and, if applicable, a copy of the notification for a

hazardous substance release required, pursuant to 40 CFR 63.311(e).

iii. 40 CFR Part 63, Subpart L (40 CFR 63.310)

A. Pursuant to 40 CFR 63.310(d), in order for the provisions of 40 CFR 63.310(i) to apply with respect to the observation (or set of observations) for a particular day, notification of a startup, shutdown, or a malfunction shall be made by the Permittee:

If practicable, to the certified observer if the observer is at the source during the occurrence; or to the enforcement agencies (USEPA and Illinois EPA), in writing, within 24 hours of the occurrence first being documented by personnel, and if the notification to the certified observer was not made, an explanation of why no such notification was made.

B. Pursuant to 40 CFR 63.310(e), within 14 days of the notification made under 40 CFR 63.310 (d), or after a startup or shutdown, the Permittee shall submit a written report to the Illinois EPA that describes the time and circumstances of the startup, shutdown, or malfunction; and describes actions taken that might be considered inconsistent with the startup, shutdown, or malfunction plan.

e. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected coke oven operations from applicable requirements unless a NESHAP standard specifies a different timeframe as identified in Condition 7.2.11(c) and (d), as follows:

A. Requirements in Condition 7.2.3(d).

B. Requirements in Condition 7.2.3-1.

C. Requirements in Condition 7.2.3-2.

D. Requirements in Condition 7.2.3-3.

E. Requirements in Condition 7.2.3-4.

F. Requirements in Condition 7.2.3-5.

G. Requirements in Condition 7.2.3-6.

H. Requirements in Condition 7.2.3-7.

- I. Requirements in Condition 7.2.3-8.
 - J. Requirements in Condition 7.2.5-1.
 - K. Requirements in Condition 7.2.5-2.
 - L. Requirements in Condition 7.2.6.
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
 - iii. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
 - iv. All deviation reports described in Condition 7.2.10(e) above shall contain the following:
 - A. Date, time and duration of the deviation;
 - B. Description of the deviation;
 - C. Probable cause of the deviation; and
 - D. Any corrective actions or preventive measures taken.
- f. Quench stations [08060026]

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of quenching operations during malfunction or breakdown that does not meet the requirements of 35 IAC 212.443(h) (1):

- i. For noncompliance due to malfunction or breakdown that lasts more than 30 minutes (quenching of four ovens):
 - A. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than the next Agency business day.
 - B. Upon achievement of compliance, the Permittee shall give a written follow-up notice within 15 days to the Illinois EPA, Air Compliance Section and Regional Field Office, providing a detailed explanation of the event, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies

with chronology, and when the repairs were completed.

- C. If compliance is not achieved within 48 hours of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Air Compliance Section and Regional Field Office, on a daily basis, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete.
 - ii. For noncompliance due to malfunction or breakdown that is no more than 30 minutes in duration, the Permittee shall provide the information for the incident or period with the periodic compliance reports required by 40 CFR 63, Subpart CCCCC.
 - iii. Within two years of initial startup of the low emission quench tower on the West Quench Station, the Permittee shall submit a report evaluating the reduction in filterable and total PM_{2.5} and PM₁₀ emissions achieved by this project, on both in terms of emissions per ton of coke quenched and in terms of annual emissions.
- g. Reporting on the State malfunction and breakdown authorization shall be performed in accordance with Condition 5.10.5-2.
- h. Reporting on the State startup authorization shall be performed in accordance with Condition 5.10.5-1.
- i. Reporting on the Federal SSM authorization shall be performed in accordance with Condition 5.10.5-3.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected coke oven operations.

7.2.12 Compliance Procedures

For purposes of 35 IAC 212.443:

- a. Coke Oven Charging, Leaks from Doors, Leaks from Lids and Leaks from Off Takes: Observations shall be conducted in accordance with 40 CFR 63, Appendix A, Method 303 which is consistent with the procedures specified in 35 IAC 280.104 to 280.107 and the Consent Decree, Civil Action No. 81-3009 referenced in Construction Permit C808048.

i. Battery A and B - Charging:

Observations shall be conducted in accordance with 40 CFR 63, Appendix A, Method 303 which is consistent with the procedures specified in 35 IAC 280.104 to 280.107 and the Consent Decree, Civil Action No. 81-3009 referenced in Construction Permit C808048.

Observation of charging emissions shall be made from any point or points on the topside of a coke oven battery from which a qualified observer can obtain an unobstructed view of the charging operation.

The qualified observer shall time the visible emissions with a stopwatch while observing the charging operation. Only emissions from the charge port and any part of the larry car shall be timed. The observation shall commence as soon as coal is introduced into the first charge port as indicated by the first charge port as indicated by the first mechanical movement of the coal feeding mechanism on the larry car and shall terminate when the last charge port lid has been replaced. Simultaneous emissions from more than one emission point shall be timed and recorded as one emission and shall not be added individually to the total time.

The qualified observer shall determine and record the total number of seconds that charging emissions are visible during the charging of coal to the coke oven.

For each charge observed, the qualified observer shall record the total number of seconds of visible emissions, the clock time for the initiation and completion of the charging operation and the battery identification and oven number.

The qualified observer shall not record any emissions observed after all charging port lids have been firmly seated following removal of the larry car, such as emissions occurring when a lid has been temporarily removed to permit spilled coal to be swept into the oven.

In the event that observations of emissions from a charge are interrupted due to events beyond the control of the observer, the data from that charge shall be invalidated and the observer shall note on his observation sheet the reason for invalidating the data. The observer shall then resume observation of the next consecutive charge or charges, and continue until he has obtained a set of consecutive charges immediately preceding the interrupted charge and the charge immediately following the interrupted charge shall constitute consecutive charges. Compliance

shall be determined by summing the seconds of charging emission observed during a set of five consecutive charges. Any one charge may be included in only one set of consecutive charges.

ii. Battery A and B - Doors:

Compliance with the percent door area leakage standard shall be determined in accordance with the following method:

Observations of door emissions shall be made from a minimum distance of 25 feet from each door. Each door shall be observed in sequence for only that period necessary to determine whether or not, at the time, there are visible emissions from any point on the door while the observer walks along the side of the battery. If the observer's view of a door is more than momentarily obstructed, as, for example, by door machinery, pushing machinery, coke guide, luter truck, or opaque steam plumes, he shall record the door obstructed and the nature of the obstruction and continue the observations with the next door in sequence which is not obstructed. The observer shall continue this procedure along the entire length of the battery for both sides and shall record the battery identification, battery side, and oven door identification number of each door exhibiting visible emissions. Before completing the traverse or immediately thereafter he shall attempt to reobserve the obstructed doors.

iii. Battery A and B - Charging Ports/Lids:

For purposes of determining compliance with limits on visible emissions from charging ports, observations of any visible emissions shall be made and recorded during the time an observer walks the topside of a battery from one end to the other. Each oven shall be observed in sequence. The observer may also observe off take pipe leaks during this traverse of the battery. The observer shall record the battery identification, the points of emissions from each oven, the oven number, and whether an oven was dampered off. Compliance shall be determined by application of the following formula which shall exclude the ports on up to 3 ovens ahead of the oven being pushed which are dampered off.

iv. Battery A and B - Off Takes:

For purposes of determining compliance with limits on visible emissions from off take pipes, observations of any visible emissions from the off take piping shall be made by traversing the topside of the

battery. During the traverse(s), the observer shall walk as near to the center of the battery as safety considerations permit but may walk as close as necessary to the off take piping to determine whether an observed emission is emanating from the off take piping. Each oven shall be observed in sequence. The observer may also observe charging port emissions during this traverse of the battery. The observer shall record the battery identification, the points of off take piping emission from any oven and the oven number.

b. Coke Oven Pushing:

i. Battery A and B:

Opacity readings shall be taken by a qualified observer located in a position where the oven being pushed, the coke receiving car and the path to the quench tower are visible. The opacity shall be read as the emissions rise and clear the top of the coke battery gas mains. The qualified observer shall record opacity readings of emissions originating at the receiving car and associated equipment and the coke oven, including the standpipe on the coke side of the oven being pushed. Opacity readings shall be taken in accordance with the procedures set forth in 40 CFR Part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113, except that Section 2.5 for data reduction shall not be used. The qualified observer referenced in this subsection shall be certified pursuant to 40 CFR Part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113.

ii. Battery A:

Opacity readings shall be taken at 15-second intervals, beginning from the time the coke falls into the receiving car or is first visible as it emerges from the coke guide whichever occurs earlier, until the receiving car enters the quench tower or quenching device. For a push of less than 90 seconds duration, the actual number of 15-second readings shall be averaged.

At least four consecutive pushes per day.

iii. Battery B:

Opacity readings shall be taken at 15-second intervals, beginning from the time the coke falls into the receiving car or is first visible as it emerges from the coke guide whichever occurs earlier, until the end of the sixth reading. During the

pushing operation, the observer shall observe all the pushing emissions including, but not limited to, fugitive emissions from the pushing emission control device and from open quench cars during travel.

At a minimum, one push per day.

c. Coke Quenching (35 IAC 212.443(h)(2))

- i. Samples shall be taken from each quench station as separate grab samples or composite samples.
- ii. Samples shall be collected a minimum of five days per week and analyzed to report a weekly concentration. The samples for each week shall be analyzed either:
 - A. Separately, with the average of the individual daily concentrations determined; or
 - B. As one composite sample, with equal volumes of the individual daily samples combined to form the composite sample.

7.2.13 State-Only Conditions

State-only conditions are not being established.

7.3 Coke By-Product Recovery Plant and COG Desulfurization System

7.3.1 Description

COG is made up of various organic materials volatilized during the coal-to-coke conversion process. The raw coke oven gas from U. S. Steel two existing coke oven batteries is processed in the coke by-product recovery plant, where various byproducts are removed. Once treated, the COG is used as a fuel in the coke batteries and in various boilers and furnaces throughout the facility.

Coke Oven Gas (COG) Processing Unit:

COG from the coke ovens first passes through the primary cooler where it is cooled. The cooling of COG causes tar, naphthalene, and liquor to condense. The cool COG is then pushed through the entire by-product plant with the aid of exhausters. More tar and liquor are removed by the centrifugal force created in the exhausters. Droplets of tar, naphthalene, and liquor accumulate and drain to the tar sump. Ammonia present in the COG is then removed by passing it through ammonia absorber. The removal of ammonia is accomplished by exposing the COG to a spray of sulfuric acid in the ammonia absorber. The COG then enters the Tar Spray Final Cooler where the COG is further cooled and most of the naphthalene is removed with tar injection. Next COG passes through the Light Oil Scrubber, which is designed to remove the remaining naphthalene and "Light Oils".

From the light oil scrubber, the treated COG is normally further processed in the COG desulfurization system to remove sulfur. The COG is not always processed by desulfurization system because of the need for periodic maintenance on the system. The permit limits the amount of time during which this may occur. COG desulfurization system consists of a packed tower amine unit, hydrogen cyanide destruction unit, and a Claus sulfur recovery unit with tail gas oxidizer. The system removes hydrogen sulfide (H₂S) from the treated COG stream from the by-product plant. The COG desulfurization system is not part of the by-products recovery plant.

The COG stream from the by-product plant is sent to a pressure holding tank from where the COG is distributed to underfire the Coke Oven Batteries and various parts of the plant.

Light Oil Processing Unit:

Processing the Light Oil generated at the Light Oil Scrubber, also called Benzol Washer, is the main activity of this unit. In the Light Oil Scrubber, wash oil is used to scrub out Light Oil from the Coke Oven Gas. Next wash oil is cleaned and re-circulated back through the Light Oil scrubber as described below.

After scrubbing out the light oil in the Light Oil Scrubber, the wash oil passes through two oil to vapor heat exchangers, where the light oil is vaporized. The vapors are then passed through two cool water condensers to condense out the light oil. The light oil then passes through the Secondary Light Oil Separator, where any remaining wash oil and water is removed. The liquid oil is then pumped into one of six storage tanks.

After passing through the oil to vapor heat exchangers, the wash oil passes through steam heaters, the Wash Oil Still, coolers, and finally the Wash Oil Recirculating Tank before it is reintroduced in the Light Oil Scrubber.

Coal Tar Processing:

Tar is collected into a tar sump. The tar is decanted by passing through one of three decanters. Sludge from the decanters is dumped into hoppers from where it is collected by a company for further treatment. Tar from the decanters pass through two dehydration tanks where the water is removed. The tar is then pumped to a storage tank, where it is stored until shipment.

Note: This narrative description is for informational purposes only and is not enforceable.

7.3.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
By-Product Recovery	Coke oven Gas Processing Unit (coke oven gas transfer and handling; gas coolers; gas processing/cleaning unit)	Prior to 06/1982	Steam Blanketing
By-Product Recovery (Continued)	Light Oil Processing (stills; process condensers; sumps) Coal Tar Processing (tar collection and transfer; tar storage tanks) Tar Storage Tanks; Dehydration Tanks; Decanters; Light Oil Storage Tanks; Ammonia Liquor; Storage Tanks	Prior to 06/1982	Clean Gas Blanketing; Steam Blanketing; Negative Pressure Systems

Emission Unit	Description	Date Constructed	Emission Control Equipment
	Railcar/Truck Loading	2004	Vapor Recovery System; Negative Pressure
COG Desulfurization System	Packed tower amine unit and hydrogen cyanide destruction unit		Closed Systems
	Claus Sulfur Recovery Unit		Thermal Oxidizer
COG Flare	COG holding tank and flare		None

7.3.3 Applicable Provisions and Regulations

- a.
 - i. The "affected by-product recovery plant" for the purpose of these unit-specific conditions, is the group of emission units and/operations in the coke by-product recovery plant described in Conditions 7.3.1 and 7.3.2.
 - ii. The COG desulfurization system is the system for desulfurization of treated COG described in Conditions 7.3.1 and 7.3.2.
 - iii. The COG flare is the system for burning of excess of COG described in Conditions 7.3.1 and 7.3.2.
- b. The affected by-product recovery plant is subject to the work practices in 40 CFR Part 61, Subpart L, National Emission Standards for Benzene Emissions from Coke By-Product Recovery Plants.
- c. The affected by-product recovery plant is subject to the work practices in 40 CFR Part 61, Subpart V, National Emission Standards for Equipment Leaks (Fugitive Emissions).
- d. The affected by-product recovery plant is subject to the work practices in 40 CFR Part 61, Subpart FF, National Emission Standard for Benzene Waste Operations.
- e. No person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 liters (250 gallons), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 219.108, or unless such tank is a pressure tank as described in 35 IAC 219.121(a) or is

fitted with a recovery system as described in 35 IAC 219.121(b)(2) [35 IAC 219.122(b)].

- f. The affected by-product recovery plant, COG desulfurization system and COG flare are subject to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.
- g. SO₂ emissions from the affected by-product recovery plant and COG flare shall not exceed 2000 ppm pursuant to 35 IAC 214.301.

7.3.4 Non-Applicability of Regulations of Concern

- a. The storage tanks used at the affected by-product recovery plant are not subject to 35 IAC 219.120 because of the exemption for vessels at coke by-product plants in 35 IAC 219.119(b).
- b. The storage tanks used at the affected by-product recovery plant are not subject to 35 IAC 219.121 (Storage Containers of Volatile Petroleum Liquids (VPL)) because the liquids kept in those tanks are not the product of petroleum refinery and, therefore, do not meet the definition of VPL/petroleum liquids of 35 IAC Part 211.
- c. This permit is issued based on the affected by-product recovery plant not being subject to the applicable requirements of 35 IAC 219.301 because there is 85% reduction of uncontrolled organic material that would otherwise be emitted into atmosphere, pursuant to 35 IAC 219.302.
- d. The COG desulfurization system and COG flare are not subject to 40 CFR 63 Subpart L, National Emission Standards for Benzene Emissions from Coke By-Product Recovery Plants, because both COG systems are not involved in the separation and recovery of coal tar derivatives evolved from coal during the coking process of a coke oven battery.
- e. This permit is issued based on the COG desulfurization system (thermal oxidizer) not being subject to 35 IAC 214.301 pursuant to 35 IAC 214.302, which provides that 35 IAC 214.301 shall not apply to processes designed to remove sulfur compounds from the flue gases of fuel combustion emission sources.

7.3.5 Operation of COG Flare during Malfunction and Breakdown

Pursuant to 35 IAC 201.149 and Part 201 Subpart I, subject to the following terms and conditions, the Permittee is authorized

to continue to operate the COG flare in excess of the applicable state standard in Condition 7.3.3(f) in the event of a malfunction or breakdown.

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally explaining why such continued operation would be required to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns.

- a. This authorization only allows such continued operation as necessary to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.
- b. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall, as soon as practicable, repair the COG flare, reduce flare load or remove it from service so that excess emissions cease.
- c. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.3.10(h) and 5.10.5-2 For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume.
- d. Following notification to the Illinois EPA (see Condition 5.10.5-2(a)(i)) of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident.
- e. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.3.6 Control Requirements and Work Practices

- a. 40 CFR Part 61, Subpart L:
 - i. The Permittee shall operate and maintain a Control System to meet the standards specified below in 40 CFR Part 61 Subpart L. This Control System consists of a Positive Pressure Gas Blanketing System supplied with clean coke oven gas controlling the light oil

area and a Negative Pressure or Steam Blanketing System controlling tar, ammonia and liquor tanks.

- ii. These control systems shall be designed to operate with no detectable emissions (an organic chemical concentration more than 500 ppm above a background concentration), as determined by the methods specified in 40 CFR 61.245, pursuant to 40 CFR 61.132(b).
- iii. The Permittee shall comply with 40 CFR 61.132 - Standard: Process vessels, storage tanks, and tar-intercepting sumps, which includes the following:
 - A. Each owner or operator of a furnace byproduct recovery plant shall enclose and seal all openings on each process vessel, tar storage tank, and tar-intercepting sump.
 - B. The owner or operator shall duct gases from each process vessel, tar storage tank, and tar-intercepting sump to the gas collection system, gas distribution system, or other enclosed point in the by-product recovery process where the benzene in the gas will be recovered or destroyed. This control positive pressure blanketing system shall be designed and operated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined by the methods specified in 40 CFR 61.245(c).
 1. Except, the owner or operator may elect to install, operate, and maintain a pressure relief device, vacuum relief device, an access hatch, and a sampling port on each process vessel, tar storage tank, and tar-intercepting sump. Each access hatch and sampling port must be equipped with a gasket and a cover, seal, or lid that must be kept in a closed position at all times, unless in actual use.
 2. The owner or operator may elect to leave open to the atmosphere the portion of the liquid surface in each tar decanter necessary to permit operation of a sludge conveyor. If the owner or operator elects to maintain an opening on part of the liquid surface of the tar decanter, the owner or operator shall install, operate, and maintain a water leg seal on the tar decanter roof near the sludge

discharge chute to ensure enclosure of the major portion of liquid surface not necessary for the operation of the sludge conveyor.

- C. Each owner or operator of a furnace coke by-product recovery plant also shall comply with the requirements of 40 CFR 61.132(a) through (c) for each benzene storage tank, BTX storage tank, light-oil storage tank, and excess ammonia-liquor storage tank.
- iv. The Permittee shall comply with 40 CFR 61.133 - Standard: Light-oil sumps, which includes the following, pursuant to 40 CFR 61.133(a) and 61.133(c):
- A. Each owner or operator of a light-oil sump shall enclose and seal the liquid surface in the sump to form a closed system to contain the emissions.
 - 1. Except, the owner or operator may elect to install, operate, and maintain a vent on the light-oil sump cover. Each vent pipe must be equipped with a water leg seal, a pressure relief device, or vacuum relief device.
 - 2. Except, the owner or operator may elect to install, operate, and maintain an access hatch on each light-oil sump cover. Each access hatch must be equipped with a gasket and a cover, seal, or lid that must be kept in a closed position at all times, unless in actual use.
 - 3. The light-oil sump cover may be removed for periodic maintenance but must be replaced (with seal) at completion of the maintenance operation.
 - B. The venting of steam or other gases from the by-product process to the light-oil sump is not permitted [40 CFR 61.133(a)].
 - C. Following the installation of any control equipment used to meet the requirements of 40 CFR 61.133(a), the owner or operator shall monitor the connections and seals on each control system to determine if it is operating with no detectable emissions, using Method 21 (40 CFR Part 60, Appendix A) and the procedures specified in 40 CFR 61.245(c), and shall

visually inspect each source (including sealing materials) for evidence of visible defects such as gaps or tears. This monitoring and inspection shall be conducted semiannually and at any other time the cover is removed.

1. If an instrument reading indicates an organic chemical concentration more than 500 ppm above a background concentration, as measured by Method 21, a leak is detected.
 2. If visible defects such as gaps in sealing materials are observed during a visual inspection, a leak is detected.
 3. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected.
 4. A first attempt at repair of any leak or visible defect shall be made no later than 5 calendar days after each leak is detected [40 CFR 61.133(c)].
- v. The Permittee shall comply with 40 CFR 61.135 - Standard: Equipment leaks.
- A. Each piece of equipment in benzene service to which 40 CFR 61 Subpart L applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment in benzene service [40 CFR 61.135(c)].
 - B. Each owner or operator of equipment in benzene service shall comply with requirements of 40 CFR 61, Subpart V.
 - C. The provisions of 40 CFR 61.242-3 and 61.242-9 of Subpart V do not apply to Subpart L.
- b. 40 CFR Part 61, Subpart V:
- 40 CFR 61.242-10: Standards: Delay of Repair
- i. Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.
 - ii. Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is

isolated from the process and that does not remain in VHAP (volatile hazardous air pollutant) service.

- iii. Delay of repair for valves will be allowed if:
 - A. The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair; and
 - B. When repair procedures are affected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 61.242-11.
 - iv. Delay of repair for pumps will be allowed if:
 - A. Repair requires the use of a dual mechanical seal system that includes a barrier fluid system; and
 - B. Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
 - v. Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
- c. 40 CFR 61 Subpart FF (61.355(a)(3) through (a)(5)).
- i. Pursuant to 40 CFR 61.355(a)(3), if the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 tons/yr), then the owner or operator shall comply with the requirements of 40 CFR 61.342(c), (d), or (e).
 - ii. Pursuant to 40 CFR 61.355(a)(4), if the total annual benzene quantity from facility waste is less than 10 Mg/yr (11 tons/yr) but is equal to or greater than 1 Mg/yr, (1.1 ton/yr), then the owner or operator shall:
 - A. Comply with the recordkeeping requirements of 40 CFR 61.356 and reporting requirements of 40 CFR 61.357; and

- B. Repeat the determination of total annual benzene quantity from facility waste at least once per year and whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr (11 ton/yr) or more.
- iii. Pursuant to 40 CFR 61.355(a)(5), if the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall:
 - A. Comply with the recordkeeping requirements of 40 CFR 61.356 and reporting requirements of 40 CFR 61.357; and
 - B. Repeat the determination of total annual benzene quantity from facility waste whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more.
- d. The COG flare shall be operated with a flame present at all times when COG is vented to the flare [Section 39.5(7)(a) of the Act].

7.3.7 Production and Emission Limits for the COG Desulfurization System from Permit 06070022

- a. The Permittee shall operate COG desulfurization system (COG-DS) at all times the by-products plant is producing COG, except when undertaking maintenance or repairs of the system. This total "outage" period shall not exceed 35 days (840 hours) per calendar year.
- b.
 - i. Raw COG production during periods of time when the COG-DS is not operating shall not exceed 1,092 mmscf/year.
 - ii. Total amount of COG generated by Coke Oven Batteries A and B and processed by by-products plant shall not exceed 1,140 mmscf/month and 11,400 mmscf/year.
- c.
 - i. The COG-DS shall be operated and maintained in conformance with good air pollution control practices.
 - ii. The thermal oxidizer combustion chamber for the sulfur recovery unit shall be operated at a temperature that is greater than 1,100°F.
- d.
 - i. The H₂S content of the raw COG entering the COG-DS shall not exceed 500 grains of H₂S/100 scf of COG, daily average.

- ii. The H₂S content of desulfurized COG exiting the COG-DS shall not exceed 66 grains/100 scf of COG, annual average.
 - iii. During periods of time when the COG-DS is operating, the H₂S content of COG shall not exceed the following limits: 25 grains of H₂S/100 scf of COG, monthly average, excluding outages, startup, shutdown, and upsets such as failure of fans, pumps or heat exchangers and aberrations in the composition or condition of the raw COG.
- e. i. Emissions from the thermal oxidizer on the COG-DS shall not exceed the following limits:

PM ₁₀		SO ₂	
(Lbs/Hr)	(Tons/Yr)	(Lbs/Hr)	(Tons/Yr)
5.6	24.6	67.3	294.7

- ii. Combined emissions of PM₁₀ and SO₂ from the thermal oxidizer on COG-DS and combustion of coke oven gas shall not exceed 246.8 and 1,074.1 tons/year for PM₁₀ and SO₂, respectively [T1].
- iii. Compliance with the annual limits in Conditions 7.3.7(b) and (e) shall be determined from a running total of 12 months of data, unless otherwise specified [T1].

7.3.8 Testing Requirements

- a. The Permittee, as the owner or operator of a by-products plant, subject to the provisions of 40 CFR Part 61 Subpart L, shall comply with the requirements in 40 CFR 61.245.
- b. The Permittee shall determine the total annual benzene (TAB) quantity of the facility using the test methods and procedures for determination in 40 CFR 61.355(a) (5). In particular, if the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall repeat the determination of total annual benzene quantity from facility waste whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more.
- c. For the COG flare and the thermal oxidizer in the COG-DS, the Permittee shall conduct observations for visible emissions and/or opacity, using USEPA Method 22 and 9, respectively. These observations shall be conducted by individual(s) certified to observe opacity by USEPA Method 9. The observer(s) may either conduct observations for opacity or conduct observations for visible emissions, immediately followed by observations for opacity if visible

emissions are observed. Observations shall be conducted in at least a monthly basis for the COG flare and an annual basis for the COG-DS thermal oxidizer. In addition, for the COG flare, observations shall be coordinated with weather conditions so that at least two observations are made in each calendar year during elevated wind speed conditions, i.e., wind speed of at least 16 miles per hour.

- d. Upon the written request from the Illinois EPA, the emission tests shall be conducted by the Permittee for the COG-DS to verify compliance with emission limits in Condition 7.3.7(e) as follows [Section 39.5(7) (d) and (p) of the Act]:

- i. The following USEPA test methods shall be used, unless another USEPA method is approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
PM ₁₀	Method 201 or 201A
SO ₂	Method 6

- ii. Observations of opacity shall be conducted during these emission tests in accordance with Method 9 and the results of these observations included in the reports for emission testing.
- iii. For this emission testing, test notifications and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.

7.3.9 Monitoring Requirements

- a. For the coke by-product recovery plant, when equipment operated in benzene service is tested for compliance with or monitored for no detectable emissions, the owner or operator shall comply with the following requirements [40 CFR 61.245(c)]:
- i. The requirements of 40 CFR 61.245 (b) (1) through (4) shall apply.
- ii. The background level shall be determined, as set forth in Method 21.
- iii. The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21.

- iv. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- b. Alternatives procedures are not established for each exhauster, as provided by 40 CFR 61.135(e) through (g) and 40 CFR 61.136(d). Therefore, pursuant to 40 CFR 61.135(d), each exhauster shall be monitored quarterly to detect leaks 10,000 ppm or greater by the methods specified in 40 CFR 61.245(b).
- c. For the coke by-product recovery plant, the owner or operator shall monitor the connections and seals on each control system to determine if it is operating with no detectable emissions, using Method 21 (40 CFR Part 60, Appendix A) and procedures specified in 40 CFR 61.245(c), and shall visually inspect each source (including sealing materials) and the ductwork of the control system for evidence of visible defects such as gaps or tears. This monitoring and inspection shall be conducted on a semiannual basis and at any other time after the control system is repressurized with blanketing gas following removal of the cover or opening of the access hatch.
 - i. If an instrument reading indicates an organic chemical concentration more than 500 ppm above a background concentration, as measured by Method 21, a leak is detected.
 - ii. If visible defects such as gaps in sealing materials are observed during a visual inspection, a leak is detected.
 - iii. When a leak is detected, it shall be repaired by the Permittee as soon as practicable, but not later than 15 calendar days after it is detected.
 - iv. A first attempt at repair of any leak or visible defect shall be made by the Permittee no later than 5 calendar days after each leak is detected.
- d. Pursuant to 40 CFR Part 61.132(a), the Permittee shall operate and maintain Control Systems on the coke by-product plant in accordance with the work practices in 40 CFR Part 61 Subpart L, as specified below. This Control System consists of a Positive Pressure Gas Blanketing System supplied with clean coke oven gas controlling the light oil area and a Negative Pressure or Steam Blanketing System controlling tar, ammonia and liquor tanks.
 - i. The following procedures shall be conducted on the control system on a semiannual basis and after each time the control system is repressurized and the Permittee shall [40 CFR 61.132(b)]:

- A. Inspect the ductwork for evidence of visible defects such as gaps or tears.
- B. Monitor the connections and seals to determine if operating with no detectable emissions.
- ii. A maintenance inspection of the control system shall be conducted on an annual basis for evidence of system abnormalities such as blocked or plugged lines, sticking valves, plugged condensate traps and other maintenance defects that could result in abnormal system operation. The owner or operator shall make a first attempt at repair within 5 days, with repair within 15 days of detection [40 CFR 61.132(c)].
- e. COG flare

Pursuant to Sections 39.5(7)(a) and (d) of the Act, for the COG flare:

 - i. The Permittee shall either:
 - A. Install, operate and maintain instrumentation, with alarm, to confirm the presence of a flame at the flare tip; or
 - B. Monitor for the presence of a pilot flame using a thermocouple or other equivalent device to detect the presence of a flame; or
 - C. Verify, once per shift, the presence of a flame at the tip of the flare, and that the flare gas header has a positive pressure.
 - ii. The Permittee shall perform the following inspections of the flare:
 - A. An inspection of the ignition system on an annual basis;
 - B. A detailed maintenance and repair inspection during the period when the flare is out of service and/or idled.
- f. Monitoring requirements for COG established by FESOP 94120017, Permit 06070022 and Section 39.5(7)(a) of the Act:
 - i. The Permittee shall operate systems for monitoring the hydrogen sulfide (H₂S) content of the COG exiting the affected by-product plant and exiting the COG-DS.

The H₂S concentration shall be measured on a wet gas basis.

- ii. These H₂S monitoring systems shall be equipped with a strip chart recorder or disk storage and shall be capable of recording the H₂S content in grains per standard cubic feet.
- iii. These H₂S monitoring systems shall meet the applicable requirements of Performance Specification 7 of 40 CFR 60, Appendix B. These H₂S monitoring systems shall be operated, and data collected, reduced and maintained, in accordance with the applicable requirements of 40 CFR 60.13 and 35 IAC Part 201 Subpart L.
- iv. The H₂S monitoring system for COG exiting the by-product plant shall comply with the following requirements for collection of data:
 - A. The system shall collect hourly average H₂S content data for at least 75% of the daily operating hours in which COG is not treated by the COG-DS (e.g., at 24 hours/day COG production, at least 18 hourly averages of H₂S content must be obtained). In the event that this minimum data requirement cannot be met by the H₂S monitoring system, the H₂S content data shall be supplemented or obtained by one of the following alternative methods.
 - I. H₂S determined by type of coal used during that period and previous recorded H₂S content when using this coal type. This method shall only be used for a maximum of 15 days per calendar year.
 - II. A manual sample of COG shall be taken daily and the H₂S content shall be determined by 40 CFR 60, Appendix A, Method 11, as adapted to measure higher ranges of H₂S. This value, or a value based on the mean of the daily values plus two standard deviations for the previous 90 days for which a reading was obtained, whichever is higher, shall be used. Should a coal blend change occur during the period this alternative method is being used, the mean value plus two standard deviations will be adjusted to reflect any potential change in the H₂S content from that of the previous coal blend.

- B. The system shall collect H₂S content data for at least 75% of the daily operating hours in which COG is treated by the COG-DS with this data being the average over at least 5 minutes in each such operating hour. In the event that this minimum data requirement cannot be met by the H₂S monitoring system or can only be met with manual cycling of the H₂S monitoring system for treated COG data shall be supplemented or obtained by one of the following alternative methods:
 - I. H₂S data as obtained by manual sampling and analysis at least one per day; or
 - II. H₂S data as obtained from the H₂S monitoring system for treated COG at least twice per day, at least 8 hours apart.
 - C. The alternative methods provided for in this condition shall only be used in the event of a malfunction or breakdown of the H₂S monitoring systems, i.e., not during periods when a monitoring system is functioning properly to collect valid data.
- v. These H₂S monitors shall be tested at least every 12 months in accordance with 40 CFR 60, Appendix B, Performance Specification 7. The results of these tests shall be sent to the IEPA's Division of Air Pollution, Control Permit Section and Regional Office within 14 days after summarizing of results. In addition, the results shall be maintained in accordance with the recordkeeping specified in this permit. For the H₂S monitoring system for COG exiting the by-product plant, this testing shall be conducted as follows:
- A. The H₂S content in grains per standard cubic foot of COG shall be determined using 40 CFR 60, Appendix A, Method 11 as adapted to measure higher ranges of H₂S.
 - B. The following revisions shall be made to Method 11 to allow the measuring of higher ranges of H₂S:
 - 1. Diluent air shall mean air containing less than 0.5 ppm total sulfur compounds and less than 10 ppm each of moisture and hydrocarbons.

2. 7.0 Procedure - Located after the sampling valve, there will be a gas mixing box with a metered supply of (heated) diluent air. This metered supply of diluent air will be introduced prior to sampling and adjusted so that the final dilution of the sample will be 1:20 (i.e., 0.05 liters/min of sample to 0.95 liters/min of dilution air).
3. 9.4 - V_m = Volume of gas sample through the gas meter (meter conditions), liters/20.

$V_{m_{STD}}$ = (Corrected) volume at standard conditions of gas sampled through the dry gas meter. (Standard Liters).

- vi. In the event of malfunction or breakdown of the H₂S monitoring systems, the Permittee shall repair and recalibrate the meter or monitoring systems as soon as practicable but no later than 10 days after the malfunction or breakdown is detected, unless prior Illinois EPA approval is obtained by submitting adequate justification to the Illinois EPA detailing the reasons for delay. Records of repair and recalibration must be maintained in accordance with the recordkeeping requirements of this permit. This condition does not relieve the Permittee of the minimum data collection requirements of this permit.
- g. The Permittee shall equip the thermal oxidizer in the COG-DS with a continuous monitoring system, which shall be calibrated, maintained, and operated at all times the COG-DS thermal oxidizer is in operation, to monitor the combustion chamber temperature of the thermal oxidizer [Sections 39.5(7) (a) and (d) of the Act].
- h. The Permittee shall sample and analyze the COG exiting the byproduct plant and treated COG from the COG-DS for PM content using appropriate ASTM methods or other comparable methodology. These measurements shall be conducted at least annually. The records for this activity shall also include data for the H₂S content of COG at the time of sampling [Sections 39.5.7(a) and (d) of the Act].

7.3.10 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected by-product recovery plant, the COG-DS and COG flare, pursuant to Sections 39.5(7) (a) and (e) of the Act:

- a. 40 CFR Part 61 Subpart L (40 CFR 61.138):

- i. The following information pertaining to the design of control equipment installed to comply with 40 CFR 61.132 through 61.134 shall be recorded and kept in a readily accessible location:
 - A. Detailed schematics, design specifications, and piping and instrumentation diagrams.
 - B. The dates and descriptions of any changes in the design specifications.
 - ii. The following information pertaining to sources subject to 40 CFR 61.132 and sources subject to 40 CFR 61.133 shall be recorded and maintained for 2 years following each semiannual (and other) inspection and each annual maintenance inspection:
 - A. The date of the inspection and the name of the inspector.
 - B. A brief description of each visible defect in the source or control equipment and the method and date of repair of the defect.
 - C. The presence of a leak, as measured using the method described in 40 CFR 61.245(c). The record shall include the date of attempted and actual repair and method of repair of the leak.
 - D. A brief description of any system abnormalities found during the annual maintenance inspection, the repairs made, the date of attempted repair, and the date of actual repair.
- b. 40 CFR Part 61 Subpart FF (40 CFR 61.356):
- i. Each owner or operator of a facility subject to the provisions of Subpart FF shall comply with the recordkeeping requirements of 40 CFR 61.356. Each record shall be maintained in a readily accessible location at the facility site for a period not less than two years from the date the information is recorded unless otherwise specified [40 CFR 61.356(a)].
 - ii. Each owner or operator shall maintain records that identify each waste stream at the facility subject to Subpart FF, and indicate whether or not the waste stream is controlled for benzene emissions in accordance with this subpart. In addition the owner or operator shall maintain the following records [40 CFR 61.356(b)]:

- A. For each waste stream not controlled for benzene emissions in accordance with Subpart FF, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.
- B. For each waste stream exempt from 40 CFR 61.342(c)(1) in accordance with 40 CFR 61.342(c)(3), the records shall include:
 - 1. All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters (0.005 gallons) per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr (11 ton/yr) in accordance with 40 CFR 61.342(c)(3)(i), or
 - 2. All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with 40 CFR 61.342(c)(3)(ii).
- C. For each facility where process wastewater streams are controlled for benzene emissions in accordance with 40 CFR 61.342(d), the records shall include for each treated process wastewater stream all measurements, calculations, and other documentation used to determine the annual benzene quantity in the process wastewater stream exiting the treatment process.
- D. For each facility where waste streams are controlled for benzene emissions in accordance with 40 CFR 61.342(e), the records shall include for each waste stream all measurements, including the locations of the measurements, calculations, and other documentation used to determine that the total benzene quantity does not exceed 6.0 Mg/yr (6.6 ton/yr).
- E. For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with 40 CFR

61.355(b) (5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with 40 CFR 61.355(b) (5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with 40 CFR 61.355(a) (1) (iii).

- F. For each facility where wastewater streams are controlled for benzene emissions in accordance with 40 CFR 61.348(b) (2), the records shall include all measurements, calculations, and other documentation used to determine the annual benzene content of the waste streams and the total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units.
- iii. An owner or operator shall maintain a record for each visual inspection required by 40 CFR 61.343 through 61.347 that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed [40 CFR 61.356(g)].
- c. 40 CFR Part 61 Subpart V (40 CFR 61.246):
 - i. A. Each owner or operator subject to the provisions of Subpart V shall comply with the recordkeeping requirements of 40 CFR 61.246 [40 CFR 61.246(a) (1)].
 - B. An owner or operator of more than one process unit subject to the provisions of Subpart V may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by each process unit [40 CFR 61.246(a) (2)].
 - ii. When each leak is detected as specified in 40 CFR 61.242-2, 61.242-3, 61.242-7, 61.242-8, and 61.135,

the following requirements apply to the Permittee [40 CFR 61.246(b)]:

- A. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - B. The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 61.242-7(c) and no leak has been detected during those 2 months.
 - C. The identification on equipment, except on a valve, may be removed after it has been repaired.
- iii. When each leak is detected as specified in 40 CFR 61.242-2, 61.242-3, 61.242-7, 61.242-8, and 61.135, the following information shall be recorded by the Permittee in a log and shall be kept for 2 years in a readily accessible location [40 CFR 61.246(c)]:
- A. The instrument and operator identification numbers and the equipment identification number.
 - B. The date the leak was detected and the dates of each attempt to repair the leak.
 - C. Repair methods applied in each attempt to repair the leak.
 - D. Above 10,000 if the maximum instrument reading measured by the methods specified in 40 CFR 61.245(a) after each repair attempt is equal to or greater than 10,000 ppm.
 - E. Repair delayed and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - F. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
 - G. The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.
 - H. Dates of process unit shutdowns that occur while the equipment is unrepaired.

- I. The date of successful repair of the leak.
- iv. The following information pertaining to all equipment to which a standard applies shall be recorded in a log that is kept in a readily accessible location by the Permittee [40 CFR 61.246(e)]:
 - A. A list of identification numbers for equipment (except welded fittings) subject to the requirements of Subpart V.
 - B.
 - 1. A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background.
 - 2. The designation of this equipment for no detectable emissions shall be signed by the owner or operator.
 - C. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR 61.242-4(a).
 - D.
 - 1. The dates of each compliance test required in 40 CFR 61.242-2(e), 61.242-3(i), 61.242-4, 61.242-7(f), and 61.135(g).
 - 2. The background level measured during each compliance test.
 - 3. The maximum instrument reading measured at the equipment during each compliance test.
 - E. A list of identification numbers for equipment in vacuum service.
- v. The following information pertaining to all valves subject to the requirements of 40 CFR 61.242-7(g) and (h) and to all pumps subject to the requirements of 40 CFR 61.242-2(g) shall be recorded by the Permittee in a log that is kept in a readily accessible location [40 CFR 61.246(f)]:
 - A. A list of identification numbers for valves and pumps that are designated as unsafe to monitor, an explanation for each valve or pump stating why the valve or pump is unsafe to monitor, and the plan for monitoring each valve or pump.

- B. A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.
- vi. The following information shall be recorded by the Permittee for valves complying with 40 CFR 61.243-2 [40 CFR 61.246(g)]:
 - A. A schedule of monitoring.
 - B. The percent of valves found leaking during each monitoring period.
- vii. The following information shall be recorded in a log by the Permittee that is kept in a readily accessible location [40 CFR 61.246(h)]:
 - A. Design criterion required in 40 CFR 61.242-2(d)(5), 61.242-3(e)(2), and 61.135(e)(4) and an explanation of the design criterion; and
 - B. Any changes to this criterion and the reasons for the changes.
- viii. The following information shall be recorded in a log by the Permittee that is kept in a readily accessible location for use in determining exemptions as provided in the applicability section of this subpart and other specific Subparts [40 CFR 61.246(i)]:
 - A. An analysis demonstrating the design capacity of the process unit, and
 - B. An analysis demonstrating that equipment is not in VHAP service.
- ix. Information and data used to demonstrate that a piece of equipment is not in VHAP service shall be recorded in a log by the Permittee that is kept in a readily accessible location [40 CFR 61.246(j)].
- d. The Permittee shall keep the following records for the COG flare [Section 39.5(7)(e) of the Act]:
 - i. Records of inspections and maintenance or repair activities conducted pursuant to Condition 7.3.9(e)(ii).
 - ii. H₂S content in the COG with supporting calculations of SO₂ emissions from the flare.
- e. The following records for the COG-DS pursuant to Permit 06070022:

- i. Temperature monitoring system for thermal oxidizer on the Claus Sulfur Recovery Unit:
 - A. Recorded data.
 - B. A log of operating time for the control system or devices, monitoring system, and the coke oven byproducts plant.
 - C. A maintenance log for the oxidizer and monitoring device detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- ii. Operating Records for the Packed Tower Amine Unit:
 - A. Amine temperature leaving the unit (°F).
 - B. Amine flow (gallons/minute).
 - C. COG flow into or out of the unit.
- iii. Logs:
 - A. Operating logs.
 - B. Maintenance logs detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- iv. Production Records:
 - A. COG production during periods of time when the COG-DS is operating (mmscf/month and mmscf/year).
 - B. COG production during periods of time when the COG-DS is not operating (mmscf/month and mmscf/year).
- v. Records of H₂S content in COG, with supporting data and calculations:
 - A. H₂S content of COG exiting the by-product plant, daily average.
 - B. H₂S content of COG, annual average.
 - C. H₂S content of treated COG, excluding outages, startup, shutdown, and upsets, monthly average.
- vi. Emission Records for the COG Desulfurization System (Claus Sulfur Recovery Unit) [Sections 39.5.7(a) and (d) of the Act]

- A. A file containing the emission factors used by the Permittee to determine emissions of PM₁₀ and SO₂ from the Claus Sulfur Recovery Unit, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of this unit do not understate actual emissions. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
- B. Engineering calculations for typical and maximum hourly PM₁₀ and SO₂ emissions (lbs/hour) Claus Sulfur Recovery Unit, with supporting documentation.
- C. Records for the concentration of SO₂ and H₂S (percent by volume) in the tail gas of the Claus Sulfur Recovery Unit, which is sent to the thermal oxidizer, as measured by process instrumentation.
- D. Records for any periods of operation of the Claus Sulfur Recovery Unit that are not otherwise addressed in the required records during which the established emission factor in Condition 7.3.10(e)(vi)(A) would understate actual emissions of this unit, with description of the period of operation and an estimate of the additional emissions during such period that would not be accounted for by the established factor, with supporting explanation and calculations.
- D. Records for any periods of operation of the Claus Sulfur Recovery Unit that are not otherwise addressed in the required records during which the established emission rate in Condition 7.3.10(e)(vi)(B) would understate the actual emissions of this unit, with description of the period of operation, including date, time and duration, explanation, and an estimate of the additional emissions during such period that would not be accounted for by the established rate, with supporting explanation and calculations.
- F. Records for the annual PM₁₀ and SO₂ emissions of the Claus Sulfur Recovery Unit for comparison to the limits in Conditions 7.3.7(e), with supporting calculations.

Note: Records for PM₁₀ and SO₂ emissions associated with combustion of COG at the facility are contained in Condition 5.9.1(e).

- f. The following records for the H₂S monitoring system for COG exiting the by-product plant, pursuant to FESOP 94120017:
- i. The hourly average, 3-hour average and daily average H₂S content of the COG in grains per standard cubic foot.
 - ii. The H₂S monitor strip chart or disk storage.
 - iii. Thousand standard cubic feet of COG used per 3-hours for slab reheat furnaces 1-3 and ladle drying preheaters and per day for each unit operating group.
 - iv. The calibration, maintenance and repair of the H₂S monitor used in compliance calculations.
- g. Other Records
- i. Records of the amount of raw coke oven gas being received from the coke ovens (scf/mo and acf/yr).
 - ii. Records of the following by-products being produced:
 - A. Clean coke oven gas (scf/mo and scf/yr);
 - B. Light oil (gal/mo and gal/yr); and
 - C. Tar (ton/mo and ton/yr).
 - iii. If the Permittee operates under manufacturer's specifications or manufacturer's instructions, such manufacturer's documentation shall be kept at the source as part of the required records.
 - iv. Records of annual benzene waste generated on site (tons/yr).
 - v. Annual emissions of VOM from the affected by-product recovery plant.
- h. Records for Malfunctions or Breakdowns
- Pursuant to 35 IAC 201.263, the Permittee shall maintain records of continued operation of the affected COG flare as addressed by Condition 7.3.5 during malfunctions or breakdowns, which at a minimum, shall include the following records. The preparation of these records shall be completed within 45 days of an incident, unless the Permittee conducts a root cause analysis for the incident, in which case the preparation of these records, other than

the root cause analysis, shall be completed within 120 days of the incident.

- i. Date, time and duration of the incident.
- ii. A detailed description of the incident, including:
 - A. A chronology of significant events during and leading up to the incident.
 - B. Relevant operating data for the unit, including information such as operator log entries and directives provided by management during the incident.
 - C. The measures taken to reduce the quantity of emissions and the duration of the incident including the resources utilized to address the incident.
 - D. The magnitude of emissions during the incident.
- iii. An explanation why continued operation of an affected COG flare was necessary to prevent personnel injury or prevent equipment damage.
- iv. A discussion of the cause(s) or probable cause(s) of the incident including the following:
 - A. Whether the incident was sudden, unavoidable, or preventable, including:
 1. Why the equipment design did not prevent the incident;
 2. Why better maintenance could not have avoided the incident;
 3. Why better operating practices could not have avoided the incident; and
 4. Why there was no advance indication for the incident.
 - B. Whether the incident stemmed from any activity or event that could have been foreseen, avoided or planned for.
 - C. Whether the incident was or is part of a recurring pattern indicative of inadequate design, operation or maintenance.
- v. A description of any steps taken or to be taken to prevent similar future incidents or reduce their frequency and severity.

- vi. As an alternative to keeping the records required by Condition 7.3.10(h) (iv), the Permittee may perform a root cause analysis. For this purpose, a root cause analysis is an analysis whose purpose is to determine, correct and eliminate the primary causes of the incident and the excess emissions resulting there from. If the Permittee performs a root cause analysis method that would define the problem, define all causal relationships, provide a causal path to the root cause, delineate the evidence, and provide solutions to prevent a recurrence. Such an analysis shall be completed within one year of the incident.

7.3.11 Reporting Requirements

The Permittee shall submit the following reports pursuant to Section 39.5(7) (a) and (c) of the Act:

- a. 40 CFR 61 Subpart L (40 CFR 61.138):
 - i. A report shall be submitted to the Illinois EPA semiannually starting 6 months after the initial reports required in 40 CFR 61.138(e) and 40 CFR 61.10, which includes the following information [40 CFR 61.138(f)]:
 - A. For sources subject to 40 CFR 61.132 and sources subject to 40 CFR 61.133:
 1. A brief description of any visible defect in the source or ductwork;
 2. The number of leaks detected and repaired; and
 3. A brief description of any system abnormalities found during each annual maintenance inspection that occurred in the reporting period and the repairs made.
 - B. For equipment in benzene service subject to 40 CFR 61.135(a), information required by 40 CFR 61.247(b).
 - C. For each exhauster subject to 40 CFR 61.135 for each quarter during the semiannual reporting period:
 1. The number of exhausters for which leaks were detected as described in 40 CFR 61.135(d) and (e) (5);

2. The number of exhausters for which leaks were repaired as required in 40 CFR 61.135(d) and (e) (6); and
 3. The results of performance tests to determine compliance with 40 CFR 61.135(g) conducted within the semiannual reporting period.
- D. A statement signed by the owner or operator stating whether all provisions of 40 CFR part 61, subpart L, have been fulfilled during the semiannual reporting period.
- b. 40 CFR 61 Subpart V (40 CFR 61.247):
- i. An owner or operator of any piece of equipment to which Subpart V applies shall submit a statement in writing notifying the Illinois EPA that the requirements of 40 CFR 61.242, 61.245, 61.246, and 61.247 are being implemented [40 CFR 61.247(a) (1)].
 - ii. A report shall be submitted to the Illinois EPA semiannually starting 6 months after the initial report required in 40 CFR 61.247(a), that includes the following information [40 CFR 61.247(b)]:
 - A. Process unit identification.
 - B. For each month during the semiannual reporting period:
 1. Number of valves for which leaks were detected as described in 40 CFR 61.242-7(b) of 61.243-2.
 2. Number of valves for which leaks were not repaired as required in 40 CFR 61.242-7(d).
 3. Number of pumps for which leaks were detected as described in 40 CFR 61.242-2(b) and (d) (6).
 4. Number of pumps for which leaks were not repaired as required in 40 CFR 61.242-2(c) and (d) (6).
 5. Number of compressors for which leaks were detected as described in 40 CFR 61.242-3(f).
 6. Number of compressors for which leaks were not repaired as required in 40 CFR 61.242-3(g).

7. The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.
 - C. Dates of process unit shutdowns which occurred within the semiannual reporting period.
 - D. Revisions to items reported according to 40 CFR 61.247(a) if changes have occurred since the initial report or subsequent revisions to the initial report.
 - E. The results of all performance tests and monitoring to determine compliance with no detectable emissions and with 40 CFR 61.243-1 and 61.243-2 conducted within the semiannual reporting period.
- c. 40 CFR 61 Subpart FF (40 CFR 61.357)
- i. If the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall submit to the Illinois EPA and the Administrator a report that updates the information listed in 40 CFR 61.357(a) (1) through (a) (3) whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more [40 CFR 61.357(b)].
 - ii. If the total annual benzene quantity from facility waste is less than 10 Mg/yr (11 ton/yr) but is equal to or greater than 1 Mg/yr (1.1 ton/yr) then the owner or operator shall submit to the Illinois EPA and the Administrator a report that updates the information listed in 40 CFR 61.357 (a) (1) through (a) (3). The report shall be submitted annually and whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr (11 ton/yr) or more. If the information in the annual report required by 40 CFR 61.357 (a) (1) through (a) (3) is not changed in the following year, the owner or operator may submit a statement to that effect [40 CFR 61.357(c)].
 - iii. If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr), then the owner or operator shall submit to the Illinois EPA and the Administrator reports described in 40 CFR 61.357(d) [40 CFR 61.357(d)].

- d. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected coke by-product recovery plant, COG system and COG flare from applicable requirements, unless a NESHAP standard specifies a different timeframe, as follows:
 - A. Requirements in Condition 7.3.3(e), (f) and (g).
 - B. Requirements in Condition 7.3.6.
 - C. Requirements in Condition 7.3.7.
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- iii. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- iv. All required deviation reports described in Condition 7.3.11(d) above shall contain the following information:
 - A. Date, time and duration of the deviation;
 - B. Description of the deviation;
 - C. Probable cause of the deviation; and
 - D. Any corrective action or preventive measures taken.
- e. Reporting on the State malfunction and breakdown authorization shall be performed in accordance with Condition 5.10.5-2.
- f. Reporting on the Federal SSM authorization shall be performed in accordance with Condition 5.10.5-3.

7.3.12 Operational Flexibility/Anticipated Operating Scenarios

The following requirements established by Construction Permit 09030019 shall be followed during idling of the affected coke batteries and coke by-product recovery plant:

This permit authorizes operation of adsorber systems to control emissions from the equipment in the Coke By-Product Recovery Plant, as an alternative to the various blanketing systems on the by-products plant during idling or other interruptions in

these blanketing systems, as addressed by Permit 09030019, subject to the following requirements:

- a. Each system will use a canister-type vessel containing activated carbon to "filter" organic material from the exhaust from the units. The adsorber vessels will not be regenerated on-site but replaced when the capacity of the vessel to adsorb organic material is approached.
- b. Various equipment or affected operations at the by-products plant, including processing vessels such as tar decanters, light oil decanters and storage tanks which are subject to NESHAP (the associated operations).
 - i. The affected adsorbers shall be designed and operated to achieve at least 98 percent control of emissions of benzene from the associated operations, as required by 40 CFR 61.139(a), with compliance determined in accordance with applicable requirements of 40 CFR 61.139(b) and (h).
 - ii. As the by-products plant is subject to 40 CFR 61, Subpart L, the Permittee will continue to be subject to applicable requirements of 40 CFR 61, Subpart A, General Provisions for associated operations, including 40 CFR 61.12(c), which requires that the Permittee maintain and operate these operations, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions.
 - iii.
 - A. The Permittee shall have access to sampling equipment and other capabilities necessary to conduct monitoring for the affected adsorbers, i.e., operational measurements for the concentration of benzene or hydrocarbons in the exhaust from the adsorbers.
 - B. While the adsorbers serve to control emissions from the associated operations, the Permittee shall conduct applicable monitoring for the affected adsorbers required by 40 CFR 61, Subparts A and L, including 40 CFR 61.139(e).
 - iv. For the associated operations while controlled by the adsorbers, the Permittee shall fulfill applicable recordkeeping requirements of 40 CFR 61, Subparts A and L, including 40 CFR 61.139(i).
 - v. The Permittee shall keep a file for each adsorber system that contains documentation for the adsorption capacity of the adsorption vessel and engineering calculations for the rate at which the associated operations would generate emissions and the expected operating life of an adsorption vessel in days.

- vi. The operating records that the Permittee maintains for the associated operations and adsorbers shall include the following information, in addition to other required information:
 - A. The date that an adsorber vessel is switched out, with reason and measured hydrocarbon concentration in the exhaust prior to switchout.
 - B. For periods when the adsorbers operated properly, i.e., in accordance with Condition 7.3.12(a), relevant information to generally confirm proper operation.
 - C. For periods when an adsorber did not operate properly, identification of each such period and the associated operations that were operating, with detailed information describing:
 - 1) The operation of the adsorber, including the monitored exhaust concentration;
 - 2) The potential consequences for additional emissions of organic material with an estimate of the additional emissions, with explanation;
 - 3) The actions taken to restore proper operation; and
 - 4) Any actions taken to prevent similar events in the future.
- vii. The maintenance records that the Permittee maintains for the associated operations and adsorbers shall include the following information, in addition to other required information:
 - A. Until the operations are idled, date and time that an inspection or maintenance/repair activity on the units was performed, with description of activity and name(s) of the responsible personnel.
 - B. While the associated operations are idled, date and time that an inspection or maintenance/repair activity for the preservation measures on the operations was performed, with description of activity and name(s) of the responsible personnel.
- viii. The Permittee shall fulfill applicable reporting requirements of 40 CFR 61, Subparts A and L, for the associated operations while they are controlled by the affected adsorbers.
- ix. The Permittee shall notify the Illinois EPA of the following events for the coke by-product plant:

- A. The date that existing control systems for the plant are shut off, within 15 days of such date. This report shall describe any difficulties that were encountered in the transition to control with the affected adsorbers, confirm the integrity of the ductwork of each affected adsorber, and include the results of initial measurements for the hydrocarbon concentrations in the exhaust from each affected adsorber, conducted in accordance with Condition 7.3.12(a).
- B. The date that operation of all adsorbers is no longer required by 40 CFR 61, Subpart L, within 30 days of such date. This report shall indicate the date when the emptying and cleaning of each group of the associated operations was completed, the current status of each affected adsorber (i.e., physically removed from the plant, scheduled to be removed, or left in place pending further developments), and the actions that are planned to maintain the condition and integrity of the affected associated operations while they are idle.

Note: During a period when the affected plant is idle, even if all associated operations are cleaned and emptied, the Permittee must continue to submit the routine semiannual compliance reports required by 40 CFR 61, Subpart L.

- C. The date that resumption of normal operation of the by-product plant is planned, at least 10 days prior to such date. This report shall generally describe the sequence of events that will accompany resumption of operation of the existing control systems for the plant.

7.3.13 Compliance Procedures

For the affected coke by-product recovery plant, COG system and COG flare, compliance with Conditions 7.3.3 and 7.3.7 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.3 of this permit.

7.3.14 State-Only Conditions

State-only conditions are not being established.

7.4 Blast Furnaces

7.4.1 Description

Blast Furnaces and Casthouse:

Iron ore is converted to molten iron in the "A" and "B" Blast Furnaces. Iron ore, coke and a variety of fluxes (collectively called the burden) are charged into the top of the furnace, while heated air is blown up through the burden at a high velocity. Molten iron and slag accumulate in the bottom of the furnace, where a taphole is periodically drilled. The molten iron and slag pour out of the furnace into a trough, where the slag is separated from the iron. The iron moves down runners until it pours into torpedo cars. From here, the iron is taken to the Basic Oxygen Furnace (BOF) shop, where it is converted into steel. The slag travels down a separate runner and dumps into the slag pits. The molten slag is quenched with a mixture of water and potassium permanganate solution.

Charging of the Blast Furnace generates particulate matter emissions. Each furnace has a double-bell system to minimize emissions from charging.

Casthouse emissions consisting of particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and organic materials are generated during tapping of the furnace and the miscellaneous operations that take place within the casthouse structure. Emissions are controlled by the Casthouse Baghouse and the Iron Spout Baghouse.

Emissions may also be discharged from a blast furnace during startup, malfunctions and shutdowns for routine maintenance. Each furnace is equipped with bleeder valves which will relieve to the atmosphere if the furnace becomes over pressurized. This can occur during furnace slops when material in the furnace bridges forming a void and then collapses. Slips can cause over pressurization. In this condition, the stock in the furnace will bridge and cause a void to develop. The void will increase until the bridge collapses. Backdrafting of the blast furnaces is conducted to perform certain repairs, both routine and non-routine. Steam is utilized to draw furnace gases back through the tuyeres and out of backdraft stacks.

Blast Air Stoves:

The blast air stoves heat the blast air for the blast furnaces. Emissions from the stoves consist of particulate matter, sulfur dioxide, nitrogen oxides, and carbon monoxide generated as by-products of the combustion of Blast Furnace Gas (BFG) and Coke Oven Gas (COG). In addition, the blast furnaces can also use fuel oil in the event that other fuels are not available.

The byproduct gases from the blast furnaces are first cleaned in a BFG Pretreatment system with mechanical separation and water

wash to remove entrained dust and are then combusted in the stoves for the blast furnaces and other units at the source. BFG is primarily made up of carbon monoxide. The heat generated by the combustion of these gases is used to heat the brick inside of the stoves. The air flow is switched and this stored heat is then transferred to the blast air that is blown into the blast furnaces as part of the iron making process. There are three stoves for each furnace, which enables a continuous supply of blast air to the blast furnace. Only two of the three stoves will burn at any given time. All three stoves are exhausted to a common stack.

Excess BFG is also used in the various other fuel combustion emission units at the source. BFG that cannot be used as fuel is flared in either BFG flare #1 or #2.

Note: This narrative description is for informational purposes only and is not enforceable.

7.4.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Blast Furnaces	• Blast Furnaces (A and B including charging and BFG pretreatment system)	Before 1972	None
	• Blast Furnace Casthouse (Tapping, Iron and Slag Runner, Slag Pits and Torpedo Car Loading Emissions From A and B Furnaces)		Casthouse Baghouse; and Iron Spout Baghouse;
	• Blast Furnace Gas Flare #1		None
	• (6) Blast Air Stoves (BFG, COG and natural Gas) (3 per each furnace)	Before 1972	None
	• Blast Furnace Gas Flare #2	2008	None
	• Slag pits	Before 1972	None

7.4.3 Applicable Provisions

- a. The "affected blast furnace processes" for the purpose of these unit-specific conditions, are the emission units and activities described in Conditions 7.4.1 and 7.4.2.
- b. Pursuant to 35 IAC 212.445, emissions of PM shall not exceed the following limits:

- i. Uncaptured particulate matter from any opening in a blast furnace cast house shall not exceed 20 percent opacity on a six (6) minute rolling average basis beginning from initiation of the opening of the tap hole up to the point where the iron and slag stops flowing in the trough. Opacity observations shall be taken in accordance with the procedures of 40 CFR 60, Appendix A, Method 9 [35 IAC 212.445(a)].
- ii.
 - A. Particulate matter emissions from control equipment used to collect any of the emissions from the tap hole, trough, iron or slag runners or iron or slag spouts shall not exceed 0.023 g/dscm (0.010 gr/dscf). Compliance with this standard shall be determined in accordance with the procedures set out in 40 CFR 60, Appendix A, Methods 1 through 5, incorporated by reference in 35 IAC 212.113 and shall be based on the duration of a cast. For this purpose, a cast is defined as the initiation of the opening of the tap hole up to the point where the iron and slag stop flowing through the trough consistent with 35 IAC 212.445(a) (i) [35 IAC 212.445(b) (1)].
 - B. The opacity of emissions from control equipment used to collect any of the particulate matter emissions from the tap hole, trough, iron or slag runners or iron or slag spouts shall not exceed 10 percent on a six (6) minute rolling average basis [35 IAC 212.445(b) (2)].
- c. Pursuant to 35 IAC 214.301, the affected blast furnace processes shall comply with the following: no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.
- d. The affected blast furnace processes other than the cast house are subject to 35 IAC 212.123(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.
- e. Pursuant to 40 CFR 63.7790(a) and Paragraph 7 of Table 1, of 40 CFR 63 Subpart FFFFFF, the emissions shall not exceed the following limits from each casthouse at an existing blast furnace:

- i. Particulate matter emissions from a control device shall not exceed 0.01 gr/dscf; and
 - ii. Any secondary emissions that exit any opening in the casthouse or structure housing the blast furnace shall not exceed opacity greater than 20 percent (6 minute average).
- f. Pursuant to 40 CFR 63.7790(b)(1), the Permittee must operate each capture system applied to emissions from blast furnace casthouse at or above the lowest value or settings established for the operating limits in the Permittee's operation and maintenance plan.
 - g. Pursuant to 35 IAC 212.316(f), uncaptured particulate matter emissions from blast furnace charging shall not exceed opacity of 20 percent.
 - h. Pursuant to 35 IAC 212.458(b)(7) and (c), blast furnace stoves shall comply with the following: No person shall cause or allow emissions of PM₁₀ into the atmosphere to exceed 22.9 mg/scm (0.01 gr/scf) during any one hour period, provided that this limit shall not apply if there are no visible emissions, except if a stack test is performed, the absence of visible emissions is not a defense to a finding violation.

7.4.4 Non-Applicability of Regulations of Concern

- a. The emission limitations of 35 IAC 212.324 are not applicable to any affected blast furnace processes that are subject to a specific emissions standard or limitation contained in 35 IAC Part 212 Subpart R, Primary and Fabricated Metal Products and Machinery Manufacture, pursuant to 35 IAC 212.324 (a)(3).
- b. The affected blast furnace processes are not subject to 35 IAC 212.321 and 35 IAC 212.322, pursuant 35 IAC 212.441, which provides that, except where noted, 35 IAC 212.321 and 212.322 shall not apply to the steel manufacturing processes subject to 35 IAC 212.442 through 35 IAC 212.452.
- c. This permit is issued based on the affected blast furnace processes not being subject to the applicable requirements of 35 IAC 219.301 because the affected processes do not emit photochemically reactive organic material as defined in 35 IAC 211.4690.
- d. The affected blast furnace processes are not subject to 35 IAC 216.121 because the affected blast furnace processes are not the fuel combustion emission sources, as defined 35 IAC 211.2470.
- e. Pursuant to 40 CFR 63.7491(g), the Blast Furnace Stoves are not subject to any applicable requirements in 40 CFR Part

63, Subpart DDDDD, NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters.

7.4.5-1 Work Practices: Operation and Maintenance Plan (40 CFR 63.7800)

- a. As required by 40 CFR 63.6(e)(1)(i), the Permittee shall always operate and maintain the affected blast furnace processes that are subject 40 CFR 63 Subpart FFFFF, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 CFR 63 Subpart FFFFF.
- b. The Permittee shall prepare and operate at all times each capture system or control device according to a written operation and maintenance plan for affected blast furnace casthouse. Each written operation and maintenance plan shall address the following elements:
 - i. Monthly inspections of the equipment that is important to the performance of the total capture system (e.g., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan also must include requirements to repair any defect or deficiency in the capture system before the next scheduled inspection.
 - ii. Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.
 - iii. Operating limits for each capture system applied to emissions from a blast furnace casthouse. The Permittee shall establish the operating limits according to the following requirements in 40 CFR 63.7800(b)(3)(i) through (iii):
 - A. Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, the Permittee shall use appropriate operating limit parameters that indicate the level of the ventilation draft and the damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations.

Appropriate operating limit parameters for ventilation draft include, but are not limited to, volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure.

- B. For each operating limit parameter selected as described above, the Permittee shall designate the value or setting for the parameter at which the capture system operates during the process operation. If the operation allows for more than one process to be operating simultaneously, the Permittee shall designate the value or setting for the parameter at which the capture system operates during each possible configuration that the source may operate.
 - C. Include documentation in the plan to support selection of the operating limits established for the capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why the Permittee chose the parameter, a description of the method used to monitor the parameter according to the requirements of 40 CFR 63.7830(a), and the data used to set the value or setting for the parameter for each process configurations.
- iv. Pursuant to 40 CFR 63.7800(b)(4), corrective action procedures for baghouses equipped with bag leak detection systems. In the event a bag leak detection system alarm is triggered, the Permittee shall initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action. Corrective actions may include, but are not limited to:
- A. Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions [40 CFR 63.7800(b)(4)(i)].
 - B. Sealing off defective bags or filter media [40 CFR 63.7800(b)(4)(ii)].

- C. Replacing defective bags or filter media or otherwise repairing the control device [40 CFR 63.7800(b)(4)(iii)].
- D. Sealing off a defective baghouse compartment [40 CFR 63.7800(b)(4)(iv)].
- E. Cleaning the bag leak detection system probe, or otherwise repair the bag leak detection system [40 CFR 63.7800(b)(4)(v)].
- F. Shutting down the process producing the particulate emissions [40 CFR 63.7800(b)(4)(vi)].

7.4.5-2 Work Practices: Startup, Shutdown and Malfunction

- a. Provisions Related to 40 CFR 63, Subpart FFFFFF
 - i. Pursuant to 40 CFR 63.7810, the Permittee must be in compliance with the emission limitations and operation and maintenance requirements in 40 CFR 63 Subpart FFFFFF at all times, except during periods of startup, shutdown and malfunction as defined in 40 CFR 63.2
 - ii. Pursuant to 40 CFR 63.7810(c), the Permittee shall develop a written startup, shutdown, and malfunction plan for the affected blast furnaces and casthouses according to the provisions established in 40 CFR 63.6(e)(3).
 - iii. Pursuant to 40 CFR 63.7835, consistent with 40 CFR 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if the Permittee demonstrates that it was operating in accordance with 40 CFR 63.6(e)(1).
 - iv. The Permittee shall fulfill the applicable reporting requirements identified in 40 CFR 63.10(d) (Condition 5.10.5(b)) and 40 CFR 63.7841(b)(4).
 - v. The Permittee shall keep records in accordance with 40 CFR 63.7842(a)(2) related to startup, shutdown and malfunction.
- b. Startup and Malfunction/Breakdown Authorizations
 - i. Malfunction and Breakdown, pursuant to 201.149 and Part 201, Subpart I

- A. Subject to the following terms and conditions, the Permittee is authorized to continue operation of the affected blast furnace processes in excess of the applicable state standards in 35 IAC 212.445(b)(1) in the event of a malfunction or breakdown. This shall include blast furnace over pressurization, slips, use of auxiliary tap-holes, and back-drafting associated with periods of malfunction and breakdown.

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally explaining why such continued operation would be required to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns.

- B. This authorization only allows such continued operation as necessary to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.
- C. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall repair the affected emission/process units and/or re-establish applicable control practices.
- D. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.4.9(e) and 5.10.5-2, respectively. For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume.
- E. Following notification to the Illinois EPA (see Condition 5.10.5-2(a)(ii)) of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident.
- F. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the

Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

ii. Startup, pursuant to 35 IAC 201.149 and Part 201, Subpart I

- A. Subject to the following terms and conditions, for the affected blast furnace, the Permittee is authorized to violate the applicable standards of 35 IAC 212.445(b) (1), 212.445(b) (2) and 35 IAC 214.301 during startup.

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally describing the efforts that will be used "...to minimize startup emissions, duration of individual starts, and frequency of startups".

- B. This authorization does not relieve the Permittee from the continuing obligation to demonstrate that all reasonable efforts are made to minimize startup emissions, duration of individual startups and frequency of startups.
- C. The Permittee shall follow the written startup, shutdown, and malfunction plan for the affected blast furnace processes prepared pursuant to 40 CFR 63.6(e) (3) and Condition 7.4.5-2. In addition, the Permittee shall also review the operating condition of the affected blast furnace process prior to initiating startup.
- D. The Permittee shall fulfill applicable recordkeeping requirements of Condition 7.4.9(d).
- E. The Permittee shall fulfill applicable reporting requirements of Condition 5.10.5-1.
- F. As provided by 35 IAC 201.265, an authorization in a permit for excess emissions during startup does not shield a Permittee from enforcement for any violation of applicable emission standard(s) that occurs during startup and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.4.5-3 Work Practices from State Permits

- a. Except during periods of runner maintenance, the hot metal runners and the short slag runner shall be covered with permanent type runner covers [72080034, 72080036, T1].
- b. Water spraying of the slag for the purpose of cooling and minimizing slag load-out emissions will take place after completion of the slagging operation and prior to slag-loadout [85030039, T1].
- c. BFG flare #1 shall be operated with no visible emissions as determined by USEPA Method 22, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours [0607023, T1].
- d. Requirements for BFG Flare #2 from Permit 06070023:
 - i. BFG flare #2 shall be operated to comply with the following equipment work practices [T1]:
 - A. BFG flare #2 shall be operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
 - B. BFG flare #2 shall be operated with a flame present at all times.
 - ii. Emissions of PM and PM₁₀ from BFG flare #2 shall be controlled by the existing BFG pretreatment system, which entails treatment by dust catchers and wet scrubbers [T1].
 - iii. BFG and natural gas shall be the only fuels combusted in BFG flare #2 [T1].

7.4.5-4 Other Work Practices

The following requirements are established pursuant to Section 39.5(7)(a) of the Act:

- a. The Permittee shall maintain the double-bell system of the blast furnaces in order to minimize emissions from furnace charging.
- b. The Permittee shall develop and implement operating practices plan for slag handling processing associated with the slag pits for minimizing emissions and keeping them below the levels established in Condition 7.4.6(e).

7.4.6 Production and Emission Limitations from Existing Permits

- a. i. 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 [72080034,7208036,95010001, T1]; and
- ii. Maximum amount of pellets charged shall not exceed 4,308,581 tons/yr [95010001, T1].
- b. Casthouse Baghouse emissions shall not exceed the following limits [95010001, T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton Iron)</u>	<u>Maximum Emissions (Tons/Yr)</u>
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

- c. Blast Furnace uncaptured fugitives emissions shall not exceed the following limits [95010001, T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton Iron)</u>	<u>Maximum Emissions (Tons/Yr)</u>
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

- d. Blast Furnace Charging emissions shall not exceed the following limits [95010001, T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton Pellets)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.0024	5.17
PM ₁₀	0.0024	5.17

- e. Slag Pits emissions shall not exceed the following limits [95010001, T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton Iron)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.00417	6.60
PM ₁₀	0.00417	6.60
SO ₂	0.0100	15.83

- f. Iron Spout Baghouse emissions shall not exceed the following limits [95010001, T1]:

<u>Pollutant</u>	<u>Emission Factors (Lbs/Ton Iron)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.02548	40.32
PM ₁₀	0.02548	40.32
SO ₂	0.0073	13.89

- g. Total emissions from blast furnace operations shall not exceed the following limits, tons/yr [95010001, T1]:

	<u>PM*</u>	<u>PM₁₀*</u>	<u>SO₂</u>	<u>NO_x</u>	<u>VOM</u>
Blast Furnace Operations	212	188	474	24	157

* Limit does not address the iron pellet screen (See Section 7.1)

- h. Compliance with the daily limit of Condition 7.4.6(a) (i) shall be determined from a monthly total of the relevant daily data divided by the number of days in the month [95010001].
- i. Compliance with the annual limits of Condition 7.4.6(a) (2) and Conditions 7.4.6(b) through (g) shall be determined based on a calendar year [95010001].
- j. Overlapping casting of "A" and "B" Blast Furnaces shall not exceed a casting rate of 6 tons per minute per furnace [72080034 and 7208036, T1].
- k. The PM content of the BFG burned at the facility shall not exceed 0.01 grains/dscf [06070023, T1].

7.4.7 Testing Requirements

- a. Blast furnace casthouse pursuant to NESHAP.

The Permittee shall comply with the following testing requirements pursuant to 40 CFR Part 63 Subpart FFFFF:

- i. Pursuant to 40 CFR 63.7821(c), for each emissions unit equipped with a baghouse, the Permittee must conduct performance tests no less frequently than once every five years.
- ii. Test methods for compliance demonstration with the emission limits for particulate matter [40 CFR 63.7822(b)]:

- A. Determine the concentration of particulate matter according to the following test methods in Appendix A to 40 CFR Part 60.
 - 1. Method 1 to select sampling port locations and the number of traverse points. Sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere.
 - 2. Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.
 - 3. Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.
 - 4. Method 4 to determine the moisture content of the stack gas.
 - 5. Method 5, 5D, or 17, as applicable, to determine the concentration of particulate matter (front half filterable catch only).
 - B. Collect a minimum sample volume of 60 dry standard cubic feet (dscf) of gas during each particulate matter test run. Three valid test runs are needed to comprise a performance test.
- iii. Test methods for compliance demonstration with the opacity limits [40 CFR 63.7823(b) and (c)]:
- A. The Permittee shall conduct each visible emissions performance test such that the opacity observations overlap with the performance test for particulate matter [40 CFR 63.7823(b)].
 - B. To determine compliance with the applicable opacity limit for a blast furnace casthouse, the Permittee shall:
 - 1. Use a certified observer to determine the opacity of emissions according to Method 9 in Appendix A to 40 CFR Part 60.
 - 2. Obtain a minimum of 30 6-minute block averages. For a blast furnace casthouse, the Permittee shall make observations during tapping of the furnace. Tapping begins when the furnace is opened, usually by creating a hole near the

bottom of the furnace, and ends when the hole is plugged.

b. Blast furnace casthouse.

The Permittee shall comply with the following testing requirements pursuant to Sections 39.5(7)(d) and (p) of the Act:

- i. For uncaptured emissions (roof monitor) or secondary emissions:
 - A. The Permittee shall have the opacity (6-minute average), of the exhaust of the building housing the blast furnace casthouse determined by a qualified observer in accordance with USEPA Method 9 while the affected blast furnace(s) are being tapped, as further specified below.
 - B. The duration of opacity observations for each test shall be at least 30 minutes unless no visible emissions are observed as determined by USEPA Method 22 or the average opacities for the first 12 minutes of observations conducted for the point of release that displays the greatest opacity, 6-minute average, are both no more than 10.0 percent.
 - C. 1. Observations of opacity shall be conducted on the following frequency unless absence of adequate daylight or weather conditions preclude scheduled observation, in which case, the next observations shall be conducted on the next day during which observations of opacity can properly be conducted in accordance with USEPA Method 9:
 - I. On a weekly basis (at least once every 7 operating days of the casthouse) except as provided below.
 - II. On a daily basis (at least 5 days out of 7 operating days of the casthouse) if the maximum opacity observed during any of the five previous observations was 18 percent or more, 6-minute average, continuing on a daily basis until the maximum opacities measured in five consecutive daily observations are all less than 18 percent, 6-minute average, at which time

observations on a weekly basis shall resume.

2. Upon written request by the Illinois EPA, additional opacity observations shall be conducted within five operating days for the casthouse from the date of the request by the Illinois EPA or on the date agreed upon by the Illinois EPA, whichever is later. For such observations conducted pursuant to a request from the Illinois EPA:
 - I. The Permittee shall notify the Illinois EPA at least 24 hours in advance of the date and time of these observations, in order to enable the Illinois EPA to witness the observations. This notification shall include the name and employer of the qualified observer(s).
 - II. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for observations.
 - III. The duration of these observations shall cover a complete heat or cycle of the affected blast furnace.
 - IV. The Permittee shall provide a copy of the current certification for the opacity observer and observer's readings to the Illinois EPA at the time of the observations, if the Illinois EPA personnel are present.
- D. The Permittee shall keep records for all opacity measurements for the casthouse made in accordance with USEPA Method 9 that the Permittee conducts or that are conducted at its behest by individuals who are qualified to make such observations. For each occasion on which such measurements are made, these records shall include the formal report for the measurements if conducted pursuant to Condition 7.4.7(b) (i) (2), or otherwise the identity of the observer, a description of the measurements that were made, the operating condition of the casthouse, the observed opacity, and copies of the raw data sheets for the measurements.

- ii. Emissions from control equipment [35 IAC 212.445(b)]:
 - A. Upon request from the Illinois EPA, compliance with emission limits of 35 IAC 212.445(b) (1) (see also Condition 7.4.3(b) (ii) (A)) shall be determined in accordance with the procedures set out in 40 CFR Part 60, Appendix A, Methods 1 through 5, incorporated by reference in 35 IAC 212.113, and shall be based on the arithmetic average of three runs. Calculations shall be based on the duration of a cast defined in 35 IAC 212.445(a) (1).
 - B. Upon request from the Illinois EPA, opacity readings, for verifying compliance with emission limit of 35 IAC 212.445(b) (2) (see also Condition 7.4.3(b) (ii) (B)), shall be taken in accordance with the observation procedures set out in 40 CFR part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113.
- c. Additional Emission Testing for the Casthouse Baghouse and the Iron Spout Baghouse, pursuant to Sections 39.5(7) (d) and (p) of the Act:
 - i. As part of the emission testing required by Condition 7.4.7(a), the Permittee shall also measure the SO₂, NO_x and VOM emissions from each baghouse.
 - ii. The following USEPA Test Methods shall be used for testing of emissions, unless another USEPA Test Method is approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
SO ₂	Method 6
NO _x	Method 7
VOM	Method 25
 - iii. For this emission testing, test notification and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.
- d. BFG Flares:

Pursuant to Sections 39.5(7) (d) and (p) of the Act, the Permittee shall conduct observations for each BFG flare for the presence of visible emissions and/or opacity, using USEPA Method 22 and 9, respectively. These observations shall be conducted on at least a monthly basis for each

flare. In addition, observations shall be coordinated with weather conditions so that at least two observations are made in each calendar year during elevated wind speed conditions, i.e., wind speed of at least 16 miles per hour. These observations shall be conducted by individual(s) certified to observe opacity by USEPA Method 9. The observer(s) shall initially conduct observations for visible emissions. If any visible emissions are observed, the observations shall continue for two hours or until the cumulative duration of visible emissions exceeds ten minutes, whichever occurs first. If any visible emissions are observed, observations for opacity shall also be conducted.

7.4.8 Monitoring Requirements

a. Monitoring requirements pursuant to 40 CFR 63.7830(a)

For each capture system subject to an operating limit in 40 CFR 63.7790(b)(1) established in the Permittee's capture system operation and maintenance plan, the Permittee must install, operate, and maintain a CPMS according to the following requirements:

Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, the Permittee shall make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

b. Monitoring requirements pursuant to 40 CFR 7830(b)(1)

The casthouse baghouse and iron spout baghouse shall each be equipped with a bag leak detection system which the Permittee shall operate and maintain according to the following requirements of 40 CFR 63.7831(f):

- i. The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less [40 CFR 63.7831(f)(1)].
- ii. The system must provide output of relative changes in particulate matter loadings [40 CFR 63.7831(f)(2)].
- iii. The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it can be heard by the appropriate plant personnel [40 CFR 63.7831(f)(3)].

- iv. Each system that works based on the triboelectric effect must be installed, operated, and maintained in a manner consistent with the guidance document, "Fabric Filter Bag Leak Detection Guidance," EPA-454/R-98-015, September 1997 [40 CFR 63.7831(f)(4)].
 - v. Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in your operation and maintenance plan. Do not increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless a responsible official certifies, in writing, that the baghouse has been inspected and found to be in good operating condition [40 CFR 63.7831(f)(6)].
- c. The Permittee shall conduct inspections of each baghouse at the specified frequencies according to the following requirements [40 CFR 63.7830(b)(4)]:
- i. Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the operation and maintenance plan manual.
 - ii. Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.
 - iii. Check the compressed air supply for pulse-jet baghouses each day.
 - iv. Monitor cleaning cycles to ensure proper operation using an appropriate methodology.
 - v. Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means.
 - vi. Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (knead or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.
 - vii. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

viii. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

- d. Site-specific monitoring plan requirements pursuant to 40 CFR 63.7831(a)

For each CPMS required in 40 CFR 63.7830, the Permittee shall develop and make available for inspection upon request by the Illinois EPA a site-specific monitoring plan that addresses the following requirements of 40 CFR 63.7831(a) (1) through (a) (6), including:

- i. Installation of the CPMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device) [40 CFR 63.7831(a) (1)];
 - ii. Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system [40 CFR 63.7831(a) (2);
 - iii. Performance evaluation procedures and acceptance criteria (e.g., calibrations) [40 CFR 63.7831(a) (3);
 - iv. Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c) (1), (c) (3), (c) (4) (ii), (c) (7), and (c) (8) [40 CFR 63.7831(a) (4);
 - v. Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d) [40 CFR 63.7831(a) (5); and
 - vi. Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 63.10(c), (e) (1), and (e) (2) (i) [40 CFR 63.7831(a) (6)].
- e. Pursuant to 40 CFR 63.7831(b), unless otherwise specified by the NESHAP, each CPMS must:
- i. Complete a minimum of one cycle of operation for each successive 15-minute period and collect a minimum of three of the required four data points to constitute a valid hour of data;
 - ii. Provide valid hourly data for at least 95 percent of every averaging period; and

- iii. Determine and record the hourly average of all recorded readings.
- f. Pursuant to 40 CFR 63.7831(c), the Permittee shall conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.
- g. Pursuant to 40 CFR 63.7831(d), the Permittee shall operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.
- h. Pursuant to 40 CFR 63.7790(b) (1) and 63.7800(b) (3) (i), the Permittee shall operate each capture system applied to emissions from a blast furnace casthouse at or above the lowest value or settings as established in the Permittee's operation and maintenance plan and which are currently as follows:
 - i. Casthouse Baghouse:
 - A. Motor amperage (total), both blast furnaces casting: 245 amps
 - B. Motor amperage, one blast furnace casting: 125 amps
 - ii. Iron Spout Baghouse:
 - A. Motor amperage, both blast furnaces casting (total): 245 amps
 - B. Motor amperage, one blast furnace casting: 131 amps
 - C. Blast Furnace A iron spout damper positions (3): 2 or less open all of the time; 3 open less than 5 minutes
 - D. Blast Furnace B tilting runner damper position: open
- i. Pursuant to 40 CFR 63.7824(c), the Permittee may change the operating limits for the capture system if the Permittee meets the following requirements:
 - i. Submits a written notification to the Illinois EPA of the Permittee's request to conduct a new performance test to revise the operating limit.

- ii. Conducts a performance test to demonstrate compliance with the applicable emission in Table 1 to 40 CFR 63 Subpart FFFFF.
 - iii. Establishes revised operating limits according to the applicable procedures in 40 CFR 63.7824(a).
- j. Monitoring and Collecting Data pursuant to 40 CFR 63.7832:
- i. Except for monitoring malfunctions, out-of-control periods as specified in 40 CFR 63.8(c)(7), associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), the Permittee shall monitor continuously (or collect data at all required intervals) at all times an affected source is operating.
 - ii. The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels or to fulfill a minimum data availability requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing compliance.
 - iii. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- k. Pursuant to the operation and maintenance requirements of the O/M plan required by 40 CFR 63.7800(b), the Permittee shall comply with following inspection procedures for the capture systems:
- Monthly inspections of the equipment that is important to the performance of the total capture system. This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). Repair of any defect or deficiency in the capture system shall be done before the next scheduled inspection.
- l. Inspection and Monitoring for BFG Flares [Section 39.5(7)(d) of the Act]
- i. For BFG flare #1, the Permittee shall either:

- A. Install, operate and maintain instrumentation, with alarm, to confirm the presence of a flame at the flare tip; or
 - B. Monitor the presence of a pilot flame in accordance with Condition 7.4.8(1) (ii); or
 - C. Verify daily, the following to ensure BFG flare #1 is operating: The presence of a flame or thermal plume at the tip of the flare and that the flare gas header has a positive pressure.
- ii. For BFG flare #2, the Permittee shall monitor the presence of a flare pilot flame using a thermocouple or other equivalent device to detect the presence of a flame.
 - iii. The Permittee shall perform detailed inspections of each BFG flare every 18 months. These inspections shall include all maintenance and repair activities performed based on the inspection results. If the flare cannot be inspected within 18 months, as required, the Permittee may request in writing from IEPA's Permit Section an extension of time to complete this inspection. The request for an extension must be supported with adequate justification for the extension and an assurance that the flare is continuing to operate without any problems. Under no circumstances shall the extension go beyond an additional 6 months.
- m. Pursuant to Permits 72080034 and 72080036 [T1]:
 - i. The Permittee shall maintain and operate a pressure drop continuous recording system on the casthouse baghouse. The recorded data shall be retained for a period of six months shall be made available to the Illinois EPA personnel upon request.
 - ii. The Permittee shall maintain and operate a continuous pressure drop recording system on the iron spout baghouse.
 - n. The Permittee shall conduct observations for opacity for operations associated with the blast furnace in accordance with USEPA Method 9 for a minimum of 30 minutes for each operation unless no visible emissions are observed during the first 12 minutes of observations:
 - i. Blast furnace charging: Annually
 - ii. Blast furnace stoves stacks: Semiannually

iii. Slag pits: Quarterly

7.4.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected Blast Furnaces Processes, pursuant to Sections 39.5(7) (a), (e) and (p) of the Act:

- a. 40 CFR Part 63 Subpart FFFFF (40 CFR 63.7842 and 63.7843):
 - i. The Permittee shall keep the following records, as specified in 40 CFR 63.7842 (a) (1) through (a) (3):
 - A. A copy of each notification and report that the Permittee submitted to comply with 40 CFR 63 Subpart FFFFF, including all documentation supporting any initial notification or notification of compliance status that the Permittee submitted, according to the requirements in 40 CFR 63.10(b) (2) (xiv).
 - B. The records in 40 CFR 63.6(e) (3) (iii) through (v) related to startup, shutdown, and malfunction.
 - C. Records of performance tests, performance evaluations, and opacity observations as required in 40 CFR 63.10(b) (2) (viii).
 - ii. The Permittee shall keep the records in 40 CFR 63.6(h) (6) for visual observations.
 - iii. The Permittee shall keep the records required in 40 CFR 63.7833 and 63.7834 (including a current copy of the operation and maintenance plan) to show continuous compliance with each emission limitation and operation and maintenance requirement that applies to the Permittee.
 - iv. The Permittee shall keep its records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b) (1).
 - v. As specified in 40 CFR 63.10(b) (1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
 - vi. The Permittee shall keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report,

or record, according to 40 CFR 63.10(b)(1). The Permittee may keep the records offsite for the remaining 3 years.

- b. 40 CFR Part 63 Subpart FFFFF [40 CFR 63.7834(b)]:

The Permittee shall maintain a current copy of the operation and maintenance plan required in 40 CFR 63.7800(b) onsite and available for inspection upon request.

- c. The following records of Permits #72080034, #72080036 and #95010001:

i. The Permittee shall maintain records for each beaching event in which iron is beached that, as a minimum, shall include:

- A. An explanation why beaching occurred.
- B. The date, time and duration of beaching.
- C. The measures used to reduce the amount of beaching.
- D. The maximum rate of beaching, tons/minute, (or information showing that the beaching rate did not exceed 20 tons/minute).

- d. Records for Startups of Affected Blast Furnace Processes, pursuant to Section 39.5(7)(b) of the Act

i. The Permittee shall maintain startup procedures for each affected blast furnace process, as required by Condition 7.4.5-2(b)(ii)(C).

ii. The Permittee shall maintain the following records for each startup of an affected blast furnace process:

- A. Date, time and duration of the startup.
- B. A description of the startup and reason(s) for the startup.
- C. Whether a violation of an applicable standard may have occurred during startup accompanied by the information in Condition 7.4.9(d)(iv) if a violation may have or did occur.
- D. Whether the established startup procedures, maintained above, were followed accompanied by the information in Condition 7.4.9(d)(iii) if there were departure(s) from those procedures.

- iii. If the established startup procedures were not followed during a startup, the Permittee shall maintain the following records:
 - A. A description of the departure(s) from the established procedures.
 - B. The reason(s) for the departure(s) from the established procedures.
 - C. An explanation of the consequences of the departure(s) for emissions, such as whether the departure(s) prolonged the startup or resulted in additional emissions, and if so,
 - 1. The actions taken to minimize emissions and the duration of the startup; and
 - 2. An explanation whether similar incidents might be prevented in the future and if so, the corrective actions taken or to be taken to prevent similar incidents.
- iv. If a violation did or may have occurred during a startup, the Permittee shall maintain the following records:
 - A. Identification of the applicable standard(s) that were or may have been violated.
 - B. An explanation of the nature of such violation(s), including the magnitude of such excess emissions.
 - C. A description of the actions taken to minimize the magnitude of emissions and duration of the startup.
 - D. An explanation whether similar incidents could be prevented or ameliorated in the future and if so, a description of the actions taken or to be taken to prevent similar incidents in the future.
- e. Records for Malfunctions or Breakdowns

Pursuant to 35 IAC 201.263, the Permittee shall maintain records of continued operation of the affected Blast Furnace Processes as addressed by Condition 7.4.5-2(b) (i), during malfunctions or breakdowns, which at a minimum, shall include the following records. The preparation of these records shall be completed within 45 days of an incident, unless the Permittee conducts a root cause analysis for the incident, in which case the preparation of

these records, other than the root cause analysis, shall be completed within 120 days of the incident.

- i. Date, time and duration of the incident.
- ii. A detailed description of the incident, including:
 - A. A chronology of significant events during and leading up to the incident.
 - B. Relevant operating data for the unit, including information such as operator log entries and directives provided by management during the incident.
 - C. The measures taken to reduce the quantity of emissions and the duration of the incident including the resources utilized to address the incident.
 - D. The magnitude of emissions during the incident.
- iii. An explanation why continued operation of an affected blast furnace was necessary to prevent personnel injury or prevent equipment damage.
- iv. A discussion of the cause(s) or probable cause(s) of the incident including the following:
 - A. Whether the incident was sudden, unavoidable, or preventable, including:
 1. Why the equipment design did not prevent the incident;
 2. Why better maintenance could not have avoided the incident;
 3. Why better operating practices could not have avoided the incident; and
 4. Why there was no advance indication for the incident.
 - B. Whether the incident stemmed from any activity or event that could have been foreseen, avoided or planned for.
 - C. Whether the incident was or is part of a recurring pattern indicative of inadequate design, operation or maintenance.
- v. A description of any steps taken to prevent similar future incidents or reduce their frequency and severity.

vi. As an alternative to keeping the records required by Condition 7.4.9(e) (iv), the Permittee may perform a root cause analysis. For this purpose, a root cause analysis is an analysis whose purpose is to determine, correct and eliminate the primary causes of the incident and the excess emissions resulting there from. If the Permittee performs a root cause analysis method that would define the problem, define all causal relationships, provide a causal path to the root cause, delineate the evidence, and provide solutions to prevent a recurrence. Such an analysis shall be completed within one year of the incident.

f. Recordkeeping for Backdrafting.

The Permittee shall maintain records for each period when an affected blast furnace is backdrafted. These records shall include, at a minimum for each occurrence, the blast furnace identification, date and timeframe of backdraft, reason for backdrafting (e.g., planned shutdowns and/or routine maintenance), and steps taken to minimize emissions during the backdraft period.

g. Records for BFG Flares

The Permittee shall maintain the following records for BFG flares:

- i. Records of opacity observations performed as required by Condition 7.4.7(d).
- ii. Records of inspections and maintenance activities conducted pursuant to Condition 7.4.8(1).
- iii. For BFG flare #2, date and duration of any time when the pilot flame monitoring equipment of the affected unit was not in operation, with explanation.
- iv. Date and duration of any time when there was no pilot flame present at the flare, with explanation.
- v. Date, duration and description of any other deviations.

h. The Permittee shall maintain the following operating records for the affected blast furnaces:

- i. Monthly and annual usage of natural gas, blast furnace gas and coke oven gas (million ft³) used by the affected blast furnace stoves.
- ii. Blast Furnace hot metal production (total combined daily, monthly and annual in tons), including documentation on iron and slag losses.

- iii. Records of iron pellets charged (tons/month and tons/year).
 - iv. Records of slag processed (tons/month and tons/year).
 - v. For overlapping tapping of both furnaces, records to demonstrate that the tapping rate of each furnace does not exceed 6 tons per minute.
 - vi. If the Permittee operates under manufacturer's specifications or manufacturer's instructions, the Permittee shall maintain such manufacturer's documentation, which shall be kept at the facility as part of the required records.
 - vii. Records identifying process upsets in the operations at the casthouse that result in the generation of additional opacity or PM emissions, such as refractory clay falling into the trough during a missed stop. For these upsets, these records shall include the time of the upset, a description of the upset and a discussion of the consequences for opacity and PM emissions from the casthouse.
- i. The Permittee shall keep the following records related to the emissions of the affected blast furnace processes to verify compliance with the applicable limits in Condition 7.4.6(b) through (g):
- i. A file containing the emission factors used by the Permittee to determine emissions of different pollutants from the various processes, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the processes do not understate actual emissions, including review when emission testing is conducted for such processes. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
 - ii. Records for any periods of operation of such processes that are not otherwise addressed in the required records during which the established emission factor in Condition 7.4.9(i) (i) would understate actual emissions of the process, with description of the period of operation and an estimate of the additional emissions during such period that would not be accounted for by the established factor, with supporting explanation and calculations.

- iii. Records for the annual emissions of such processes for comparison to the limits in Conditions 7.4.6(b) through (f), with supporting calculations.
- iv. Records for combined annual emissions of the affected processes, based on the summation of the above data, for comparison to the limits in Condition 7.4.6(g).

7.4.10 Reporting Requirements

- a. 40 CFR 63 Subpart FFFFFF (40 CFR 63.7841):
 - i. Compliance report due dates. The Permittee shall submit the semiannual compliance reports to the Illinois EPA according to the following requirements:
 - A. Semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
 - B. Each compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.
 - ii. Compliance report contents. Each compliance report must include the following information:
 - A. Company name and address.
 - B. Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
 - C. Date of report and beginning and ending dates of the reporting period.
 - D. If the Permittee had a startup, shutdown, or malfunction during the reporting period and the Permittee took actions consistent with the source's startup, shutdown, and malfunction plan, the compliance report must include the information in 40 CFR 63.10(d) (5) (i).
 - E. If there were no deviations from the continuous compliance requirements in 40 CFR 63.7833 and 63.7834 that apply to the Permittee, a statement that there were no deviations from the emission limitations or operation and

maintenance requirements during the reporting period.

F. If there were no periods during which a continuous monitoring system (including a CPMS, COMS, or continuous emission monitoring system (CEMS)) was out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

G. For each deviation from an emission limitation in 40 CFR 63.7790 that occurs at an affected source where the Permittee is not using a continuous monitoring system (including a CPMS, COMS, or CEMS) to comply with an emission limitation in Subpart FFFFF, the compliance report must contain the information described in Condition 7.4.10(a)(ii) and the following information (this includes periods of startup, shutdown, and malfunction):

1. The total operating time of each affected source during the reporting period.
2. Information on the number, duration, and cause of deviations (including unknown cause, if applicable) as applicable and the corrective action taken.

H. For each deviation from an emission limitation occurring at an affected source where the Permittee is using a continuous monitoring system (including a CPMS or COMS) to comply with the emission limitation in Subpart FFFFF, the Permittee must include the information described in Condition 7.4.10(a)(ii) and the following information (this includes periods of startup, shutdown, and malfunction):

1. The date and time that each malfunction started and stopped.
2. The date and time that each continuous monitoring was inoperative, except for zero (low-level) and high-level checks.
3. The date, time, and duration that each continuous monitoring system was out-of-control as specified in 40 CFR 63.8(c)(7), including the information in 40 CFR 63.8(c)(8).

4. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.
 5. A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
 6. A breakdown of the total duration of the deviations during the reporting period including those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.
 7. A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.
 8. A brief description of the Blast Furnace processes.
 9. A brief description of the continuous monitoring system.
 10. The date of the latest continuous monitoring system certification or audit.
 11. A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.
- iii. Immediate startup, shutdown, and malfunction report. If the Permittee had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with the source's startup, shutdown, and malfunction plan, the Permittee shall submit an immediate startup, shutdown, and malfunction report according to the requirements in 40 CFR 63.10(d)(5)(ii).

- b. Reporting requirements for malfunctions and breakdowns (Permits #72080034, #72080036 and #95010001):

The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than the next Agency business day, upon the occurrence of excess emissions due to malfunctions or breakdowns. The Permittee shall submit a quarterly report to the Illinois EPA's regional office in Collinsville providing an explanation of the occurrence of such events.

- c. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected blast furnace processes from applicable requirements unless a NESHAP standard specifies a different timeframe, as follows:
- A. Requirements in Condition 7.4.3(b) through (f).
 - B. Requirements in Condition 7.4.5-1.
 - C. Requirements in Condition 7.4.5-3.
 - D. Requirements in Condition 7.4.5-4.
 - E. Requirements in Condition 7.4.6(a) through (j).
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- iii. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- iv. All required deviation reports described in Condition 7.4.10(c) above shall contain the following information:
- A. Date, time and duration of the deviation;
 - B. Description of deviation;
 - C. Probable cause of the deviation;
 - D. Any corrective action or preventative measures taken;

- d. Reporting on the State startup authorization shall be performed in accordance with Condition 5.10.5-1.
- e. Reporting on the Federal SSM authorization shall be performed in accordance with Condition 5.10.5-3.

7.4.11 Operational Flexibility

Backdrafting the blast furnaces in order to conduct planned/routine maintenance (not associated with malfunction and breakdowns) shall follow procedures designed to minimize the release of emissions during such activities.

7.4.12 Compliance Procedures

- a. For affected blast furnace processes, compliance with the applicable standards of Condition 7.4.3 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.4 of this permit.
- b. Compliance with the production/emission limits of Conditions 7.4.6 and 5.6.2 is addressed by the work practices, testing, monitoring, recordkeeping, and reporting requirements in Sections 7.4 and 5 of this permit.

7.4.13 Compliance Schedule and Current Enforcement Status

- a. The Permittee shall comply with the following schedule of compliance related to SO₂ emissions from combustion of Blast Furnace Gas in various emission units at the source, as established in accordance with Consent Order No. 05-CH-750 (December 18, 2007 as amended on December 23, 2009):

Commitment	Timing
Use the correct emission factor for the Blast Furnace Gas SO ₂ emissions when calculating, recording and reporting SO ₂ emissions and for any other purpose under the Act.	Immediately and at all times going forward.
Work with the Illinois EPA, including providing additional information to the Agency when requested.	Within 30 days of the request.
Obtain a revised PSD Construction Permit.	Subject to Agency final issuance.

- b. Submittal of Progress Reports

Quarterly Progress Reports shall be submitted beginning with the fourth quarter of 2009 and ending upon the achievement of compliance. Each quarterly report shall be submitted no later than 30 days after the end of the

corresponding calendar quarter. The Progress Report shall contain at least the following:

- i. The required date for achieving commitments, and actual dates when such commitments were achieved.
 - ii. Any commitments accepted by the Permittee or otherwise established for the affected BOF as part of the resolution of the above referenced Consent Order, with the associated timing for each commitment.
 - iii. A discussion of progress in complying with commitments that is subject to future deadlines.
 - iv. If any commitment was not met, an explanation of why the required timeframe or commitment was not met, and any preventive or corrective measures adopted to achieve required commitment.
- c. After completion of all required commitments and certification of compliance, as identified in Condition 7.4.13(a) no further Quarterly Progress Reports are required to be submitted.

Note: US Steel informed the Illinois EPA during deliberations on Consent Order 05-CH-750 of possible violations involving SO₂ emissions from use of Blast Furnace Gas. The violations involved exceedances of the SO₂ limit in Construction Permit 95010001 issued on July 23, 1996. The violations were addressed, working with the Office of the Illinois Attorney General, in Consent Order 05-CH-750, which was entered on December 18, 2007 in the Circuit Court for the Third Judicial Circuit, Madison County, Illinois. This Consent Order required US Steel to submit a complete and accurate application including required SO₂ modeling to modify Construction Permit 95010001 by January 31, 2008. That application has been submitted by US Steel.

7.4.14 State-Only Conditions

State-only conditions are not being established.

7.5 Basic Oxygen Processes

7.5.1 Description

Reladling and Desulfurization Stations:

Molten iron from the blast furnaces is transported to the BOF by torpedo cars. The iron is then transferred to the charging ladles at the reladling station. In the desulfurization stations a combination of lime and magnesium is injected into the molten iron to remove the sulfur. The sulfur reacts with the lime and magnesium and forms a layer of slag on the surface of the iron. A collection system with a positive pressure baghouse is used to control emissions of particulate matter from these stations.

Slag Skimming:

After the molten iron is desulfurized, the ladle it is moved to this station where a mechanical arm is used to scrape slag from the surface of the iron. This slag is scraped from the iron ladles and into slag pots. A collection system with a baghouse is used to control emissions from this process.

Basic Oxygen Furnaces (BOF):

A fresh BOF charge usually begins with scrap metal. The scrap is charged into the BOF vessel. Molten iron is then charged into the vessel. A secondary hood is utilized to capture emissions during the charge. During periods of reduced molten iron availability scrap may be preheated with a natural gas fired lance to increase the temperature and reduce the amount of molten iron needed for a heat of steel. The BOF is then closed off and an oxygen lance is inserted to begin the melting and refining process. The oxygen lance openings on each BOF is equipped with steam rings. The steam rings are control measures for emissions of particulate matter from the BOF during the "oxygen blow" or refining phase when oxygen is being fed into the furnaces. The steam rings would inject steam in the area between the oxygen lance and the "lance hole" in the lid of the furnaces, acting to suppress the emissions of particulate through this area during the refining phase. In the BOF, the injected oxygen reacts exothermically with the carbon in the iron generating heat which melts the scrap and reducing the amount of carbon in the bath thus converting the iron to steel. When the refining process is completed, the molten steel is poured into a steel transfer ladle. Materials such as aluminum, silica, and manganese are added, as required, depending upon the particular steel alloy being produced. After the molten steel is tapped, the remaining slag is then dumped into a slag ladle. Emissions from these operations are captured and controlled with an electrostatic precipitator (ESP).

Ladle Preheating and Drying:

In this unit, lances combust either natural gas or coke oven gas to produce the heat needed to dry and preheat iron and steel handling ladles. The refractory linings of freshly re-bricked or repaired ladles must be completely dried and preheated before use. The drying process is necessary because any moisture left in the refractory would immediately vaporize and expand when the ladles are filled with molten iron or steel. This sudden expansion could cause the refractory lining to split which would allow the molten iron and steel to come into contact with, and damage the shell of the ladle. Emissions from this unit consist of particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide and organic materials generated by fuel combustion.

Ladle Metallurgy Furnaces (LMF) and Argon Stirring Stations:

At the LMF station and the argon stirring stations, final adjustments are made to the composition of a ladle of steel and the steel is held pending casting. At the LMF station, electricity can also be used to heat a ladle of steel if it has cooled below the range at which steel can be cast.

If the steel does not need to be reheated and at most minor adjustments are needed to its composition, the ladle of steel goes to one of the two argon stirring stations. At these stations, stirring lances are inserted into the steel and argon is pumped into the steel to maintain uniform composition and temperature. A baghouse is also used to control emissions from the operations.

Note: This narrative description is for informational purposes only and is not enforceable.

7.5.2 List of Emission Units and Air Pollution Control Equipment

Location	Basic Oxygen Process Descriptions	Date Constructed	Emission Control Equipment
Basic Oxygen Process Furnace Shop (BOPF)	Hot Metal Transfer Station	Prior to 05/1983	Reladle/Desulfurization Baghouse
	(2) Hot Metal Desulfurization Stations		
	Slag Skimming Station	1985	Skimmer Baghouse
	Basic Oxygen Furnaces (BOF) #1 and #2 with Steam Rings	Prior to 08/1972	Electrostatic Precipitator
	Ladle Drying/Preheating (coke oven gas and natural gas modes)	Prior to 08/1972	None

Location	Basic Oxygen Process Descriptions	Date Constructed	Emission Control Equipment
	Ladle Metallurgy Furnace (LMF) Station	Prior to 1986	Baghouse #2
	Argon Stirring Stations	Around 1988	

7.5.3 Applicable Provisions

a. Pursuant to 35 IAC 212.446, emissions of particulate matter from basic oxygen processes shall be controlled as follows:

i. Charging, Refining and Tapping (BOF Operations). Particulate matter emissions from all basic oxygen furnaces (BOF) shall 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 35 IAC 212.322. For purposes of computing the process weight rate, nongaseous material charged to the furnace and process oxygen shall be included. No material shall be included more than once [35 IAC 212.446(a)].

ii. Hot Metal Transfer, Hot Metal Desulfurization and Ladle Lancing.

Particulate matter emissions from hot metal transfers to a mixer or ladle, hot metal desulfurization operations and ladle lancing shall be collected and ducted to pollution control equipment, and emissions from the pollution control equipment shall not exceed 69 mg/dscm (0.03 gr/dscf) [35 IAC 212.446(b)(1)].

iii. For openings in the building housing the BOF, no person shall cause or allow emissions to exceed an opacity of 20 percent, as determined by averaging any 12 consecutive observations taken at 15 second intervals [35 IAC 212.446(c)].

b. Pursuant to 35 IAC 212.458, no person shall cause or allow emissions of PM₁₀, other than that of fugitive particulate matter, into the atmosphere to exceed the following limits during any one hour period:

i. 32.25 ng/J (0.075 lbs/mmBtu) of heat input from the burning of coke oven gas (at ladle dryers/preheaters) [35 IAC 212.458(b)(9)].

- ii. 27.24 kg/hr (60 lbs/hr) and 0.1125 kg/Mg (0.225 lbs/T) of total steel in process whichever limit is more stringent for the total of all basic oxygen furnace operations (charging, refining and tapping, as described in 35 IAC 212.446(a)) and measured at the BOF stack [35 IAC 212.458(b) (23)].
 - iii. 22.9 mg/scm (0.01 gr/scf) from any process emissions unit, except as otherwise provided in 35 IAC 212.458 or in 212.443 and 212.446 [35 IAC 212.458(b) (7)].
- c. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.
- d. The Basic Oxygen Processes are subject to 40 CFR Part 63, Subpart FFFFF, Integrated Iron and Steel Manufacturing Facilities. Applicable provisions of this NESHAP are addressed below and in other conditions of this section of the permit.
- e. Pursuant to 40 CFR 63.7790(a) and Table 1 to 40 CFR Part 63 Subpart FFFFF, the emissions from the Basic Oxygen Processes shall not exceed the following limits applicable to operation at existing basic oxygen process furnace (BOPF) identified in paragraphs 9 through 12 of Table 1 to Subpart FFFFF:
- i. The Permittee must not cause to be discharged to the atmosphere any gases that exit from a primary emission control system for a BOPF with an open hood system at an existing BOPF shop that contain, on a flow-weighted basis, particulate matter in excess of 0.02 gr/dscf during the steel production cycle.
 - ii. For each hot metal transfer, slag skimming, and hot metal desulfurization operation, the Permittee must not cause to be discharged to the atmosphere any gases that exit from a control device that contain particulate matter in excess of 0.01 gr/dscf.
 - iii. For each ladle metallurgy furnace operation, the Permittee must not cause to be discharged to the atmosphere any gases that exit from a control device that contain particulate matter in excess of 0.01 gr/dscf.
 - iv. For each roof monitor on the BOPF Shop, the Permittee must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the BOPF shop or any other building housing the BOF or basic

oxygen process that exhibit opacity greater than 20 percent (3-minute average).

- f. Pursuant to 40 CFR 63.7790(b)(3), for the electrostatic precipitator applied to control emissions from a BOF, the Permittee must maintain the hourly average opacity of emissions exiting the control device at or below 10 percent.
- g. The basic oxygen furnaces are subject to 35 IAC 214.301, which provides that no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.

7.5.4 Non-Applicability of Regulations of Concern

- a. Pursuant to 35 IAC 212.324(a)(3) and 212.316(f), the emission limitations of 35 IAC 212.324 and 212.316 are not applicable to the basic oxygen processes because these operations are subject to specific emission standards and limitations contained in 35 IAC Part 212 Subpart R, as addressed in Condition 7.5.3(a).
- b. Except where noted, 35 IAC 212.321 and 35 IAC 212.322 shall not apply to the steel manufacturing processes subject to 35 IAC 212.442 through 35 IAC 212.452 [35 IAC 212.441].
- c. This permit is issued based on the affected basic oxygen processes not being subject to the applicable requirements of 35 IAC 219.301 because these processes do not emit photochemically reactive organic material as defined in 35 IAC 211.4690.
- d. The basic oxygen processes are not subject to 35 IAC 216.121 because they are not fuel combustion emission units as defined in 35 IAC 211.2470.

7.5.5-1 Work Practices Provisions for Operation and Maintenance Plan (40 CFR 63.7800)

- a. Pursuant to 40 CFR 63.6(e)(1)(i), the Permittee must always operate and maintain the basic oxygen processes, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 CFR 63 Subpart FFFFF.
- b. The Permittee shall prepare and operate at all times according to a written operation and maintenance plan for each capture system or control device subject to an operating limit in 40 CFR 63.7790(b). Each plan shall address the following elements:

- i. Monthly inspections of the equipment that is important to the performance of the total capture system (e.g., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan also must include requirements to repair any defect or deficiency in the capture system before the next scheduled inspection.
- ii. Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.
- iii. Corrective action procedures for baghouses equipped with bag leak detection systems. In the event a bag leak detection system alarm is triggered, the Permittee shall initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions may include, but are not limited to:
 - A. Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.
 - B. Sealing off defective bags or filter media.
 - C. Replacing defective bags or filter media or otherwise repairing the control device.
 - D. Sealing off a defective baghouse compartment.
 - E. Cleaning the bag leak detection system probe, or otherwise repair the bag leak detection system.
 - F. Shutting down the process producing the particulate emissions.
- iv. Corrective action procedures for electrostatic precipitator (ESP) equipped with COMS. In the event an ESP exceeds the operating limit in 40 CFR 63.7790(b)(3), the Permittee shall take corrective

actions consistent with the site-specific monitoring plan in accordance with 40 CFR 63.7831(a).

7.5.5-2 Work Practices Provisions for Startup, Shutdown and Malfunction Plans and associated procedures

a. NESHAP Provisions

- i. Pursuant to 40 CFR 63.7810, the Permittee must be in compliance with the emission limitations and operation and maintenance requirements in 40 CFR 63 Subpart FFFFFF at all times, except during periods of startup, shutdown and malfunction as defined in 40 CFR 63.2
- ii. Pursuant to 40 CFR 63.7810(c), the Permittee shall develop a written startup, shutdown, and malfunction plan for BOF according to the provisions of 40 CFR 63.6(e) (3).
- iii. Pursuant to 40 CFR 63.7835:
 - A. Consistent with 40 CFR 63.6(e) and 63.7(e) (1), deviations from NESHAP requirements that occur during a period of startup, shutdown, or malfunction are not violations if the Permittee demonstrates to the Illinois EPA that the Permittee was operating in accordance with 40 CFR 63.6(e) (1).
 - B. The Illinois EPA will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in 40 CFR 63.6(e).
- iv. The Permittee shall fulfill the applicable reporting requirements identified in Condition 5.10.5(b) and 40 CFR 63.7841(b) (4) and (c).
- v. The Permittee shall keep records in accordance with 40 CFR 63.7842(a) (2) related to startup, shutdown and malfunction.

b. Provisions of State Emission Standards, pursuant to 35 IAC 201.149 and Part 201 Subpart I

- i. Subject to the following terms and conditions, the Permittee is authorized to continue to operate in violation of the applicable standards as specified below in the event of a malfunction or breakdown.

- A. For the basic oxygen furnace, the applicable state standards in Condition 7.5.3(a) (iii), (b) (ii) and (c)), and
- B. For the LMF, the applicable state standards in Conditions 7.5.3(b) (iii) and (c).

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally explaining why such continued operation would be required to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns.

- ii. This authorization only allows such continued operation as necessary to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.
- iv. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall, as soon as practicable, repair the units and/or re-establish applicable control practices.
- v. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.5.9(g) and reporting requirements of Condition 5.10.5-2.
- vi. Following notification to the Illinois EPA (see Condition 5.10.5-2(a) (i)) of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident.
- vii. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.5.5-3 Work Practices from Permits 72080043, 95010001 and 10080021

- a. Pursuant to Permit 72080043 [T1]:
 - i. 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 at 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.
- ii. 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.
- b. Pursuant to Permit 95010001 [T1]:
 - i. The BOF capture system shall be operated at the above minimum set points (see Condition 7.5.6(h)) until and unless the Illinois EPA 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 [T1].
 - ii. The Permittee shall operate, maintain, and repair the BOF ESP in a manner that assures compliance with the conditions of Permit 95010001 [T1].
 - iii. The Permittee shall maintain an adequate inventory of spare parts for the BOF ESP at all times [T1].

- c. Pursuant to Permit 10080021 [T1]:
 - i. Beginning October 31, 2012, during the refining phase of operation, the steam rings on the BOFs shall be operated in accordance with written procedures developed by the Permittee that set forth the timing and rate of steam injection as related to furnace operation and reflect good air pollution control practice to minimize emissions of particulate matter.
 - ii. Prior to October 31, 2012, during the refining phase of operation, the steam rings on the BOFs shall be operated in accordance with good air pollution control practice to minimize emissions of particulate matter.

7.5.6 Production and Emission Limitations from Permit 95010001

- a. Total combined production of liquid steel from the affected BOFs shall not exceed 11,000 nettons per day, averaged over any calendar month [T1].
- b. BOF Shop Emissions (tons/yr total) shall not exceed the following limits [T1]:

<u>PM</u>	<u>PM₁₀</u>	<u>NO_x</u>	<u>VOM</u>	<u>CO</u>	<u>Lead</u>
510	451	70	12	16,097	1.43

- c. BOF ESP Stack (charge, refine, tap) emissions shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factor (Lbs/Ton)</u>	<u>Maximum Emissions (Tons/Yr)</u>
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

- d. BOF Roof Monitor emissions shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factor (Lbs/Ton)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.0987	176.71
PM ₁₀	0.06614	118.40
Lead	0.0129 lbs/hr	0.08

- e. Hot Metal Desulfurization and Hot Metal Transfer emissions shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>Emission Factor (Lbs/Ton)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.03721	58.88
PM ₁₀	0.03721	58.88
VOM	0.0010	1.58
Lead	0.0133 lbs/hr	0.09

- f. Hot metal charging and ladle slag skimming emissions shall not exceed the following limits [T1]:

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

- g. Emissions from Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy Baghouse #2) shall not exceed the following limits (see Section 7.1):

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

- h. 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 [T1]:

- i. Set point requirements while only a single BOF vessel is in operation:
 - A. Minimum set point during charging operation: 550,000 cfm;
 - B. Minimum set point during refining operation: 650,000 cfm; and
 - C. Minimum set point during tapping operation: 200,000 cfm (until one minute after completing alloy addition).
- ii. During dual operation of BOF vessels (a.k.a., overlapping BOF operation) the minimum set point shall be 700,000 cfm.

- i. Compliance with the annual limits shall be determined on a calendar year basis [T1].

Note: These provisions (Conditions 7.5.6(a) through (i)) were originally established in Construction Permit 95010001.

- j. Emissions of particulate matter from the Ladle metallurgy station and the existing argon stirring station shall not exceed 16.20 TPY [T1].
- k. The maximum process weight for 1) argon stirring, 2) ladle reheat, 3) alloy addition, 4) ladle slag skimming, and 5) hot metal desulfurization shall not exceed 356.7 t/hr for 8,760 hours per year [T1].

Note: These provisions (Conditions 7.5.6(j) and (k)) were originally established in Permit 83050042.

7.5.7 Testing Requirements

a. Testing requirements in 40 CFR Part 63 Subpart FFFFF:

- i. Pursuant to 40 CFR 63.7821(b), for the Basic Oxygen Furnaces (which are equipped with a control device other than a baghouse), the Permittee shall conduct subsequent performance tests no less frequently than twice (at mid-term and renewal) during each term of the title V operating permit (i.e., this CAAPP permit).
- ii. Pursuant to 40 CFR 63.7821(c), for each Basic Oxygen Furnace Process equipped with a baghouse, the Permittee shall conduct subsequent performance tests no less frequently than once during each term of the Title V operating permit (every 60 months).
- iii. The Permittee shall use the following test methods for compliance demonstration with the emission limits for particulate matter [40 CFR 63.7822(b)]:
 - A. The Permittee shall determine the concentration of particulate matter according to the following test methods in Appendix A to 40 CFR Part 60.
 - 1. Method 1 to select sampling port locations and the number of traverse points. Sampling ports must be located at the outlet of the control device and prior to any releases to the atmosphere.
 - 2. Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.
 - 3. Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

4. Method 4 to determine the moisture content of the stack gas.
 5. Method 5, 5D, or 17, as applicable, to determine the concentration of particulate matter (front half filterable catch only).
 - B. The Permittee shall collect a minimum sample volume of 60 dry standard cubic feet (dscf) of gas during each particulate matter test run. Three valid test runs are needed to comprise a performance test.
- iv. Pursuant to 40 CFR 63.7822(g), for the BOF ESP (which is a primary emission control system applied to emissions from a BOF with an open hood system), the Permittee shall complete the following requirements:
 - A. Sample only during the steel production cycle. The Permittee shall conduct sampling under conditions that are representative of normal operation. The Permittee shall record the start and end time of each steel production cycle and each period of abnormal operation; and
 - B. Sample for an integral number of steel production cycles. The steel production cycle begins when the scrap is charged to the BOF and ends 3 minutes after the slag is emptied from the vessel into the slag pot.
- v. Pursuant to 40 CFR 63.7822(h), for a control device applied to emissions from BOPF shop ancillary operations (hot metal transfer, slag skimming, hot metal desulfurization, or ladle metallurgy), the Permittee shall sample only when the operation(s) is being conducted.
- vi. The Permittee shall conduct each visible emissions performance test such that the opacity observations overlap with the performance test for particulate matter [40 CFR 63.7823(b)].
- vii. The following test methods shall be used for opacity observations pursuant to 40 CFR 63.7823(d):

Using a certified observer, the Permittee shall determine the opacity of emissions according to Method 9 in Appendix A to Part 60 as specified below:

- A. Instead of procedures in section 2.4 of Method 9 in Appendix A to 40 CFR Part 60, the Permittee shall record observations to the nearest 5 percent at 15-second intervals for at least three steel production cycles.
 - B. Instead of procedures in section 2.5 of Method 9 in Appendix A to 40 CFR Part 60, the Permittee shall determine the 3-minute block average opacity from the average of 12 consecutive observations recorded at 15-second intervals.
- b. Pursuant to Sections 39.5(7)(d) and (p) of the Act, in conjunction with the testing of emissions required for an emission unit in the BOF shop by the NESHAP (Condition 7.5.7(a) which requires testing at the midterm and renewal of this CAAPP permit), the Permittee shall also have testing conducted to measure emissions of other pollutants as follows.

- i. Testing shall be conducted for PM/PM₁₀*, lead and other pollutants as follow: BOF Furnaces (ESP) - NO_x, VOM and CO; and Hot Metal Desulfurization and Slag Skimming (Baghouses) - VOM.

* As an alternative to measurements for PM₁₀ emissions, the measured results for PM, as determined in accordance with the NESHAP, shall be considered PM10, as provided for by 35 IAC 212.108.

- ii. The relevant test method specified by the NESHAP or the following USEPA test methods shall be used for this testing, unless another USEPA test method is approved by the Illinois EPA during the review of a Test Plan submitted by the Permittee prior to testing.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
VOM	Method 18 or 25A
NO _x	Method 7E or 19
CO	Method 10 or 10B
Lead	Method 29

- iii. For this emission testing, test notifications and reporting shall be done by the Permittee in accordance with Condition 8.6.2 and 8.6.3 of this permit.

- c. As provided by 35 IAC 212.446(c), observations to determine compliance with the opacity standard in 35 IAC 212.446(c) (see Condition 7.5.3(a)(iii)) shall be performed in accordance with 40 CFR Part 60, Appendix A, Method 9, incorporated by reference in 35 IAC 212.113, except that compliance shall be determined by averaging any 12 consecutive observations taken at 15 second intervals.

7.5.8 Monitoring and Inspection Requirements

- a. Monitoring (40 CFR 63.7830)
 - i. For the capture system for secondary emissions from the Basic Oxygen Furnaces (which are subject to an operating limit in 40 CFR 63.7790(b)(1) established in Permittee's capture system operation and maintenance plan), the Permittee shall install, operate, and maintain a continuous parameter monitoring system (CPMS) according to the requirements in 40 CFR 63.7831(e) and the requirements in 40 CFR 63.7830(a)(1) through (3).
 - ii. The Permittee shall operate and maintain a bag leak detection system on Baghouse #2 and the slag skimmer baghouse according to 40 CFR 63.7831(f) and monitor the relative change in particulate matter loadings according to the requirements in 40 CFR 63.7832.
 - iii. The Permittee shall conduct inspections of each baghouse at the specified frequencies according to the following requirements [40 CFR 63.7830(b)(4)]:
 - A. Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the operation and maintenance manual.
 - B. Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.
 - C. Check the compressed air supply for pulse-jet baghouses each day.
 - D. Monitor cleaning cycles to ensure proper operation using an appropriate methodology.
 - E. Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.

- F. Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (knead or bent) or laying on their sides. The Permittee does not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.
 - G. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.
 - H. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.
- iv. For the ESP controlling the BOF furnaces (which are subject to an opacity limit of 10 percent, hourly average, pursuant to 40 CFR 63.7790(b)(3)), the Permittee shall operate and maintain a continuous opacity monitoring system (COMS) according to the requirements in 40 CFR 63.7831(h) and monitor the hourly average opacity of emissions exiting the stack according to the requirements in 40 CFR 63.7832 [40 CFR 63.7830(d)].

If the hourly average opacity for the ESP exceeds the operating limit, the Permittee shall follow the following procedures [40 CFR 63.7833(g)]:

- A. The Permittee shall initiate corrective action to determine the cause of the exceedance within 1 hour. During any period of corrective action, the Permittee must continue to monitor and record all required operating parameters for equipment that remains in operation. Within 24 hours of the exceedance, the Permittee shall measure and record the hourly average operating parameter value for the emission unit on which corrective action was taken. If the hourly average parameter value meets the applicable operating limit, then the corrective action was successful and the emission unit is in compliance with the applicable operating limit.
- B. If the required initial corrective action was not successful, the Permittee shall complete additional corrective action within the next 24 hours (48 hours from the time of the exceedance). During any period of corrective action, the Permittee shall continue to monitor

and record all required operating parameters for equipment that remains in operation. After this second 24-hour period, the Permittee shall again measure and record the hourly average operating parameter value for the emission unit on which corrective action was taken. If the hourly average parameter value meets the applicable operating limit, then the corrective action was successful and the emission unit is in compliance with the applicable operating limit.

- C. For purposes of 40 CFR 63.7833(g) (1) and (2), in the case of an exceedance of the hourly average opacity operating limit for an ESP, measurements of the hourly average opacity based on visible emission observations in accordance with Method 9 may be taken to evaluate the effectiveness of corrective action.
 - D. If the second attempt at corrective action required in paragraph 40 CFR 63.7833 (g) (2) was not successful, the Permittee shall report the exceedance as a deviation in the next semiannual compliance report according to 40 CFR 63.7841(b).
- b. Installation, operation, and maintenance requirements for monitors [40 CFR 63.7831]
- i. For the slag skimmer baghouse and Baghouse #2 (which are subject to 40 CFR 63.7830(b) (1)), the Permittee shall operate and maintain the bag leak detection system according to the following requirements [40 CFR 63.7831(f)]:
 - A. The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
 - B. The system must provide output of relative changes in particulate matter loadings.
 - C. The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it

can be heard by the appropriate plant personnel.

- D. Each system that works based on the triboelectric effect must be installed, operated, and maintained in a manner consistent with the guidance document, "Fabric Filter Bag Leak Detection Guidance," EPA-454/R-98-015, September 1997. The Permittee may install, operate, and maintain other types of bag leak detection systems in a manner consistent with the manufacturer's written specifications and recommendations.
 - E. To make the initial adjustment of the system, the Permittee shall establish the baseline output by adjusting the sensitivity (range) and the averaging period of the device. Then, the Permittee shall establish the alarm set points and the alarm delay time.
 - F. Following the initial adjustment, the Permittee may not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the Permittee's operation and maintenance plan. The Permittee may not increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless a responsible official certifies, in writing, that the baghouse has been inspected and found to be in good operating condition.
 - G. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
- ii. For the ESP (which is subject to the opacity limit in 40 CFR 63.7790(b)(3)), the Permittee shall install, operate, and maintain a COMS according to the following requirements in 40 CFR 63.7831 (h)(1) through (4):
- A. The Permittee shall install, operate, and maintain each COMS according to Performance Specification 1 in 40 CFR Part 60, Appendix B.
 - B. The Permittee shall conduct a performance evaluation of each COMS according to 40 CFR 63.8 and Performance Specification 1 in Appendix B to 40 CFR Part 60.

- C. Each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.
 - D. COMS data must be reduced to 6-minute averages as specified in 40 CFR 63.8(g)(2) and to hourly averages where required by 40 CFR 63 Subpart FFFFF.
- c. Pursuant to the operation and maintenance requirements of the O/M plan required by 40 CFR 63.7800(b), the Permittee shall comply with following inspection procedures for the capture systems and controls:

Monthly inspections of the equipment that is important to the performance of the total capture system. This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). Repair of any defect or deficiency in the capture system shall be done before the next scheduled inspection.

- d. Monitoring of capture and control systems for Basic Oxygen Furnaces (from Permit 95010001):
- i. The Permittee shall operate and maintain the waste gas suction monitor system for the capture system for the Basic Oxygen Furnace that continually measures and records each operation (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.
 - A. The Permittee shall use the waste gas suction monitoring system 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.
 - B. The Permittee shall operate and maintain the system to ensure that accurate and useful data is collected.
 - C. The Permittee shall continuously record the static pressure in the main down comer duct of the ESP emissions capture and transport system.

- ii. The Permittee shall calibrate, operate, and maintain a continuous strip chart recorder or disk storage of the ESP stack gas flow rate as measured by the stack gas flow meter during ESP use.
- iii. The stack gas flow meter shall be calibrated on at least a quarterly basis.
- iv. A. 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 be 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 expeditiously.
- e. Opacity observations for 35 IAC 212.446(c);

The following opacity observations shall be performed pursuant to Section 39.5(7) (a) and (p) of the Act:

- i. The Permittee shall have the opacity of the exhaust of the building housing the BOF determined by a qualified observer in accordance with USEPA Method 9 while the affected BOF(s) is operating, as further specified below.
 - A. Observations of opacity shall be conducted on the following frequency unless absence of adequate daylight or weather conditions preclude scheduled observation, in which case, the next observations shall be conducted on the next operating day of the BOF during which observations of opacity can reasonably be conducted in accordance with USEPA Method 9, except that reading shall be taken as a 3-minute average (12 consecutive observations taken 15 seconds intervals).
 - B. If a baghouse is not installed for control of tapping emissions from the BOF, these readings shall be performed for at least five days out of every seven. 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 minute rolling averages.

C. Beginning 30 days after initial startup of a baghouse for control of tapping emissions from the BOFs, the Permittee shall have the opacity of the exhaust of the building housing the BOF determined by a qualified observer in accordance with USEPA Method 9 while the affected BOF(s) are operating, as further specified below.

1. The duration of opacity observations for each test shall be one complete steel making cycle.

2. Observations of opacity shall be conducted on the following frequency unless absence of adequate daylight or weather conditions preclude scheduled observation, in which case, the next observations shall be conducted on the next operating day of the BOF during which observations of opacity can reasonably be conducted in accordance with USEPA Method 9.

3. On a weekly basis (at least once every seven operating days of BOF) except as provided below.

4. On a daily basis (at least 5 days out of seven operating days of BOF) if any of the five previous 3-minute average observations measured opacity of 18 percent or more, continuing on a daily basis until the maximum opacities measured in five consecutive daily observations are all less than 18 percent, at which time observations on a weekly basis shall resume.

ii. Upon written request by the Illinois EPA, additional opacity observations shall be conducted within 5 operating days for the BOF from the date of the request by the Illinois EPA or on the date agreed upon by the Illinois EPA, whichever is later. For

such observations conducted pursuant to a request from the Illinois EPA:

- A. The Permittee shall notify the Illinois EPA at least 24 hours in advance of the date and time of these observations, in order to enable the Illinois EPA to witness the observations. This notification shall include the name and employer of the qualified observer(s).
 - B. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for observations.
 - C. The duration of these observations shall cover a complete heat or cycle of the affected BOF.
 - D. The Permittee shall provide a copy of the current certification for the opacity observer and observer's readings to the Illinois EPA at the time of the observations, if the Illinois EPA personnel are present.
 - E. The Permittee shall keep records for all opacity measurements for the BOF made in accordance with USEPA Method 9 for the affected operations that the Permittee conducts or that are conducted at its behest by individuals who are qualified to make such observations. For each occasion on which such measurements are made, these records shall include the formal report for the measurements, a description of the measurements that were made, the operating condition of the affected operations, the observed opacity, and copies of the raw data sheets for the measurements.
- iii. A. The Permittee shall determine the opacity from the BOF ESP stack for at least one hour on any normal work day 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.
- B. The opacity shall be determined in accordance with the observation procedures set out in 40 CFR Part 60, Appendix A, Method 9.

f. Monitoring and Collecting Data [40 CFR 63.7832]:

- i. For purposes of the NESHAP, 40 CFR 63 Subpart FFFFF, except for monitoring malfunctions, out-of-control periods as specified in 40 CFR 63.8(c)(7), associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), the Permittee shall monitor continuously (or collect data at all required intervals) at all times a subject control/capture system is operating.
- ii. The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels or to fulfill a minimum data availability requirement, if applicable. The Permittee shall use all the data collected during all other periods in assessing compliance.
- iii. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

g. Operational Monitoring for Steam Rings from Construction Permit 10080021:

The Permittee shall install, maintain and operate a continuous monitoring system on each steam ring for the steam valve position (open or closed) and the rate at which steam is being injected.

7.5.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items pursuant to Sections 39.5(7)(a) and (e) of the Act:

- a. 40 CFR 63 Subpart FFFFF (40 CFR 63.7842 and 63.7843)
 - i. The Permittee shall keep the following records specified in 40 CFR 63.7842 (a)(1) through (a)(3):
 - A. A copy of each notification and report that the Permittee submitted to comply with 40 CFR 63 Subpart FFFFF, including all documentation supporting any initial notification or notification of compliance status that the Permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv).

- B. The records in 40 CFR 63.6(e) (3) (iii) through (v) related to startup, shutdown, and malfunction.
- C. Records of performance tests, performance evaluations, and opacity observations as required in 40 CFR 63.10(b) (2) (viii).
- ii. For each COMS, the Permittee shall keep the following records specified in 40 CFR 63.7842 (b) (1) through (4):
 - A. Records described in 40 CFR 63.10(b) (2) (vi) through (xi).
 - B. Monitoring data for a performance evaluation as required in 40 CFR 63.6(h) (7) (i) and (ii).
 - C. Previous (that is, superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d) (3).
 - D. Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.
- iii. The Permittee shall keep the records specified in 40 CFR 63.6(h) (6) for visual observations.
- iv. The Permittee shall keep the records required in 40 CFR 63.7833 and 63.7834 to show continuous compliance with each emission limitation and operation and maintenance requirement that applies to the Permittee.
- v. The Permittee shall keep the records in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b) (1).
- vi. As specified in 40 CFR 63.10(b) (1), the Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- vii. The Permittee shall keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b) (1). The

Permittee may keep the records offsite for the remaining 3 years.

- viii. The Permittee shall maintain a current copy of the operation and maintenance plan required in 40 CFR 63.7800(b) onsite and available for inspection upon request.
 - ix. A. The Permittee shall maintain a copy of the site-specific monitoring plan for each CPMS required by 40 CFR 63.7830, pursuant to 40 CFR 63.7831(a).
 - B. If the Permittee operates under manufacturer's specifications or manufacturer's instructions, such manufacturer's documentation shall be kept at the source as part of the required records.
- b. Recordkeeping from Permits 72080043 and 95010001:
- i. Operating time of the BOFs;
 - ii. 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;
 - iii. Operating time of the ESP and performance parameters, including voltage and amperage of each 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;
 - v. Total production of molten steel at the BOFs (daily, monthly, and annual production in tons);
 - vi. The Permittee shall keep a continuous strip chart recorder or disk storage of the stack gas flow rate during ESP use.
 - vii. The Permittee shall records 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.
 - ix. Records of all opacity observations.

c. Recordkeeping carried over from Permit 08110016:

The operating and maintenance records that the Permittee maintains for the ESP shall include the following information for the induced draft fans on the ESP, in addition to other required information:

- i. The periods of time when the BOFs operated with less than three properly functioning fans, with description and explanation.
- ii. The periods of time when the BOFs are operating and a spare fan is not available, with the identity of the fan(s) that were not available and explanation, e.g., spare fan not available due to regularly scheduled maintenance or spare fan not available due to unplanned breakdown of the main bearings.

d. Recordkeeping for the steam rings on the BOF furnaces from Construction Permit 10080021:

- i. A. The Permittee shall maintain a record of the steam valve position (open or closed) and the rate at which steam is being injected, as determined by the continuous monitoring systems required by Condition 7.5.8(g).
- B. In addition to keeping records of the data measured by these monitoring systems, the Permittee shall keep records of the operation, calibration and maintenance of these systems.
- ii. The Permittee shall maintain an operating log or other records for the BOF and steam rings that contain information generally documenting the steam rings are being operated in accordance with Condition 7.5.5-3(c), including information for the timing of the refining phase of each heat of a BOF furnace.
- iii. The Permittee shall maintain detailed records of the following information for each heat in a BOF furnace in which the steam ring was not operated during the refining phase:
 - A. Identification of the heat and the duration of the incident, i.e., start time and time normal operation was achieved or the refining phase was completed.
 - B. Description of the incident, impact on effectiveness of the steam ring, probable cause, and corrective actions.

- C. Verification that the established procedures were followed or a description and explanation why procedures were not followed.

Note: These records may be kept with other logs or records that the Permittee keeps for the BOF furnaces and their instrumentation and need not be kept as a separate record.

- e. The Permittee shall keep annual records (tons/year) of steel processed at the slag skimming station, the argon stirring station and ladle metallurgy furnace station.

- f. Emission Records

The Permittee shall keep the following records related to the emissions of the affected basic oxygen processes to verify compliance with the applicable limits in Conditions 7.5.6(b) through (g):

- i. A file containing the emission factors used by the Permittee to determine emissions of different pollutants from such processes, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the affected processes do not understate actual emissions, including review when emission testing is conducted for an affected process. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c), except that copies of the initial records shall be submitted to the Illinois EPA no later than August 3, 2012.
- ii. Records for any periods of operation of an affected process that are not otherwise addressed in the required records during which the established emission factor in Condition 7.5.9(f) (i) would understate actual emissions of the process, with description of the period of operation and an estimate of the additional emissions during such period that are not accounted for by the established factor, with supporting explanation and calculations.
- iii. Records for the annual emissions of such processes for comparison to the limits in Conditions 7.5.6(c) through (g), with supporting calculations.
- iv. Records for combined annual emissions of such affected processes, based on the summation of the above data, for comparison to the limits in Condition 7.5.6(b).

g. In the operational logs or other records for the operation of the affected basic oxygen processes, the Permittee shall keep records identifying process upsets that result in the generation of additional opacity or PM emissions, such as loss of the slag cover on the molten metal in a vessel or a spill of molten metal. For these upsets, these records shall include the time of the upset, a description of the upset, and a discussion of the consequences for PM emissions from the affected basic oxygen processes.

h. Records for Malfunctions or Breakdowns

Pursuant to 35 IAC 201.263, the Permittee shall maintain records of continued operation of the affected Basic Oxygen Furnace and Ladle Metallurgy Furnace as addressed by Condition 7.5.5-2(b), during malfunctions or breakdowns, which at a minimum, shall include the following records. The preparation of these records shall be completed within 45 days of an incident, unless the Permittee conducts a root cause analysis for the incident, in which case the preparation of these records, other than the root cause analysis, shall be completed within 120 days of the incident.

i. Date, time and duration of the incident.

ii. A detailed description of the incident, including:

A. A chronology of significant events during and leading up to the incident.

B. Relevant operating data for the unit, including information such as operator log entries and directives provided by management during the incident.

C. The measures taken to reduce the quantity of emissions and the duration of the incident including the resources utilized to address the incident.

D. The magnitude of emissions during the incident.

iii. An explanation why continued operation of an affected basic oxygen furnace was necessary to prevent personnel injury or prevent equipment damage.

iv. A discussion of the cause(s) or probable cause(s) of the incident including the following,

A. Whether the incident was sudden, unavoidable, or preventable, including:

1. Why the equipment design did not prevent the incident;

2. Why better maintenance could not have avoided the incident;
 3. Why better operating practices could not have avoided the incident; and
 4. Why there was no advance indication for the incident.
- B. Whether the incident stemmed from any activity or event that could have been foreseen, avoided or planned for.
- C. Whether the incident was or is part of a recurring pattern indicative of inadequate design, operation or maintenance.
- v. A description of any steps taken or to be taken to prevent similar future incidents or reduce their frequency and severity.
- vi. As an alternative to keeping the records required by Condition 7.5.9(g) (iv), the Permittee may perform a root cause analysis. For this purpose, a root cause analysis is an analysis whose purpose is to determine, correct and eliminate the primary causes of the incident and the excess emissions resulting there from. If the Permittee performs a root cause analysis method that would define the problem, define all causal relationships, provide a causal path to the root cause, delineate the evidence, and provide solutions to prevent a recurrence. Such an analysis shall be completed within one year of the incident.

7.5.10 Reporting Requirements

- a. 40 CFR Part 63, Subpart FFFFFF (40 CFR 63.7841)
- i. Compliance report due dates. Unless the Administrator has approved a different schedule, the Permittee shall submit a semiannual compliance report to the permitting authority according to the following requirements:
 - A. Semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
 - B. Each compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

- ii. Compliance report contents. Each compliance report shall include the following information:
 - A. Company name and address.
 - B. Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
 - C. Date of report and beginning and ending dates of the reporting period.
 - D. If the Permittee had a startup, shutdown, or malfunction during the reporting period and the Permittee took actions consistent with the source's startup, shutdown, and malfunction plan, the compliance report must include the information in 40 CFR 63.10(d)(5)(i).
 - E. If there were no deviations from the continuous compliance requirements in 40 CFR 63.7833 and 63.7834 that apply to the Permittee, a statement that there were no deviations from the emission limitations or operation and maintenance requirements during the reporting period.
 - F. If there were no periods during which a continuous monitoring system (including a CPMS, COMS, or continuous emission monitoring system (CEMS)) was out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.
 - G. For each deviation from an emission limitation in 40 CFR 63.7790 that occurs at each Basic Oxygen Process where the Permittee is not using a continuous monitoring system (including a CPMS, COMS, or CEMS) to comply with an emission limitation in 40 CFR Subpart FFFFF, the compliance report must contain the information described in Condition 7.5.10(a)(ii)(A) through (F) and the following information (this includes periods of startup, shutdown, and malfunction):
 - 1. The total operating time of each Basic Oxygen Process during the reporting period.

2. Information on the number, duration, and cause of deviations (including unknown cause, if applicable) as applicable and the corrective action taken.
- H. For each deviation from an emission limitation occurring at each Basic Oxygen Furnace Process where the Permittee is using a continuous monitoring system (including a CPMS or COMS) to comply with the emission limitation in 40 CFR 63 Subpart FFFFF, the Permittee shall include the following information (this includes periods of startup, shutdown, and malfunction):
1. The date and time that each malfunction started and stopped.
 2. The date and time that each continuous monitoring was inoperative, except for zero (low-level) and high-level checks.
 3. The date, time, and duration that each continuous monitoring system was out-of-control as specified in 40 CFR 63.8(c)(7), including the information in 40 CFR 63.8(c)(8).
 4. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.
 5. A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
 6. A breakdown of the total duration of the deviations during the reporting period including those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.
 7. A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source

operating time during the reporting period.

8. A brief description of the Basic Oxygen Processes.
9. A brief description of the continuous monitoring system.
10. The date of the latest continuous monitoring system certification or audit.
11. A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

iii. Immediate startup, shutdown, and malfunction report. If the Permittee had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with the source's startup, shutdown, and malfunction plan, the Permittee shall submit an immediate startup, shutdown, and malfunction report according to the requirements in 40 CFR 63.10(d)(5)(ii).

b. Monthly Opacity Exceedance Report.

Monthly opacity exceedance reports for the BOF ESP shall be sent to the Illinois EPA Regional Office. 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 reports shall also specify the dates of those periods during which the continuous monitoring system was not in operation [Section 39.5(7)(f)(ii) of the Act].

c. Reporting Requirements from Permit 08110016:

After the initial year of operation (12 calendar months) of the BOF with an ESP with four fans, the Permittee shall submit a report to the Illinois EPA that evaluates the impacts of the addition of a fourth fan to the ESP on the particulate matter emissions of the BOF. This report shall, at a minimum, include the following information and address impacts on both stack emissions of particulate matter (i.e., emissions from the ESP stack) and uncaptured emissions of particulate matter (e.g., emissions from the roof monitor of the BOPF Shop). This report shall be

submitted by the end of the third month following the initial year of operation with an ESP with four fans.

- i. A description of typical operating scenarios in which the availability of a spare fan resulted in a decrease in short-term emissions, with an assessment of the changes in the hourly emission rates, with supporting documentation and calculations.
 - ii. A description of typical operating scenarios, if any, in which the availability of a spare fan resulted in an increase in short-term emissions, with an assessment of the changes in the hourly emission rates, with supporting documentation and calculations.
 - iii. An assessment of the overall effect of the addition of a fourth fan on actual annual emissions of the BOF, with supporting operating data and calculations.
- d. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the Basic Oxygen Furnace Processes from applicable requirements, unless a NESHAP standard specifies a different timeframe, as follows:
- A. Requirements in Condition 7.5.3.
 - B. Requirements in Condition 7.5.5-1.
 - C. Requirements in Condition 7.5.5-3.
 - D. Requirements in Condition 7.5.6(a) through (k).
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- iii. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- iv. All required deviation reports described in Condition 7.5.10(d) above shall contain the following information:
- A. Date, time and duration of the deviation;
 - B. Description of the deviation;
 - C. Probable cause of the deviation; and

- D. Any corrective action or preventative measures taken.
- e. Reporting on malfunction and breakdown shall be performed in accordance with Condition 5.10.5-2
- f. Reporting Requirements from Permit 10080021:
 - i. Within six months of initial startup of the steam rings on the affected BOFs, the Permittee shall submit to the Illinois EPA: 1) A Project Report; and 2) A draft of the Permittee's written operating procedures for the steam rings, as required by Condition 7.5.5-3(c), for review and comment by the Illinois EPA. This Project Report shall include the following:
 - A. An assessment, with supporting documentation, of the effect of the steam rings on the opacity and, as feasible, particulate loading of the exhaust from the roof monitor of the BOPF Shop during refining, correlated with the rate of steam injection and other operating parameters of the BOF's and their control system; and
 - B. An identification of circumstances, if any, in which the steam rings must be operated to maintain compliance with applicable emission standards.
 - ii. The Permittee shall submit reports to the Illinois EPA on a semi-annual basis that include the following information for the operation of the steam rings on the affected BOFs:
 - A. Total number of heats during the reporting period.
 - B. Number of heats during the reporting period without steam rings operating properly, by type of incident, e.g., breakdown of the steam ring interrupting operation, malfunction of the steam ring with insufficient steam flow, or breakdown of support system.
- g. Reporting on the Federal SSM authorization shall be performed in accordance with Condition 5.10.5-3.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

The Basic Oxygen Furnaces shall only be operated as top oxygen injected vessels, except that, for purposes of checkout and emission testing only, the furnaces may be operated as peripheral and bottom oxygen injected furnaces for a maximum of

120 days. Any further operation of the furnaces as other than top oxygen injected vessels shall be pursuant to a permit granted for such additional operation [72080043].

7.5.12 Compliance Procedures

- a. Compliance with the applicable standards of Condition 7.5.3 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.5 of this permit.
- b. Compliance with the production/emission limits of Conditions 7.5.6 and 5.6.2 is addressed by the work practices, testing monitoring, recordkeeping and reporting requirements in Sections 7.5 and 5 of this permit.

7.5.13 Compliance Schedule and Current Enforcement Status

- a. The Permittee shall comply with the following schedule of compliance applicable to BOF shop emissions and established in accordance with modified Consent Order 05-CH-750 (December 23, 2009):

Commitment	Timing
Certify compliance	March 31, 2011

- b. Submittal of Progress Reports

Quarterly Progress Reports shall be submitted beginning with September 2011 and ending upon the achievement of compliance. Each quarterly report shall be submitted no later than 5 days after the end of the corresponding calendar month. The Progress Report shall contain at least the following:

- i. The required date for achieving commitments, and actual dates when such commitments were achieved.
 - ii. Any commitments accepted by the Permittee or otherwise established for the affected BOF as part of the resolution of the above referenced Consent Order, with the associated timing for each commitment.
 - iii. A discussion of progress in complying with commitments that are subject to future deadlines.
 - iv. If any commitment was not met, an explanation of why the required timeframe or commitment was not met, and any preventive or corrective measures adopted to achieve required commitment.
- c. After completion of all required commitments and certification of compliance, as identified in Condition

7.5.13(a) no further Quarterly Progress Reports are required to be submitted.

7.5.14 State-Only Conditions

State-only conditions are not being established.

7.6 Continuous Casting

7.6.1 Description

There are two continuous casting lines in operation in the caster building. Ladles of molten steel are hoisted by crane and placed in revolving turrets located at the top of the casters. Each turret holds two ladles at a time. When one ladle of steel has been cast the turret is rotated and the second ladle is tapped. The empty ladle is then replaced with a full one. The tapping process involves opening the taphole located on the bottom of the ladle and allowing the molten steel to flow into an intermediate chamber called a "Tundish". The Tundish has a taphole in the bottom through which the molten steel flows directly into the casters. The Tundish maintains a steady stream of molten steel flowing into the caster while ladles are being changed.

The molten steel from the casters continuously passes through a system of rollers and straighteners. Water is sprayed onto the slab throughout this process to complete the solidification of the slab.

Note: This narrative description is for informational purposes only and is not enforceable.

7.6.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Continuous Casting	Steel Deslagging Station	Pre-1986	None
	Caster Molds 1 and 2	Pre-1990	None
	Casters #1 and #2: Spray Chambers	Pre-1981 (#1) Around 1988 (#2)	None
	Slab Cut-off	N/A	None
	Slab Ripping	N/A	None

7.6.3 Applicable Provisions and Regulations

- a. The "affected continuous casting operations" for the purpose of these unit-specific conditions are the operations and emission units described in Conditions 7.6.1 and 7.6.2.
- b. Pursuant to 35 IAC 212.458(b) and (c), the affected continuous casting operations shall comply with the following:

No person shall cause or allow emissions of PM₁₀, other than that of fugitive particulate matter, into the atmosphere to exceed the following limits during any one hour period:

- i. 22.9 mg/scm (0.01 gr/scf) from any process emissions unit provided however that this limit shall not apply if there are no visible emissions, except if a stack test is performed, the absence of visible emissions is not a defense to a finding of violation [35 IAC 212.458(b) (7) and (c)]; and
- ii. 5 percent opacity for continuous caster spray chambers or continuous casting operations [35 IAC 212.458(b) (8)].

Note: These standards currently do not apply to slab cut-off and slab ripping processes which are not vented through stacks.

- c. Pursuant to 35 IAC 212.316(f), the affected continuous casting operations shall comply with the following:

No person shall cause or allow fugitive particulate matter emissions from any emission unit to exceed an opacity of 20 percent.

7.6.4 Non-Applicability of Regulations of Concern

- a. The emission limitations of 35 IAC 212.324 are not applicable to any emission unit subject to a specific emissions standard or limitation contained in 35 IAC Part 212 Subpart R, Primary and Fabricated Metal Products and Machinery Manufacture, pursuant to 35 IAC 212.324(a) (3).
- b. The affected continuous casting operations are not subject to 40 CFR Part 63 Subpart FFFFF, Integrated Iron and Steel Manufacturing, because continuous casting is not defined as part of BOPF and shop ancillary operations in 40 CFR 63.7782(c).
- c. The affected continuous casting operations are not subject to 35 IAC 212.309 and 212.310 because those operations are not identified in 35 IAC 212.304 through 212.308.

7.6.5 Control Requirements and Work Practices

Pursuant to 35 IAC 212.450, particulate matter emissions from liquid steel charging in continuous casting operations shall be controlled by chemical or mechanical shrouds.

7.6.6 Production and Emission Limits from Permit 95010001 [T1]:

- a. Emissions from Deslagging Station and associated Material Handling System (see Section 7.1) shall not exceed the following limits:

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

- b. Emissions from Caster Molds - Casting shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Factor (Lbs/Ton)</u>	<u>Maximum Emissions (Tons/Yr)</u>
PM	0.006	10.74
PM ₁₀	0.006	10.74
NO _x	0.050	89.50

- c. Emissions from Casters Spray Chambers shall not exceed the following limits:

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

- d. Emissions from Slab Cut-off shall not exceed the following limits:

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

- e. Emissions from Slab Ripping shall not exceed the following limits:

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

- f. Total Emissions from Continuous Casting operations shall not exceed the following limits:

	PM (Tons/Yr)	PM ₁₀ (Tons/Yr)	NO _x (Tons/Yr)
Continuous Casting Operations	71	71	90.0

- g. Compliance with annual limits shall be determined on a calendar year basis [T1].

7.6.7 Testing Requirements

- a. The Permittee shall conduct opacity observations for the affected continuous casting operations as specified below [Sections 39.5(7) (d) and (p) of the Act]:
- i. Semi-annual observations shall be performed by a qualified observer in accordance with USEPA Method 9 for each spray chamber stack and continuous caster building openings while the casters are operating. The duration of opacity observations for each stack and the building shall be at least 30 minutes unless no visible emissions are observed from a stack or the building during the first 12 minutes of observations.
 - ii. Upon written request by the Illinois EPA, additional opacity observations shall be conducted within 5 operating days from the date of the request or by the date agreed upon by the Illinois EPA, whichever is later. For these observations:
 - A. The Permittee shall notify the Illinois EPA at least 24 hours in advance of the date and time of these observations, in order to enable the Illinois EPA to witness the observations. This notification shall include the name and employer of the qualified observer(s).
 - B. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for observations.
 - C. The duration of these observations shall be three hours for each spray chamber stack.
 - D. The Permittee shall provide a copy of the current certification for the opacity observer and observer's readings to the Illinois EPA at the time of the observations, if the Illinois EPA personnel are present.
- b. The Permittee shall have emission tests conducted for the PM/PM₁₀ emissions of the spray chambers of the affected continuous casting operations as specified below to verify

compliance with emission limits in Condition 7.6.6(c)
[Sections 39.5(7)(d) and (p) of the Act]:

- i. A. Emission testing shall be conducted within 30 months of the effective date of this permit condition. This testing shall be conducted for one caster as selected by the Illinois EPA.
- B. Upon written request from the Illinois EPA, additional emission testing shall be conducted within 90 operating days from the date of the request or by the date agreed upon by the Illinois EPA, whichever is later.
- ii. The following USEPA test methods shall be used for this testing, unless another USEPA method is approved by the Illinois EPA:
 - A. Location of Sample Points Method 1
 - B. Gas Flow and Velocity Method 2
 - C. Flue Gas Weight Method 3
 - D. Moisture Method 4
 - E. PM/PM₁₀ Methods 5, 201 or 201A
- iii. Observations for visible emissions and opacity shall be conducted during all emission tests in accordance with USEPA Methods 22 and 9, respectively, and the results of these observations included in the reports for emission testing.
- iv. For this emission testing, test notifications and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.

7.6.8 Monitoring Requirements

The Permittee shall perform monthly inspections of the continuous casting operations. These inspections shall include [Sections 39.5(7)(a) and (d) of the Act]:

- a. Inspection of the mechanical shrouds on the continuous casting operations to ensure their physical presence and integrity.
- b. Observations for visible emissions from stacks conducted in accordance with Method 22. If visible emissions are observed, opacity observations by Method 9 shall be conducted within one week.

7.6.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected continuous casting operations, pursuant to Sections 39.5(7) (a) and (e) of the Act:

- a. Amount of steel cast (ton/mo and ton/yr).
- b. The Permittee shall maintain records of the inspections required by Condition 7.6.8.
- c. The Permittee shall keep the following records related to the emissions of the affected continuous casting operations:
 - i. A file containing the emission factors used by the Permittee to determine emissions of different pollutants from the various affected operations, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the affected operations do not understate actual emissions. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
 - ii. Records for any periods of operation of an affected operations that are not otherwise addressed in the required records during which the established emission factor in Condition 7.6.9(c) (i) would understate actual emissions, with description of the period of operation and an estimate of the additional emissions during such period that would not be accounted for by the established factor, with supporting explanation and calculations.
 - iii. Records for the annual emissions of the various affected operations for comparison to the limits in Conditions 7.6.6(a) through (e), with supporting calculations.
 - iv. Records for combined annual emissions of the affected continuous casting operations, based on the summation of the above data, for comparison to the limits in Condition 7.6.6(f).
- d. The Permittee shall keep records for all opacity readings for the affected continuous casting operations conducted in accordance with Condition 7.6.7.

7.6.10 Reporting Requirements

- a. i. Pursuant to Section 39.5(7) (f) (ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by

the affected continuous casting operations from applicable requirements, as follows:

- A. Requirements in Condition 7.6.3(b) and (c).
- B. Requirements in Condition 7.6.6.
 - ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- b. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- c. All deviation reports described in Condition 7.6.10 above shall contain the following:
 - i. Date, time and duration of the deviation;
 - ii. Description of the deviation;
 - iii. Probable cause of the deviation; and
 - iv. Any corrective action or preventive measures taken.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected continuous casting operations.

7.6.12 Compliance Procedures

For affected continuous casting, compliance with the applicable standards of Conditions 7.6.3(b) and (c) and with the limitations of Condition 7.6.6 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.6 of this permit.

7.6.13 State-Only Conditions

State-only conditions are not being established.

7.7 Hot Strip Mill Reheat Furnaces

7.7.1 Description

Steel slabs are heated in the slab reheat furnaces, so they can be formed further in the facility's hot strip mill. Some of the slabs are shipped to the facility from outside suppliers.

The following fuels or combination of these fuels are fired by all the four furnaces: natural gas and coke oven gas (COG). In the past, the reheat furnaces also fired oil, but they no longer have that capability.

Note: This narrative description is for informational purposes only and is not enforceable.

7.7.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Reheat Furnaces	Slab Reheat Furnaces #1, #2 & #3 equipped with low-NO _x burners Nominal firing rate: 322 mmBtu/hr each	Pre-1972	None
	Slab Reheat Furnace #4 equipped with low-NO _x burners Nominal firing rate: 495 mmBtu/hr	Pre-1977	None

7.7.3 Applicable Provisions and Regulations

- a. The "affected slab reheat furnaces" for the purpose of these unit-specific conditions, are the emission/production units as described in Conditions 7.7.1 and 7.7.2 above.
- b. The affected slab reheat furnaces are subject to 35 IAC 212.458(b)(10) and (c), which provide that no person shall cause or allow emissions of PM₁₀, other than that of fugitive particulate matter, into the atmosphere to exceed 38.7 ng/J (0.09 lbs/mmBtu) of heat input from the slab furnaces at steel plants in the vicinity of Granite City during any one hour period, provided however that this limit shall not apply if there are no visible emissions, except if a stack test is performed, the absence of visible emissions is not a defense to a finding of violation.
- c. The affected slab reheat furnace #4 is subject to 35 IAC 212.321(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, which either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.321(c) (See also Attachment 2) [35 IAC 212.321(a)].

- d. The affected slab reheat furnaces #1, #2 and #3 are subject to 35 IAC 212.322(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar existing process emission units at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.322(c) (See also Attachment 2) [35 IAC 212.322(a)].

- e. Pursuant to 35 IAC 214.301, the affected slab reheat furnaces shall comply with the following: no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.
- f. Pursuant to 35 IAC 212.123(a), the affected slab reheat furnaces shall comply with the following: no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.
- g. Pursuant to 35 IAC 212.458(b) (7) and (c), the affected slab reheat furnaces shall comply with the following:

No person shall cause or allow emissions of PM₁₀, other than that of fugitive particulate matter, into the atmosphere to exceed the following limits during any one hour period:

22.9 mg/scm (0.01 gr/scf) from any process emissions unit provided however that this limit shall not apply if there are no visible emissions, except if a stack test is performed, the absence of visible emissions is not a defense to a finding of violation [35 IAC 212.458(b) (7) and (c)].

7.7.4 Non-Applicability of Regulations of Concern

- a. The emission limitations of 35 IAC 212.324 are not applicable to the affected slab reheat furnaces, because

they are subject to a specific emissions standard or limitation contained in 35 IAC Part 212 Subpart R, pursuant to 35 IAC 212.324 (a) (3).

- b. The affected slab reheat furnaces are not subject to 40 CFR Part 63 Subpart FFFFF, Integrated Iron and Steel Manufacturing, because reheat furnaces are not covered by this NESHAP [see 40 CFR 63.7782(c)].
- c. This permit is issued based on the Permittee not being subject to the work practice and recordkeeping requirements of 35 IAC 212.324(f) because the affected slab reheat furnaces do not use air pollution control equipment for particulate matter.

7.7.5 Startup Provisions

- a. Pursuant to 35 IAC 201.149 and Part 201 Subpart I, subject to the following terms and conditions for affected slab reheat furnaces, the Permittee is authorized to violate the applicable opacity standards in 35 IAC 212.123(a) of Condition 7.7.3(f) during startup.

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally describing the efforts that will be used "...to minimize startup emissions, duration of individual starts, and frequency of startups".

- i. This authorization does not relieve the Permittee from the continuing obligation to demonstrate that all reasonable efforts are made to minimize startup emissions, duration of individual startups and frequency of startups.
- ii. The Permittee shall conduct startup of the affected slab reheat furnaces in accordance with written procedures prepared by the Permittee and maintained at the source (see Condition 7.7.10(d) (i)) for the affected slab reheat furnaces, that are specifically developed to minimize emissions from startups and that include, at a minimum:
 - A. A review of the operational condition of the affected reheat furnaces prior to initiating startup of the furnaces;
 - B. Initiation of startups to provide adequate time to implement the established startup procedures;
 - C. Sequential startup of the burners in the different zones of each furnace; and
 - D. Temperature levels achieved during startup.

- iii. The Permittee shall fulfill applicable recordkeeping of Condition 7.7.10(d).
- iv. The Permittee shall fulfill applicable reporting of Condition 5.10.5-1.
- b. As provided by 35 IAC 201.265, an authorization in a permit for excess emissions during startup does not shield a Permittee from enforcement for any violation of applicable emission standard(s) that occurs during startup and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.7.6 Control Requirements and Work Practices

- a. Pursuant to Permit 06070022, the affected slab reheat furnaces shall be equipped, operated, and maintained with low NO_x burners. The low NO_x burners shall be operated and maintained in conformance with good air pollution control practices. These low-NO_x burners shall be operated in the following zones of the affected slab reheat furnace [T1R]:
 - i. Slab reheat furnaces #1 through #3: heat and intermediate zones; and
 - ii. Slab reheat furnace #4: heat zone.
- b. The affected slab reheat furnaces are allowed to burn natural gas and coke oven gas only as a fuel [Section 39.5(7)(a) of the Act].

7.7.7 Operating and Emission Limits

The following operating and emission limits are established for the affected slab reheat furnaces [06070022, T1]:

- a. Operation of the affected slab reheat furnaces shall not exceed the following limits:

Emission Unit	Total Gas Usage (mmBtu/year)	COG Usage (mmBtu/year)
Slab Reheat Furnace #3	1,654,304	1,187,790
Slab Reheat Furnace #4	2,206,238	1,544,367
Total (Furnaces 1-4)	7,169,150	2,421,388

- b. Emissions of NO_x from the affected slab reheat furnaces shall not exceed the following limits:

Furnace	Limit (Lbs/mmBtu)
Slab Reheat Furnace #1	0.150
Slab Reheat Furnace #2	0.150
Slab Reheat Furnace #3	0.264
Slab Reheat Furnace #4	0.283

- c. Emissions of NO_x from the affected slab reheat furnaces (combined) shall not exceed 73 tons/month and 724.09 tons/year.
- d. Compliance with above annual limits shall be determined from a running total of 12 months of data.

7.7.8 Testing Requirements

- a. Pursuant to Section 39.5(7)(d) and (p) of the Act, the Permittee shall conduct a performance test on each affected slab reheat furnace within 18 months of the effective date of this permit condition and furnish the Illinois EPA a written report of the results of such test(s).

i. These tests shall be conducted while the reheat furnace is firing COG at the maximum level in the normal mix of fuel for the furnace.

ii. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: 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
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
NO _x	USEPA Method 7E or 19

- b. The Permittee shall conduct tests for PM/PM₁₀ and NO_x emissions of the affected reheat furnaces upon written request from the Illinois EPA, for furnace(s) and fuel mix, as specified in the request. This testing shall be completed within 90 days of the request of by such later date agreed to by the Illinois EPA. For NO_x, this testing shall be conducted in accordance with Condition 7.7.8(a)(i). For PM/PM₁₀, testing shall be conducted using USEPA Test Methods as specified in 35 IAC 212.108(a).
- c. For all required emission tests, the Permittee shall conduct opacity observations in accordance with USEPA Method 9 during each run and report the results in the test report. The duration of observations for each run shall be 30-minutes unless visible emissions are not observed during

the first 12 minutes. Notwithstanding the above, if weather conditions during the period of testing are not suitable for conducting opacity observations, observations may be conducted within 48 hours of the time of testing, in which case, the duration of observations shall be 3 hours unless visible emissions are not observed during the first 36 minutes of observations.

- d. With the reports for all emission testing, the Permittee shall also provide the sulfur content of the COG being combusted during the period of testing, as measured by the monitoring system for COG, and sulfur content of the mixed fuel combusted during the period of testing, with supporting calculations.
- e. For this emission testing, test notifications and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.

7.7.9 Monitoring Requirements

The affected slab reheat furnaces are subject to the following monitoring requirements, pursuant to Sections 39.5(7)(a) and (d) of the Act:

- a. The Permittee shall conduct opacity observations for each affected slab reheat furnace on a semi-annual basis, in accordance with USEPA Method 9, for a minimum of 30 minutes per furnace, unless no visible emissions are observed during the first 12 minutes of observations. The results of these observations shall be reported to the Illinois EPA within 45 days after each observation is conducted.
- b. Unless annual performance tests or continuous monitoring for emissions of NO_x is being conducted for an affected slab reheat furnace pursuant to 35 IAC Part 217, Subpart D, the Permittee shall perform combustion evaluations/inspections of the burners on each affected slab reheat furnace on a regular basis, including inspections of the various components of the burner for their condition and proper functioning, and diagnostic measures of the NO_x concentration in the exhaust of the furnace before and after performance evaluation. These inspections/evaluations shall be conducted on a semi-annual basis if accommodated by the schedule for maintenance outages on an affected furnace, and otherwise on at least an annual basis.

7.7.10 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected slab reheat furnaces, pursuant to Sections 39.5(7)(a) and (e) of the Act:

- a. i. Records for heat input:

- A. For COG (mmBtu/month and mmBtu/year) for all affected slab reheat furnaces (combined) and for furnaces #3 and #4 (individually).
 - B. For natural gas (mmBtu/month and mmBtu/year) for all affected slab reheat furnaces (combined) and for furnaces #3 and #4 (individually).
 - ii. Records for the amount for each type of fuel used (mmscf/mo).
- b. A log or other records that will serve to identify the fuel or fuels being fired during each hour in each affected reheat furnace:
 - i. For furnaces # 1, 2 and 3, whether natural gas or COG is being fired.
 - ii. For furnace #4, the setting for the mix of natural gas and COG that is being fired.
- c. Records for all emission tests and opacity observations for the affected slab reheat furnaces.
- d. Records for Startups of Affected Slab reheat furnaces, pursuant to Section 39.5(7) (b) of the Act
 - i. The Permittee shall maintain startup procedures for each affected slab reheat furnace, as required by Condition 7.7.5(a) (ii).
 - ii. The Permittee shall maintain the following records for each startup of an affected furnace:
 - A. Date, time and duration of the startup.
 - B. A description of the startup and reason(s) for the startup.
 - C. Whether a violation of an applicable standard may have occurred during startup accompanied by the information in Condition 7.7.9(d) (iv) if a violation may have or did occur.
 - D. Whether the established startup procedures, maintained above, were followed accompanied by the information in Condition 7.7.9(d) (iii) if there were departure(s) from those procedures.
 - iii. If the established startup procedures were not followed during a startup, the Permittee shall maintain the following records:

- A. A description of the departure(s) from the established procedures.
 - B. The reason(s) for the departure(s) from the established procedures.
 - C. An explanation of the consequences of the departure(s) for emissions, such as whether the departure(s) prolonged the startup or resulted in additional emissions, and if so,
 - 1. The actions taken to minimize emissions and the duration of the startup; and
 - 2. An explanation whether similar incidents might be prevented in the future and if so, the corrective actions taken or to be taken to prevent similar incidents.
- iv. If a violation did or may have occurred during a startup, the Permittee shall maintain the following records:
- A. Identification of the applicable standard(s) that were or may have been violated.
 - B. An explanation of the nature of such violation(s), including the magnitude of such excess emissions.
 - C. A description of the actions taken to minimize the magnitude of emissions and duration of the startup.
 - D. An explanation whether similar incidents could be prevented or ameliorated in the future and if so, a description of the actions taken or to be taken to prevent similar incidents in the future.
- e. A maintenance and repair log for each affected slab reheat furnace, listing each activity performed with date.
- f. The following records related to the emissions of PM/PM₁₀, SO₂, and NO_x from the affected slab reheat furnaces:
- i. A file containing the emission factors used by the Permittee to determine emissions of pollutants other than SO₂ from the affected slab reheat furnaces, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the affected furnace do not understate actual emissions. These records shall be

prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).

- ii. If different emission factors are used for furnaces #1 and #2, records for the individual usage of fuels by these furnaces (scf/month and scf/year).
- iii. Records of emissions of PM/PM₁₀, SO₂, NO_x from the affected slab reheat furnaces (tons/month and tons/year), with supporting calculations.

7.7.11 Reporting Requirements

- a. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected slab reheat furnaces from applicable requirements, as follows:
 - A. Requirements in Condition 7.7.3(b) through (f).
 - B. Requirements in Condition 7.7.6.
 - C. Requirements in Condition 7.7.7.
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- b. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- c. All deviation reports described in Condition 7.7.11 above shall contain the following:
 - i. Date, time and duration of the deviation;
 - ii. Description of the deviation;
 - iii. Probable cause of the deviation; and
 - v. Any corrective action or preventive measures taken.
- d. Reporting on the State startup authorization shall be performed in accordance with Condition 5.10.5-1.

7.7.12 Operational Flexibility/Anticipated Operating Scenarios

No operational flexibility has been established for the affected slab reheat furnaces.

7.7.13 Compliance Procedures

For affected slab reheat furnaces, compliance with the applicable standards of Condition 7.7.3 and with the operating and emission limits of Condition 7.7.7 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.7 of this permit.

7.7.14 State-Only Conditions

Pursuant to 35 IAC 217.150, 217.152, and 217.160, by the applicable compliance date for 35 IAC Part 217 Subparts D and I, the Permittee shall comply with applicable requirements of these rules for the affected slab reheat furnaces, including:

- a. Certifying to the Illinois EPA that the affected slab reheat furnaces will be in compliance with the applicable emission limitation(s) of 35 IAC 217.244(a) by the applicable compliance date.
- b. Operation of each affected slab reheat furnaces in a manner consistent with good air pollution control practices to minimize NO_x emissions,
- c. Compliance with the applicable NO_x emission limitation(s) in accordance with 35 IAC 217.154 or 217.157.
- d. Compliance with the applicable monitoring, recordkeeping and reporting requirements in accordance with 35 IAC 217.157(b) and 217.156.

7.8 Finishing Operations

7.8.1 Description

Pickling Line:

Coils are processed in this unit to clean the steel and prepare it for other treatments such as cold rolling or galvanizing. At the start of the pickling line, the coils are unwound and the leading edge of each coil is trimmed off square. The leading edge of each coil is then spot (resistance) welded to the trailing edge of the previous coil. By joining the coils in this manner the pickling line runs a continuous ribbon of steel and does not need to be taken out of production to reload. After the steel coils are joined the steel is passed through an acid bath. This acid bath consists of four dip tanks arranged in series and uses a solution of hydrochloric acid and water to clean the surfaces of the steel sheet. A scrubbing system with mist eliminator is used to control hydrogen chloride emissions from this process. When the steel comes out of the fourth acid dip tank it is passed through a cold rinse tank in which cool water is used to rinse the acid off of the steel. The next step is to pass the steel through a hot rinse tank. In this tank hot water is used to rinse any remaining acid away from the steel and to raise the temperature of the steel to speed the drying process. The steel is then passed through a hot air dryer to complete the drying process. The steel that is to be shipped is coated with oil immediately prior to recoiling to inhibit corrosion. In the final step of the pickling process, the steel is recoiled.

Galvanizing Line Steel Preparation:

Steel coils that are to be galvanized in this unit are first joined end to end by spot (resistance) welding the leading edge of one coil to the trailing edge of another coil. The steel is then passed through a rinse station where it is rinsed with either a weak alkaline solution or a weak acid solution. The purpose of this rinse is to clean the steel and break down any oils that may be on the surfaces. The emissions from this unit are exhausted to a packed column wet scrubber. After cleaning and rinsing the steel is dried by a steam dryer.

Galvanizing Line Finishing Processes:

After the steel is coated with zinc, it is cooled and then dipped into a "Chem-treat" bath. This non-organic chemical puts a layer of rust-preventative on the steel. The steel is coated with oil to protect the surfaces, recoiled, and sprayed with edge sealer (oil) to protect the edges of the steel. The oil applied to the steel is a light petroleum based oil used to inhibit corrosion. Edge sealers are oils used to protect the edges of the steel and inhibit corrosion.

Note: This narrative description is for informational purposes only and is not enforceable.

7.8.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Finishing Operations	HCL Pickling Line	Pre-1973	Two Fume Scrubbers
	Galvanizing Line #7A; the line is comprised of the following significant components: <ul style="list-style-type: none"> • Cleaner section • Natural Gas furnace • Galvanizing pot • Miscellaneous heaters 	Pre-1973	Fume Scrubber
	Galvanizing Line #8; the line is comprised of the following significant components: <ul style="list-style-type: none"> • Cleaner Section (with fume scrubber) • Natural gas fired Furnace (with NO_x catalytic converter) • 2 Galvanizing Pots • Space Heaters • Miscellaneous Heaters • Melting Kettle Building and Storage Areas Heaters 	1995	Fume Scrubber; NO _x catalytic converter
	Coating Operations	Pre-1973	None

7.8.3 Applicable Provisions and Regulations

- a. The "affected finishing operations" for the purpose of these unit-specific conditions, are the emission units described in Conditions 7.8.1 and 7.8.2.
- b. Pursuant to 35 IAC 212.458(b) (7) and (c), the affected finishing operations shall comply with the following:

No person shall cause or allow emissions of PM₁₀, other than that of fugitive particulate matter, into the atmosphere to exceed the following limits during any one hour period:

22.9 mg/scm (0.01 gr/scf) from any process emissions unit provided however that this limit shall not apply if there are no visible emissions, except if a stack test is performed. The absence of visible emissions is not a defense to a finding of violation [35 IAC 212.458(b) (7) and (c)]

- c. The following process emission units in the affected finishing operation constructed or modified prior to April 14, 1972 are subject to IAC 212.322(a): cleaner section and galvanizing pot of Galvanizing Line #7A and coating operations. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (see also Attachment 2) [35 IAC 212.322(a)].
- d. The following process emission units in the affected finishing operation constructed or modified on or after April 14, 1972 are subject to IAC 212.321(a): cleaner section, two galvanizing pots and the melting kettle of Galvanizing Line #8. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced on or after April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 2) [35 IAC 212.321(a)].
- e. Coating operations performed as part of the affected finishing operations are subject to 35 IAC 219.204, with which the Permittee must comply by application of compliant coating as established by 35 IAC 219.204(d) for coil coating:
 - i. No owner or operator of an affected coil coating operation shall apply at any time any coating in which the VOM content exceeds the following emission limitations. The following emission limitation is expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator:

kg/llb/gal

0.20

1.7

- ii. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composites.
- f. The HCL pickling line operates as a part of the affected finishing operations and is subject to 40 CFR Part 63 Subpart CCC "National Emission Standards for Hazardous Air Pollutants for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants". Specific requirements of Subpart CCC are set forth later in this subsection.
- g. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.

7.8.4 Non-Applicability of Regulations of Concern

- a. The emission limitations of 35 IAC 212.324 are not applicable to any emission unit subject to a specific emissions standard or limitation contained in 35 IAC Part 212 Subpart R, pursuant to 35 IAC 212.324 (a) (3).
- b. This permit is issued based on the coating operations operated as a part of the affected finishing operations not being subject to 40 CFR 63 Subpart SSSS "National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil" pursuant to the definition of coating used by Subpart SSSS (Decorative, protective, or functional materials that consist only of solvents, protective oils, acids, bases, or any combination of these substances are not considered coatings for the purposes of Subpart SSSS).
- c. This permit is issued based on the coating operations operated as a part of the affected finishing operations not being subject to 40 CFR 63 Subpart MMMM "National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products" pursuant to definition of coating used by Subpart MMMM (Decorative, protective, or functional materials that consist only of solvents, protective oils, acids, bases, or any combination of these substances are not considered coatings for the purposes of Subpart MMMM).

- d. The pickling operations are not subject to 35 IAC 212.321 or 212.322 pursuant to 35 IAC 266.190.

7.8.5-1 NESHAP Emission Standards

- a. The affected pickling line is subject to 40 CFR 63.1157(a), which provides that no owner or operator of an existing affected continuous or batch pickling line at a steel pickling facility shall cause or allow to be discharged into the atmosphere from such line:
 - i. Any gases that contain HCl in a concentration in excess of 18 parts per million by volume (ppmv); or
 - ii. HCl at a mass emission rate that corresponds to a collection efficiency of less than 97 percent.
- b. This standard shall apply at all times, including startup, shutdown and malfunction/breakdown, as 40 CFR 63.6(f) has been vacated.

7.8.5-2 NESHAP Work Practices (Galvanizing Lines)

Affected Galvanizing Furnaces #7A and #8 as well as miscellaneous heaters on Galvanizing Line #8 are subject to the NESHAP, 40 CFR Part 63, Subpart DDDDD. Pursuant to 40 CFR 63.7499, these affected units are in the Gas 1 Subcategory for purposes of this NESHAP, as they only burn natural gas.

- a. Beginning on of the compliance date of this NESHAP, the Permittee must conduct a tune-up on each affected unit as follows:
 - i. For Galvanizing Furnaces #7A and #8, the Permittee must conduct a tune-up of each furnace annually [40 CFR 63.7540(a)(10)].
 - ii. For miscellaneous heaters on galvanizing line #8, the Permittee must conduct a biennial tune-up of each heater [40 CFR 63.7540(a)(11)].
 - iii. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup [40 CFR 63.7540(a)(12)].
- b. Pursuant to 40 CFR 63.7540(a)(10), each required tune-up shall consist of the following:
 - i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the burner inspection may be delayed until the next scheduled unit shutdown, but each burner must be inspected at least once every 36 months) [40 CFR 63.7640(a)(10)(i)];

- ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available [40 CFR 63.7640(a)(10)(ii)];
 - iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly [40 CFR 63.7640(a)(10)(iii)];
 - iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available [40 CFR 63.7640(a)(10)(iv)];
 - v. Measure the concentrations in the effluent stream of CO in parts per million, by volume (ppmv), and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made) [40 CFR 63.7640(a)(10)(v)].
- c. Pursuant to 40 CFR 63.7640(a)(10)(vi), the Permittee shall maintain on-site and submit, if requested by the Illinois EPA, an annual report containing the following for the required tune-ups:
- i. The concentrations of CO in the effluent stream in ppmv, and oxygen in volume percent, measured before and after the adjustments of the furnace;
 - ii. A description of any corrective actions taken as a part of the combustion adjustment; and
 - iii. The type and amount of fuel used over the 12 months prior to the annual adjustment, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

7.8.6 Control Requirements and Work Practices

- a. Hydrochloric acid storage vessels. The owner or operator of an affected vessel shall provide and operate, except during loading and unloading of acid, a closed-vent system for each vessel. Loading and unloading shall be conducted either through enclosed lines or each point where the acid is exposed to the atmosphere shall be equipped with a local fume capture system, ventilated through an air pollution control device [40 CFR 63.1159(b)].

Note: HCL storage tanks associated with the affected pickling line are insignificant activities addressed in

Section 3.0 of this permit. Loading and unloading is currently conducted through enclosed lines.

b. Maintenance requirements [40 CFR 63.1160(b)]

- i. The Permittee shall comply with the operation and maintenance requirements prescribed under 40 CFR 63.6(e) for the HCL pickling line.
- ii. In addition to the requirements specified in 40 CFR 63.6(e), the Permittee shall operate in accordance with an operation and maintenance plan that it prepares for each emission control device. Such plan shall be consistent with good maintenance practices and, for a scrubber emission control device, shall at a minimum address the following:
 - A. Require monitoring and recording the pressure drop across the scrubber once per shift while the scrubber is operating in order to identify changes that may indicate a need for maintenance;
 - B. Require the manufacturer's recommended maintenance at the recommended intervals on fresh solvent pumps, re-circulating pumps, discharge pumps, and other liquid pumps, in addition to exhaust system and scrubber fans and motors associated with those pumps and fans;
 - C. Require cleaning of the scrubber internals and mist eliminators at intervals sufficient to prevent buildup of solids or other fouling;
 - D. Require an inspection of each scrubber at intervals of no less than 3 months with:
 1. Cleaning or replacement of any plugged spray nozzles or other liquid delivery devices;
 2. Repair or replacement of missing, misaligned, or damaged baffles, trays, or other internal components;
 3. Repair or replacement of droplet eliminator elements as needed;
 4. Repair or replacement of heat exchanger elements used to control the temperature of fluids entering or leaving the scrubber; and

5. Adjustment of damper settings for consistency with the required air flow.
- E. If the scrubber is not equipped with a viewport or access hatch allowing visual inspection, alternate means of inspection approved by the Administrator may be used.
- F. The owner or operator shall initiate procedures for corrective action within 1 working day of detection of an operating problem and complete all corrective actions as soon as practicable. Procedures to be initiated are the applicable actions that are specified in the maintenance plan. Failure to initiate or provide appropriate repair, replacement, or other corrective action is a violation of the maintenance requirement of 40 CFR 63, Subpart CCC.
- G. The owner or operator shall maintain a record of each inspection, including each item identified in 40 CFR 63.1160(b)(2)(iv), that is signed by the responsible maintenance official and that shows the date of each inspection, the problem identified, a description of the repair, replacement, or other corrective action taken, and the date of the repair, replacement, or other corrective action taken.

7.8.7 Production and Emission Limits from Permit 95010005 [T1].

- a. The operation of Galvanizing Line #8 shall not exceed the following [T1]:
 - i. The maximum firing rate of the furnace shall not exceed 54.6 million British thermal units (mmBtu) per hour.
 - ii. The maximum firing rate of each of the five space heaters shall not exceed 3.44 mmBtu/hour.
 - iii. The total combined maximum firing rate of the building and storage area heaters shall not exceed 9.84 mmBtu/hour.
 - iv. The total combined natural gas usage of the 11 miscellaneous heaters shall not exceed 21,895 ft³/hour and 191.8 million ft³/year.
 - v. The operation of the melting kettle shall not exceed 32,000 tons of product/month and 384,000 tons of product/year.

- b. The emissions of Galvanizing Line #8 shall not exceed the following [T1]:
- i. Furnace
- A. The NO_x emissions of the furnace shall not exceed 2.07 lbs/hour and 9.04 tons/year.
- B. Emissions of other pollutants from the furnace shall not exceed the following limits:
- | | |
|---------------------|----------------|
| Carbon Monoxide: | 8.37 tons/year |
| Particulate Matter: | 0.72 tons/year |
| PM ₁₀ : | 0.72 tons/year |
| VOM: | 0.67 tons/year |
| SO ₂ : | 0.14 tons/year |
- ii. Five Space Heaters (total)
- A. The total combined NO_x emissions of the 5 space heaters shall not exceed 1.69 lbs/hour and 7.39 tons/year.
- B. Total emissions of other pollutants from the 5 space heaters shall not exceed the following limits:
- | | |
|---------------------|----------------|
| Carbon Monoxide: | 1.48 tons/year |
| Particulate Matter: | 0.22 tons/year |
| PM ₁₀ : | 0.22 tons/year |
| VOM: | 0.39 tons/year |
| SO ₂ : | 0.04 tons/year |
- iii. Drying Oven and the Building and Storage Area Heaters (total)
- A. The total combined NO_x emissions of the drying oven and the building and storage area heaters shall not exceed 0.97 lbs/hour and 4.29 tons/year.
- B. Total emissions of other pollutants from the drying oven and the building and storage area heaters shall not exceed the following limits:
- | | |
|---------------------|----------------|
| Carbon Monoxide: | 0.85 tons/year |
| Particulate Matter: | 0.13 tons/year |
| PM ₁₀ : | 0.13 tons/year |
| VOM: | 0.22 tons/year |
| SO ₂ : | 0.03 tons/year |

iv. Miscellaneous Heaters (total)

- A. Total combined NO_x emissions of the 11 miscellaneous heaters shall not exceed 2.19 lbs/hour and 9.60 tons/year.
- B. Total combined emissions of other pollutants from the 11 miscellaneous heaters shall not exceed the following limits:

Carbon Monoxide:	1.92 tons/year
Particulate Matter:	0.29 tons/year
PM ₁₀ :	0.29 tons/year
VOM:	0.51 tons/year
SO ₂ :	0.06 tons/year

v. Cleaner Section

Emissions of particulate matter from the cleaner section, which is controlled with a fume scrubber, shall not exceed 0.24 lbs/hour and 1.06 tons/year.

vi. Melting Kettle

Particulate matter emissions from the melting kettle shall not exceed 0.16 tons/month and 1.92 tons/year.

vii. Other emission units

Emissions of NO_x, CO, PM, VOM and SO₂ from the welder, two galvanizing pots and chemical treatment tank shall not exceed negligible rates of 0.1 lb/hour and 0.44 tons/year for each pollutant from each such emission unit.

- c. Compliance with annual limits 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) [T1].

7.8.8 Testing Requirements

- a. For testing emissions of the HCl Pickling Line pursuant to 40 CFR 63, Subpart CCC:
 - i. The Permittee shall use the following test methods in Appendix A of 40 CFR Part 60 pursuant to 40 CFR 63.1161(d), unless an equivalent alternative measurement method is approved by the Administrator, to determine compliance under 40 CFR 63.1157(a):
 - A. Method 1, to determine the number and location of sampling points, with the exception that no traverse point shall be within one inch of the stack or duct wall;

- B. Method 2, to determine gas velocity and volumetric flow rate;
- C. Method 3, to determine the molecular weight of the stack gas;
- D. Method 4, to determine the moisture content of the stack gas; and
- E. Method 26A, "Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources—Isokinetic Method," to determine the HCl mass flows at the inlet and outlet of a control device or the concentration of HCl discharged to the atmosphere, and also to determine the concentration of Cl₂ discharged to the atmosphere from acid regeneration plants. If compliance with a collection efficiency standard is being demonstrated, inlet and outlet measurements shall be performed simultaneously. The minimum sampling time for each run shall be 60 minutes and the minimum sample volume 0.85 dry standard cubic meters (30 dry standard cubic feet). The concentrations of HCl and Cl₂ shall be calculated for each run as follows:

$$C_{\text{HCl}} \text{ (ppmv)} = 0.659 C_{\text{HCl}} \text{ (mg/dscm)},$$

$$\text{and } C_{\text{Cl}_2} \text{ (ppmv)} = 0.339 C_{\text{Cl}_2} \text{ (mg/dscm)},$$

where C(ppmv) is concentration in ppmv and C(mg/dscm) is concentration in milligrams per dry standard cubic meter as calculated by the procedure given in Method 26A.

- ii. Pursuant to 40 CFR 63.1162(a)(1), the Permittee shall conduct performance tests a minimum of once every 2 years to measure the HCl mass flows at the control device inlet and outlet or the concentration of HCL exiting the control.
 - iii. If any performance test shows that the HCL emission limitation is being exceeded, then the owner or operator is in violation of the emission limit.
- b. Upon written request from the Illinois EPA, emission tests shall be conducted by the Permittee for the furnace, melting kettle and cleaner section (all of galvanizing line #8) to verify compliance with emission limits in Condition 7.8.7, as follows [Section 39.5(7)(d) and (p) of the Act].

- i. The following USEPA test methods shall be used, unless another USEPA method is approved by the Illinois EPA.
 - A. Location of Sample Points Method 1
 - B. Gas Flow and Velocity Method 2
 - C. Flue Gas Weight Method 3
 - D. Moisture Method 4
 - E. PM/PM₁₀ (furnace, kettle, and cleaner section) Methods 5, 201 or 201A
 - vi. NO_x (furnace) Method 7E or 19
 - ii. Observations of opacity shall be conducted during these emission tests in accordance with Method 9 and the results of these observations included in the reports for emission testing.
- c. Upon written request by the Illinois EPA, the Permittee shall conduct opacity observations from any finishing operation, as specified in the request, as follows [Sections 39.5(7) (d) and (p) of the Act]:
- i. These observations shall be conducted within 45 calendar days of the requires or by the date agreed upon by the Illinois EPA, whichever is later.
 - ii. The readings shall be performed by a qualified observer in accordance with USEPA Method 9 while the affected finishing operation is operating.
- d. For this testing, test notifications and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.

7.8.9 Monitoring Requirements

- a. For the affected pickling line, the Permittee shall comply with the following requirements of 40 CFR 63.1160(b) (2) and 63.1162(a) (2) Section 39.5(7) (a):
 - i. The Permittee shall operate, and maintain systems for the measurement and recording of the scrubber makeup water flow rate and, if required, recirculation water flow rate. These flow rates shall be monitored continuously and recorded at least once per shift while the scrubber is operating.* If operation of the wet scrubber results in excursions of scrubber makeup water flow rate and recirculation water flow rate less than the minimum values established, the Permittee shall initiate corrective action within 1

working day as specified by the maintenance requirements in 40 CFR 63.1160(b)(2). Failure to initiate or provide appropriate repair, replacement, or other corrective action is a violation of the maintenance requirement of 40 CFR 63.1160(b)(2).

- ii. The Permittee shall monitor and record the pressure drop across the scrubber once per shift* while the scrubber is operating in order to identify changes that may indicate a need for maintenance. The Permittee shall initiate procedures for corrective action within 1 working day of detection of an operating problem and complete all corrective actions as soon as practicable. Procedures to be initiated are the applicable actions that are specified in the maintenance plan. Failure to initiate or provide appropriate repair, replacement, or other corrective action is a violation of the maintenance requirement of 40 CFR 63.1160(b)(2).

* See also Condition 7.8.9(g)

- iii. Corrective action as referenced in Condition 7.8.9(a)(i) and (ii) and as prescribed by "the Operation and Maintenance Plan" required by Condition 7.8.6(b)(ii), shall consist of the following:
 - A. Notify the pickle line shift manager or cold mill shift manager as soon as practicable but not later than the end of the shift of the operating problem detected.
 - B. The pickle line shift manager or cold mill shift manager shall notify the mechanical or electrical shift manager no later than the end of the shift.
 - C. Any of the above shift managers shall investigate the nature of the operating problem and implement corrective actions, such as manufacturer's recommended maintenance on:
 - 1. Pumps;
 - 2. Exhaust systems;
 - 3. Fans and motors;
 - 4. Clean scrubber internals and mist eliminators to remove buildup of solids or other fouling.
 - D. The pickle line or cold mill shift manager shall complete an upset conditions report upon completion of corrected action.

- b. Pursuant to 40 CFR 63.1162(a)(4), failure to record each of the operating parameters (scrubber makeup water flow rate and recirculated water flow rate) is a violation of the monitoring requirements of 40 CFR 63 Subpart CCC.
- c. Pursuant to 40 CFR 63.1162(a)(5), each monitoring device shall be certified by the manufacturer to be accurate to within 5 percent and shall be calibrated in accordance with the manufacturer's instructions but not less frequently than once per year.
- d. Pursuant to 40 CFR 63.1161(b), the Permittee may reestablish compliant operating parameter values as part of any performance test that is conducted subsequent to the initial test or tests.
- e. Pursuant to 40 CFR 63.1160(b)(2)(ii) through (iv), the Permittee shall conduct the following maintenance requirements:
 - i. Cleaning of the scrubber internals and mist eliminators at intervals sufficient to prevent buildup of solids or other fouling;
 - ii. Inspect each scrubber at intervals of no less than 3 months with:
 - A. Cleaning or replacement of any plugged spray nozzles or other liquid delivery devices;
 - B. Repair or replacement of missing, misaligned, or damaged baffles, trays, or other internal components;
 - C. Repair or replacement of droplet eliminator elements as needed;
 - D. Repair or replacement of heat exchanger elements used to control the temperature of fluids entering or leaving the scrubber; and
 - E. Adjustment of damper settings for consistency with the required air flow.
- f. The owner or operator of an affected hydrochloric acid* storage vessel shall inspect each vessel semiannually to determine that the closed-vent system and either the air pollution control device or the enclosed loading and unloading line, whichever is applicable, are installed and operating when required [40 CFR 63.1162(c)].

* See also Condition 7.8.9(g)

- g. Notwithstanding the requirements of 40 CFR 63, Subpart CCC, the Permittee shall:
 - i. Record monitored operating data for each scrubber at least twice per shift and initiate corrective action for the scrubber if any recorded data indicates an operating problem with a scrubber;
 - ii. Inspect the affected HCL storage vessels on at least a quarterly basis to confirm compliance.
- h. Testing for VOM content of coatings shall be performed as follows [35 IAC 219.105(a) and 219.211(a) and Section 39.5(7)(b) of the Act]:
 - i. Upon written request by the Illinois EPA, the VOM content of specific coatings used by the coating operations shall be determined according to USEPA Reference Method 24 of 40 CFR 60 Appendix A and the procedures of 35 IAC 219.105(a) and 219.211(a); or
 - ii. This testing may be performed by the supplier of a material provided that the supplier provides appropriate documentation for such testing to the Permittee and the Permittee's records directly reflect the application of such materials.
- i. Pursuant to Sections 39.5(7)(a) and (d) of the Act, the Permittee shall measure or monitor the pressure differential and scrubbant flow rate on the fume scrubbers controlling the cleaner sections on Galvanizing Lines #7A and #8, as follows:
 - i. The pressure differential shall be determined in inches of water column.
 - ii. Scrubbant flow rate shall be determined in gallons per minute (gpm).
 - iii. Pressure differential and scrubbant flow rate shall be recorded at least once per shift if data is not automatically recorded.
- j. Pursuant to Sections 39.5(7)(a) and (d) of the Act, the Permittee shall operate instrumentation for the #8 Galvanizing Furnace for the NO_x concentration (ppm) in the flue gas exhaust stream and the inlet temperature (°C or °F) of the associated NO_x catalytic converter, as follows:
 - i. NO_x concentration (ppm) and inlet temperature shall be recorded at least once per shift if hourly average data is not automatically recorded.

- ii. The Permittee shall follow manufacturer's procedures for the operation and maintenance of the NO_x instrumentation.

7.8.10 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected finishing operations, pursuant to Sections 39.5(7) (a) and (e) of the Act:

a. Recordkeeping required for the pickling line by the NESHAP:

- i. The "general records" required by the NESHAP, as required by 40 CFR 63.10(b)(2) and 63.1165.
- ii. Records of the following, as required by 40 CFR 63.1165(b), which records shall be retained for 5 years from the date of each record:
 - A. Scrubber makeup water flow rate and recirculation water flow rate if a wet scrubber is used;
 - B. Calibration and manufacturer certification that monitoring devices are accurate to within 5 percent; and
 - C. Each maintenance inspection and repair, replacement, or other corrective action.
- iii. The Permittee shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, by the Illinois EPA for the life of the affected source or until the source is no longer subject to the provisions of 40 CFR 63 Subpart CCC. In addition, if the operation and maintenance plan is revised, the Permittee shall keep the previous (i.e., superseded) versions of the plan on record to be made available for inspection by the Illinois EPA for a period of 5 years after each revision to the plan.
- iv. If the Permittee operates under manufacturer's specifications or manufacturer's instructions, such manufacturer's documentation shall be kept at the source as part of the required records.

b. Recordkeeping requirements for galvanizing lines:

Pursuant to Sections 39.5(7) (a) and (f) of the Act, the Permittee shall keep the following records for the various emission units on the galvanizing lines:

- i. The following records related to the tune-ups conducted on furnaces and process heaters on the lines pursuant to 40 CFR 63.7540(a)(10):
 - A. Records for each tune-up that include the following: Date and time tune-up was conducted and responsible person; Identification of the unit; Summary of inspections performed and required maintenance; Results of all calibrations performed; and CO concentrations in ppmv in the effluent stream and oxygen in volume percent, before and after the adjustments are made.
 - B. A copy of the manufacturers specifications for burners used for optimization of emissions and flame pattern during tune-ups.
 - ii. Records for emission tests, opacity observations, engineering calculations and other compliance determinations conducted for units to verify compliance with applicable standards, limitations and other requirements in Conditions 7.8.3, 7.8.6 and 7.8.7.
 - iii. Pursuant to 40 CFR 63.7555(h), if the Permittee uses an alternative fuel other than natural gas during a period of natural gas curtailment or supply interruption, the Permittee must keep records of the total hours per calendar year that alternative fuel is burned.
- c. Recordkeeping for Galvanizing Line #8:
- i. The following design and operating records for Galvanizing Line #8:
 - A. A file containing the rated heat input capacity of the furnace and each other fuel burning unit (mmBtu/hour), with supporting documentation.
 - B. Records of monthly and annual natural gas usage (mmscf/mo and mmscf/yr) for the furnace and other fuel burning units on the line.
 - ii. For the melting kettle, the following records:
 - A. Records of production (tons of product per month and year).
 - B. A file containing the emission factor used by the Permittee to calculate PM emissions from the kettle, with supporting documentation, which file shall be reviewed and updated if needed when new emission data become available

to assure that the factor does not understate actual PM emissions.

- C. Records for actual PM emissions (lbs/month and tons/year), with supporting calculations.
- iii. For the furnace and associated catalytic converter, the following records:
- A. Engineering calculations for typical and maximum hourly NO_x emissions before and after control by catalytic converter (lbs/hour), with supporting documentation for the controlled emission rate from the furnace.
 - B. The normal range of operating parameters (inlet temperature and NO_x concentration in the exhaust stream) for the catalytic converter.
 - C. An operating log or other records for the catalytic converter that include information confirming proper operation on a daily basis and provide detailed information for any upset of the catalytic converter.
 - D. An inspection and maintenance log or other records for the catalytic converter that identify activities performed, with date, description and the responsible individual(s).
 - E. Usage or purchases of reagent for the catalytic converter (pounds/year).
 - F. Records for actual NO_x emissions of the furnace (tons/year), with supporting calculations.
 - G. A file containing the emission factors used by the Permittee to calculate emissions of PM/PM₁₀, CO, VOM and SO₂ from the furnace, with supporting documentation, and either engineering calculations for the maximum annual emissions of these pollutants (tons/year) or records of actual emissions of these pollutants (tons/year) to verify compliance with applicable limits.
- iv. For the various emission units that combust fuel on the line, the following records:
- A. A file containing engineering calculations for the maximum hourly emissions of NO_x (lbs/hour) from each unit or group of units, with supporting documentation.

- B. A file containing the emission factors used by the Permittee to calculate emissions from these units, with supporting documentation, and either engineering calculations for the maximum annual emissions of NO_x and other pollutants (tons/year) from each unit or group of units or records of actual emissions (tons/year) to verify compliance with applicable limits.
- v. For the cleaner section, the following records:
 - A. Engineering calculations for typical and maximum hourly PM emissions before and after control by the scrubber (lbs/hour), with supporting documentation for the controlled emission rate from the unit.
 - B. The normal range of operating parameters of the scrubber.
 - C. An operating log or other records for the scrubber that include information confirming proper operation on a daily basis and provide detailed information for any upset of the scrubber.
 - D. An inspection and maintenance log or other records for the scrubber that identify activities performed, with date, description and the responsible individual(s).
 - E. Records for actual PM emissions (tons/year), with supporting calculations.
- vi.
 - A. The records required by Conditions 7.8.10(c) (ii) (B), (c) (iii) (G) and (c) (iv) (B) shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).
 - B. Copies of the initial records required by Conditions 7.8.10(c) (iii) (A), (c) (iv) (A) and (c) (v) (A) shall be sent to the Illinois EPA within 45 days of the effective date of these conditions. Copies of revisions to these conditions shall be sent to the Illinois EPA in accordance with Condition 5.9.6(c) (ii).
- d. Recordkeeping for the coating operations:
 - i. Records for coating usage (gal/mo and gal/yr, by coating or category of coating).

- ii. Records of the VOM content of each coating or category of coating as applied (pounds/gallon, less exempt compounds), with supporting documentation.
- iii. Records for testing or analysis conducted for the VOM content of coatings (pounds/gallon, less exempt compounds) that include identification of the tested coating(s), the results of the analysis, documentation for the analysis methodology, and identification of the person or party that performed the analysis.

7.8.11 Reporting Requirements

- a. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected finishing operations from applicable requirements unless a NESHAP standard specifies a different time frame, as follows:
 - A. Requirements in Condition 7.8.3(b) through (e).
 - B. Requirements in Condition 7.8.5-1.
 - C. Requirements in Condition 7.8.6.
 - D. Requirements in Condition 7.8.7.
 - ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
 - iii. The Permittee shall notify the Illinois EPA of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
 - iv. All deviation reports required by Condition 7.8.11(a) above shall contain the following:
 - A. Date, time and duration of the deviation;
 - B. Description of the deviation;
 - C. Probable cause of the deviation; and
 - D. Any corrective action or preventive measures taken.
- b. The Permittee shall comply with the reporting requirements of 40 CFR 63.1164, including the following:
- i. Reporting results of performance tests. As required by 40 CFR 63.10(d)(2), the owner or operator of an affected source shall report the results of any

performance test as part of the notification of compliance status required in 40 CFR 63.1163.

- ii. Progress reports. The owner or operator of an affected source who is required to submit progress reports under 40 CFR 63.6(i) shall submit such reports to the Administrator (or the State with an approved permit program) by the dates specified in the written extension of compliance.
- iii. Periodic startup, shutdown, and malfunction reports. Pursuant to 40 CFR 63.6(e), the owner or operator of an affected source shall operate and maintain each affected emission source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the level required by the standard at all times, including during any period of startup, shutdown, or malfunction. Malfunctions must be corrected as soon as practicable after their occurrence.
 - A. Plan. As required by 40 CFR 63.6(e) (3), the owner or operator shall develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, or malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standards.
 - B. Reports. As required by 40 CFR 63.10(d) (5) (i), if actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the startup, shutdown, and malfunction plan, the owner or operator shall state such information in a semiannual report. The report, to be certified by the owner or operator or other responsible official, shall be submitted semiannually and delivered or postmarked by the 30th day following the end of each calendar half.
 - C. Immediate Reports. Any time an action taken by an owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the owner or operator shall comply with all requirements of 40 CFR 63.10(d) (5) (ii).

- c. Pursuant to 35 IAC 219.211(c) (3), for the affected coating operations, the Permittee shall notify the Illinois EPA in the following instances:
 - i. Any record showing violation of 35 IAC 219.204 shall be reported by sending a copy of such record to the Illinois EPA within 30 days following the occurrence of the violation.
 - ii. At least 30 calendar days before changing the method of compliance from 35 IAC 219.204 to 35 IAC 219.205 or 219.207, the Permittee shall comply with all requirements of 35 IAC 219.211(d) (1) or (e) (1), respectively. Upon changing the method of compliance from 35 IAC 219.204 to 35 IAC 219.205 or 219.207, the Permittee shall comply with all requirements of 35 IAC 219.204(d) or (e), respectively.
- d.
 - i. If the Permittee operates a unit using a fuel other than natural gas, to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575, the Permittee must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption. The notification must include the information specified in 40 CFR 63.7545(f) (1) through (f) (5) [40 CFR 63.7545(f)].
 - ii. If the Permittee intends to use fuel other than natural gas and other than during a period of natural gas curtailment or supply interruption as addressed by 40 CFR 63.7545(f), the Permittee must provide 30 days prior notice of the date upon which the fuels will be switched [40 CFR 63.7545(h)].

7.8.12 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected finishing operations.

7.8.13 Compliance Procedures

For affected finishing operations, compliance with the applicable standards, limitations and requirements of Conditions 7.8.3, 7.8.5 and 7.8.7 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.8 of this permit.

7.8.14 State-Only Conditions

Pursuant to 35 IAC 217.150, 217.152, and 217.160, by the applicable compliance date for 35 IAC Part 217 Subparts D and I, the Permittee shall comply with applicable requirements of these rules for the affected galvanizing furnaces, including:

- a. Certifying to the Illinois EPA that each affected galvanizing furnaces will be in compliance with the applicable emission limitation(s) of 35 IAC 217.244(a) by the applicable compliance date.
- b. Operation of each affected galvanizing furnaces in a manner consistent with good air pollution control practices to minimize NO_x emissions.
- c. Compliance with the applicable NO_x emission limitation(s) in accordance with 35 IAC 217.154 or 217.157.
- d. Compliance with the applicable monitoring, recordkeeping and reporting requirements in accordance with 35 IAC 217.157(b) and 217.156.

7.9 Wastewater Treatment Plant

7.9.1 Description

Primary Wastewater Treatment System:

The system is used to treat waste process water generated in both the iron and steelworks manufacturing areas in the facility. Emissions from this system are attributed to the blast furnace (BF) clarifiers, dust ponds, BF ditch, BF lagoon, steelworks ditch, steel works lagoon, and the wastewater treatment plant, itself. The ditches are used to transfer the BF and steelworks wastewater streams to the lagoons. The wastewater treatment plant is a simple system used to remove suspended solids and breakdown organic prior to discharge.

By-Products Wastewater Treatment System:

The system is used to treat waste process water generated in the coke oven by-product plant. Waste process water from the by-products plant is piped to the by-products wastewater treatment plant. The water treated in this system is primarily made up of process wastewater used to cool the processes and equipment used in the by-products plant. The treatment process carried out consists of the use of biological activity to breakdown the organic materials contained in the waste stream.

Note: This narrative description is for informational purposes only and is not enforceable.

7.9.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Wastewater Treatment	Equalization Tanks	N/R	None
	BFG Clarifiers		
	Aeration Basin Clarifiers		
	Lagoons		
	Sand Filters		

7.9.3 Applicable Provisions and Regulations

The "affected wastewater treatment system" for the purpose of these unit-specific conditions is the treatment systems described in Conditions 7.9.1 and 7.9.2.

7.9.4 Non-Applicability of Regulations of Concern

- a. The affected wastewater treatment systems are not subject to the operating and control requirements of 40 CFR 61 Subpart FF in general and 40 CFR 61.344 or 40 CFR 61.343 in particular, as provided by 40 CFR 61.342(a). This determination is based on the amount of benzene waste

generated on site being less than 10 Mg/yr (11 ton/yr). If conditions at the facility change and the total annual benzene calculation increases to 10 Mg/yr or more, the facility will become subject to operating and control requirements of 40 CFR 61 Subpart FF and the Permittee must apply for a revision to this permit, which could affect applicable requirements for the affected wastewater treatment plant.

- b. The affected wastewater treatment system is not subject to 40 CFR Part 63, Subpart QQ, National Emission Standards for Surface Impoundments. This determination is based on the applicability criteria of 40 CFR 63.940, which provides that 40 CFR 63 Subpart QQ applies to impoundments when an applicable Subpart of Parts 40 CFR 60, 61 or 63 references the use of Subpart QQ for air emission control. However, applicable Subpart FF does not reference to 40 CFR 63 Subpart QQ.
- c. This permit is issued based on the affected wastewater treatment system not being subject to the applicable requirements of 35 IAC 219.301 because the affected plant does not emit photochemically reactive organic material as defined in 35 IAC 211.4690.

7.9.5 Control Requirements and Work Practices

Control requirements and work practices are not set for the affected wastewater treatment systems.

7.9.6 Production and Emission Limitations

The production and emission limits are not set for the affected wastewater treatment systems.

7.9.7 Testing Requirements

Testing requirements are not set for the affected wastewater treatment systems.

7.9.8 Monitoring Requirements

If operation(s) at the facility change, the Permittee shall evaluate whether the change affects the wastewater treatment systems such that it become subject to the requirements of 35 IAC 219.301 and must apply for a revision of this permit.

7.9.9 Recordkeeping Requirements

No recordkeeping requirements are established at this time.

7.9.10 Reporting Requirements

- a. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days if the following occurs:
 - i. The affected wastewater treatment systems become subject to the control requirements of 40 CFR 61 Subpart FF;
 - ii. The affected wastewater treatment system become subject to 35 IAC 219.301.
- b. The notifications described in Condition 7.9.10 above shall contain the following:
 - i. Date of applicability;
 - ii. Emission units(s)/operation involved; and
 - iii. Method by which compliance would be demonstrated.

7.9.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected wastewater treatment systems.

7.9.12 Compliance Procedures

Compliance procedures are not set for the affected wastewater treatment systems.

7.9.13 State-Only Conditions

State-only conditions are not established.

7.10 Boilers

7.10.1 Description

Boilers 11 and 12 are located in Boiler House 2 and are rated at 225 mmBtu/hour each. Each of these boilers are physically capable of combusting various combinations of natural gas, coke oven gas (COG) and blast furnace gas (BFG). The Permittee has a construction permit to install Flue Gas Recirculation on these boilers for control of NO_x emissions (Construction Permit 10080022).

The Permittee completed construction of a new boiler pursuant to Construction Permit 06070023. The new boiler (Power Boiler #1) is used for cogeneration, producing both electricity and process steam as it supplies high pressure steam which is sent to a steam turbine that generates electricity for use at the source. Low-pressure steam from this turbine is used for manufacturing operations at the source.

BFG is a primary fuel for this boiler. Natural gas would be used for the pilot flame and also for combustion control.

A cooling tower operates in conjunction with the new boiler and associated steam turbine.

Portable boilers not yet constructed.

Note: This narrative description is for informational purposes only and is not enforceable.

7.10.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Boilers	Boiler House 2 Boiler 11 & 12 - 225 mmBtu/Hr each	Pre-1973	Flue Gas Recirculation (planned)
	Power Boiler #1 (nominal capacity 505 mmBtu/hour)	2009	None
Portable Boilers	Portable Boilers #1 through #4 (planned)	Planned	Low NO _x burners and Flue Gas Recirculation (planned)
Cooling Tower	Cooling Tower associated with Power Boiler #1	2009	None

7.10.3 Applicable Provisions and Regulations

- a. i. The "affected boilers" for the purpose of these unit-specific conditions, are Boiler #11 and #12 and Power

Boiler #1 as described in Conditions 7.10.1 and 7.10.2.

- ii. The "affected cooling tower" for the purpose of these unit-specific conditions is the unit described in Conditions 7.10.1 and 7.10.2.
 - b. i. Affected Boilers #11 and #12 may be subject to 40 CFR Part 63, Subpart DDDDD, NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters. For these boilers, pursuant to 40 CFE 63.7540(a), unless an affected boiler is operating as a blast furnace gas fuel-fired boiler, as defined in 40 CFR 63.7575, or is otherwise not subject to this NESHAP, beginning on the compliance date of this NESHAP for existing sources, the Permittee shall comply with each applicable emission limit, operating limit, and work practice standard in Table 2 of this NESHAP according to the methods specified in Table 8 to this NESHAP and relevant provisions in 40 CFR 63.7540(a)(1) through (11), as applicable.
 - ii. In particular, if affected Boiler #11 or #12 is in the Gas 2 subcategory (other gaseous fuel) pursuant to 40 CFR 63.7499, the Permittee shall comply with the following emission limits beginning on the applicable compliance date of 40 CFR 63 Subpart DDDDD, pursuant to 40 CFR 63.7500(a)(1) and Table 2 of this NESHAP:
 - A. Particulate Matter (PM) emissions shall not exceed 0.043 lb per mmBtu of heat input or 0.026 lb per mmBtu of steam output (3-run average).
 - B. Hydrogen Chloride (HCl) emissions shall not exceed 0.0017 lb per mmBtu of heat input or 0.001 lb per mmBtu of steam output.
 - C. Mercury (Hg) emissions shall not exceed 1.3E-05 lb per mmBtu of heat input or 7.8E-06 lb per mmBtu of steam output.*
 - D. CO emissions shall not exceed 9 ppm by volume on a dry basis corrected to 3 % oxygen or 0.005 lb per mmBtu of steam output.
 - E. Dioxin/Furans (D/F) emissions shall not exceed 0.08 ng/dscm (TEQ) corrected to 7% oxygen or 3.9E-11 (TEQ) lb per mmBtu of steam output.*
- * 1.3E-05 = 0.00013
7.8E-06 = 0.0000078
3.9E-11 = 0.000000000039

- c. Affected Boilers #11 and #12 shall not exceed the PM_{10} limitation of 35 IAC 212.458(b) (9):
- 32.25 ng/J (0.075 lbs/mmBtu) of heat input from the burning of COG.
- d. The affected Power Boiler #1 is subject to the NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subpart Db. (See relevant recordkeeping requirements in Condition 7.10.9.)
- e. For affected boilers #11 and #12, pursuant to 35 IAC 214.421, no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any existing fuel combustion emission source at a steel mill located in the Chicago or St. Louis (Illinois) major metropolitan area burning any solid, liquid or gaseous fuel, or any combination thereof, to exceed the allowable emission rate determined by the following equation:

$$E = S_s H_s + S_d H_d + S_R H_R + S_G H_G$$

- i. Symbols in the equation mean the following:

E = allowable sulfur dioxide emission rate;

S_s = solid fuel sulfur dioxide emission standard which is applicable;

S_d = distillate oil sulfur dioxide emission standard determined from the table in 35 IAC 214.421(d) and equal to 0.46 kg/MW-hr (0.03 lb/mmBtu);

S_R = residual oil sulfur dioxide emission standard which is applicable;

S_G = maximum by-product gas sulfur dioxide emissions which would result if the applicable by-product gas which was burned had been burned alone at any time during the 12 months preceding the latest operation, on or before March 28, 1983, of an emission source using any by-product gas;

H_s = actual heat input from solid fuel;

H_d = actual heat input from distillate fuel oil;

H_R = actual heat input from residual fuel oil;

H_G = actual heat input from by-product gases, such as those produced from a blast furnace.

- ii. Metric or English units may be used in the equation as follows:

Parameter	Metric	English
E	kg/hr	lbs/hr
S _S , S _R , S _G	kg/MW-hr	lbs/mmBtu
S _d	0.46 kg/MW-hr	0.3 lbs/mmBtu
H _S , H _d , H _R , H _G	MW	mmBtu/hr

- f. The affected boilers are subject to 35 IAC 216.121 which provides that no person shall cause or allow the emission of carbon monoxide into the atmosphere from a fuel combustion emission unit to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].
- g. The affected power boiler #1 is subject to 35 IAC 212.122(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter into the atmosphere from any fuel combustion emission unit for which construction or modification commenced on or after April 14, 1972, with actual heat input greater than 73.2 MW (250 mmBtu/hr), having an opacity greater than 20 percent.
- h. The affected boilers #11 and #12 are subject to 35 IAC 212.123(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 IAC 212.122.
- i. Startup Provisions (All affected Boilers)

Pursuant to 35 IAC 201.149 and Part 201, Subpart I, subject to the following terms and conditions for affected Boilers #11, #12 and Power Boiler #1, the Permittee is authorized to violate the applicable opacity and carbon monoxide standards in 35 IAC 212.122(a), 212.123(a) and 216.121 (Conditions 7.10.3(g), (h) and (f)) during startup.

Note: This authorization is provided because the Permittee applied for such authorization in its CAAPP application, generally describing the efforts that will be used "...to minimize startup emissions, duration of individual starts, and frequency of startups."

- i. This authorization does not relieve the Permittee from the continuing obligation to demonstrate that all reasonable efforts are made to minimize startup emissions, duration of individual startups and frequency of startups.
- ii. The Permittee shall conduct startup of the affected boilers in accordance with the manufacturer's written instructions or other written procedures prepared by

the Permittee and maintained at the source (see Condition 7.10.9(d)(i)) for the affected boilers, that are specifically developed to minimize emissions from startups and that include, at a minimum a review of the operational condition of the affected boilers prior to initiating startup of the boiler.

- iii. The Permittee shall fulfill applicable recordkeeping requirements of Condition 7.10.9(d).
 - iv. The Permittee shall fulfill applicable notification and reporting requirements of Condition 5.10.5-1.
 - v. As provided by 35 IAC 201.265, an authorization in a permit for excess emissions during startup does not shield a Permittee from enforcement for any violation of applicable emission standard(s) that occurs during startup and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.
- j. Malfunction or Breakdown Provisions (All affected Boilers)

Pursuant to 35 IAC 201.149 and Part 201, Subpart I, subject to the following terms and conditions, the Permittee is authorized to continue to operate affected boilers #11, #12 and Power Boiler #1 in excess of the applicable opacity and carbon monoxide standards in 35 IAC 212.122(a), 212.123(a) and 216.121 (Conditions 7.10.3(g), (h) and (f)) in the event of a malfunction or breakdown.

Note: This authorization is provided because the Permittee has applied for such authorization in its CAAPP application, generally explaining why such continued operation would be required to prevent injury to persons or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns.

- i. This authorization only allows such continued operation as necessary to prevent injury to persons or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.
- ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable reduce boiler load, repair the affected boiler, remove the affected boiler from service or undertake other action so that excess emissions cease.
- iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Condition

7.10.9(e) and Condition 5.10.5-2. For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume.

- iv. Following notification to the Illinois EPA (see Condition 5.10.5-2(a)(i)) of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident.
- v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.10.4 Non-Applicability of Regulations of Concern

- a. The emission limitations of 35 IAC 212.324 are not applicable to any emission unit subject to a specific emissions standard or limitation contained in 35 IAC Part 212 Subpart R, pursuant to 35 IAC 212.324 (a)(3).
- b. Affected Boilers #11 and #12 are not subject to 35 IAC 217.141 because the heat input capacity of each of these boilers is below the applicability threshold of this rule (250 mmBtu/hr).
- c. Power Boiler #1
 - i. Affected power boiler #1 is not subject to the NSPS for Electric Utility Steam Generating Units (40 CFR 60, Subpart Da) because it is not an electric utility steam generating unit as the term is defined in 40 CFR 60.41Da.
 - ii. Affected power boiler #1 is not subject to 40 CFR 60, Subpart D because it is subject to the NSPS in 40 CFR 60 Subpart Db as it meets the applicability requirements under 40 CFR 60.40b(a) [40 CFR 60.40b(j)].
 - iii. Affected Power Boiler #1 is not subject to the SO₂ standards of 40 CFR 60, Subpart Db because it meets the exemption provided at 40 CFR 60.42b(k)(2) [See also Condition 7.10.5(b)].

- iv. Affected Power Boiler #1 is not subject to the NO_x standards of 40 CFR 60, Subpart Db pursuant to 40 CFR 60.44b(c), because it has an annual capacity factor for natural gas of 10 percent or less and is subject to a federally enforceable requirement that limits operation to an annual capacity factor of 10 percent or less for natural gas [See Condition 7.10.6(a) (iii)].
- v. Affected Power Boiler #1 is not subject to particulate matter standards under 40 CFR 60, Subpart Db because it does not fire solid or liquid fuels.
- d. Affected Power Boiler #1 is not subject to 35 IAC 217.121 because it is not "fossil fuel-fired" as defined by 35 IAC 211.2425, i.e., a unit for which fossil fuels provide more than 50 percent of the annual heat input to the unit.
- e. Pursuant to 40 CFR 63.7491(k), Power Boiler #1 is not subject to 40 CFR Part 63 Subpart DDDDD because this boiler is a blast furnace gas fuel-fired boiler as defined in 40 CFR 63.7575.
- f. Cooling Tower:
 - i. The affected cooling tower is not subject to 35 IAC 219.986(d), because the cooling tower does not cool process water.
 - ii. The affected cooling tower is not subject to 40 CFR Part 63 Subpart Q because no chromium-based water treatment chemicals are used.

7.10.5 Control Requirements

- a. Requirements for affected Power Boiler #1 from Permit 06070023
 - i. Emissions of PM and PM₁₀ from the affected Power Boiler #1 shall be controlled by the existing BFG pretreatment system, which entails treatment by dust catchers and wet scrubbers [T1].
 - ii. BFG and natural gas shall be the only fuels fired in the affected Power Boiler #1 [T1].
 - iii. Affected Power Boiler #1 shall be operated for the primary purpose of supplying steam and electricity to the source with no more than 219,000 MW-hour of excess electricity sent to any utility power distribution system for sale in any calendar year from the electrical generator associated with the unit [T1].

- b. Pursuant to 40 CFR 60.42b(k)(2), the sulfur content of the fuel fired in Power Boiler #1 shall not exceed 0.16 lb/mmBtu.
- c. Requirements for affected Boilers #11 and #12

Only natural gas, coke oven gas and blast furnace gases are allowed to use as the fuels.
- d. Requirements for affected Cooling Tower

Pursuant to 40 CFR 63.402, the Permittee shall not use chromium-based water treatment chemicals in the water cooling tower.

7.10.5-1 Work Practice Requirements

- a. Pursuant to Sections 39.5(7)(a) and (d) of the Act, unless the Permittee conducts continuous emission monitoring for CO for an affected boiler, the Permittee shall conduct an annual tune-up for the boiler, as follows, to maintain compliance with 35 IAC 216.121. If annual tune-ups or combustion adjustments are required for an affected boiler pursuant to 40 CFR 63, Subpart DDDDD, these tune-ups shall also be conducted in accordance of applicable provisions of this NESHAP.
 - i. Each annual tune-up must be no more than 13 months after the previous tune-up. If the boiler is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.
 - ii. Each tune-up shall consist of the following:
 - A. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the burner inspection may be delayed until the next scheduled unit shutdown, but each burner must be inspected at least once every 36 months);
 - B. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
 - C. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly; and

- D. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available.
- iii. Measure the concentrations in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made); and
- iv. Submit a report to the Illinois EPA within 30 days of each tune-up that contains the following information:
 - A. The identity of the boiler, the date of the tune-up and the individual(s) who performed the tune-up and a summary of their experience with combustion tune-ups of boilers.
 - B. The concentrations of CO in the effluent stream in ppmv and oxygen in volume percent, measured before and after the adjustments of the boiler;
 - C. A description of any corrective actions taken as a part of the combustion adjustment; and
 - D. The type and amount of fuel used over the 12 months prior to the annual adjustment.
- b. Pursuant to 40 CFR 63.7530(h), for an affected boiler that is subject to emission limits in 40 CFR 63 Subpart DDDDD, the Permittee must minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available. If manufacturer's recommended procedures are not available, the Permittee must follow recommended procedures for a boiler of similar design for which manufacturer's recommended procedures are available.

7.10.6 Operational, Production and Emission Limitations

- a. Limitations for affected Power Boiler #1 from Permit 06070023:

Note: Permit 06070023 includes certain limitations that apply to the combination of affected power boiler #1 and BFG flare #2, which is a new flare that was also constructed with the boiler. BFG flare #2 is generally addressed in Section 7.4 of this CAAPP permit.

- i. The maximum design firing rate of affected Power Boiler #1 shall not exceed 505 mmBtu/hour [T1].
- ii. The maximum design BFG input of affected Power Boiler #1 shall not exceed 476 mmBtu/hour [T1].

- iii. Fuel usage for affected Power Boiler #1 and BFG flare #2 (see Section 7.4) shall not exceed the following limits (rolling 12-month basis) [T1]:
 - A. Natural gas: 341,666 mmBtu/year.
 - B. BFG and natural gas fuel usage combined: 4,511,426 mmBtu/year.
- iv. Emissions of PM from affective Power Boiler #1, as measured by USEPA Method 5, shall not exceed 0.03 lb/mmBtu of exhaust [T1].
- v. A. Emissions from affective Power Boiler #1 shall not exceed the following limits [T1]:

Pollutant	Mode	
	BFG* (Lbs/mmBtu)	Natural Gas (Lbs/mmBtu)
NO _x	0.05	0.12
CO	0.15	0.0824
VOM	---	0.0054
PM/PM ₁₀	0.101	0.0075
SO ₂	0.20	0.0006
Indiv. Metal HAP	0.00066	0.00066
Total HAPs	0.0053	0.0053

* BFG mode entails firing a mix of BFG with up to 10 percent natural gas.

- B. Compliance with these limits shall be determined as a 3-hour average unless continuous emissions monitoring is conducted, in which compliance shall be determined as a daily average (24 operating hours).
- C. Combined emissions from affected Power Boiler #1 and BFG flare #2 (see Section 7.4) shall not exceed the following limits [T1]:

Pollutant	Emissions	
	Tons/Month	Tons/Year
NO _x	12.5	124.74
CO	33.9	338.36
VOM	0.1	0.92
PM/PM ₁₀	22.9	228.39
SO ₂	45.2	451.14
Indiv. Metal HAP	0.2	1.5
Total HAPs	1.2	12.0

- D. Compliance with annual limits in Condition 7.10.6(a) 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), unless otherwise specified in a particular condition.

- b. Limits for the affected Cooling Tower from Permit 06070023 [T1]:
 - i. The total dissolved solids content of water circulating in the affected cooling tower shall not exceed 4,190 ppm on a monthly basis.
 - ii. Emissions of PM/PM₁₀ from the affected cooling tower shall not exceed 0.39 tons/month and 3.86 tons/year. Compliance with the annual limit shall be determined from a running total of 12 months of data.

7.10.7-1 Current Testing Requirements

The Permittee shall conduct emission testing for the affected boilers as provided below pursuant to Sections 39.5(7)(c), (d) and (p) of the Act.

- a. Requirements for affected Boilers #11 and #12:
 - i. PM and CO emissions shall be measured to determine compliance with 35 IAC 212.458(b)(9) (Condition 7.10.3(c)) and 35 IAC 216.121 (Condition 7.10.3(f)) in accordance with procedures in USEPA Methods 1 through 4 and Method 5 (or Method 201A), as provided in 35 IAC 212.108, and Method 10 or 10B.
 - ii. The testing shall be completed within 30 months of the effective date of this permit condition and may be done on either affected Boiler #11 or #12, as selected by the Illinois EPA.
 - iii. In addition to other required information, the test report shall include data for the sulfur and PM content of BFG and COG during the period of testing, with supporting data.
- b. Requirements for affected Power Boiler #1:
 - i. Permittee shall conduct emission tests at least every five years on the affected Power Boiler #1.
 - ii. CO, NO_x, SO₂, PM₁₀, PM and VOM emissions shall be determined in accordance with the test methods identified below.
 - iii. These tests shall also include measurements of emissions of metals if the Permittee elects to conduct emissions testing to verify compliance with the limits for metal HAPs, as an alternative to applying data for the metal HAP content of material collected during pretreatment of the BFG.

- iv. The following USEPA test methods shall be used for testing of emissions, unless another USEPA method is approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
SO ₂	Method 6
PM/PM ₁₀ (filterable)	Methods 201 or 201A*
PM (condensable)	Method 202
VOM	Method 18 or 25A
NO _x	Method 7E or 19
CO	Method 10 or 10B
Metals	Method 29

* The Permittee may also use Method 5 as an alternative to Method 201A, provided that the measured results shall be considered PM₁₀.

- v. In addition to other required information, the test report shall include data for the sulfur and PM content of BFG and the metals content of the material removed from raw BFG by the pretreatment system during the period of testing, with supporting calculations.
- c. For this emission testing, test notifications and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.
- d. Observation of opacity shall be conducted during all emission tests of affected boilers in accordance with Method 9 and the results of these observations included in the reports for emission testing.

7.10.7-2 Additional Performance Testing Requirements (40 CFR Part 63, Subpart DDDDD)

- a. Pursuant to 40 CFR 63.7505(c) and 63.7510, if affected Boiler #11 or #12 is subject to emission limits in 40 CFR 63 Subpart DDDDD, the Permittee must demonstrate compliance with all limits that are applicable using performance testing according to 40 CFR 63.7(a)(2) and 63.7520 and fuel analysis according to 40 CFR 63.7521, including a continuous emissions monitoring system (CEMS) where applicable, in a timely manner. The Permittee may demonstrate compliance with the applicable emission limit for hydrogen chloride or mercury using fuel analysis if the emission rate calculated according to 40 CFR 63.7530(c) is less than the applicable emission limit. Otherwise, the Permittee must demonstrate compliance for hydrogen chloride or mercury using performance testing.

- i. Pursuant to 40 CFR 63.7545(d), the Permittee must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.
 - ii. Pursuant to 40 CFR 63.7510(a), performance tests shall be conducted according to 40 CFR 63.7520(a), (c), (d) and (e) and Table 5 to 40 CFR 63, Subpart DDDDD fuel analysis for each type of fuel burned in the boiler shall be conducted according to 40 CFR 63.7521(a), (b) and (e) and Table 6 to 40 CFR 63, Subpart DDDDD, and performance evaluations for the oxygen monitor shall be conducted according to 40 CFR 63.7525.
- b. Pursuant to 40 CFR 63.7530(g), if the Permittee elects to demonstrate that the gaseous fuel fired in affected Boiler #11 or #12 meets the specifications of an "other gas 1 fuel" as defined in 40 CFR 63.7575, an initial fuel specification analyses according to 40 CFR 63.7521(f) through (i) must be conducted.
- i. If the mercury and hydrogen sulfide constituents in the gaseous fuels will never exceed the specifications included in the definition, the Permittee shall include a signed certification with the Notification of Compliance Status that the initial fuel specification test meets the gas specifications outlined in the definition of other gas 1 fuels.
 - ii. Pursuant to 40 CFR 63.7540(c), if the Permittee elects to demonstrate that the unit meets the specifications for hydrogen sulfide and mercury for the other gas 1 subcategory and cannot submit a signed certification under 40 CFR 63.7545(g) because the constituents could exceed or vary above the specifications, the Permittee must conduct monthly fuel specification testing of the gaseous fuels, according to the procedures in 40 CFR 63.7521(f) through (i) and 40 CFR 63.7540(c) and maintain records of the results of the testing as outlined in 40 CFR 63.7555(g).

7.10.8-1 Current Monitoring Requirements

Pursuant to 39.5(7) (a) and (d) of the Act, all affected boilers and the cooling tower are subject to the following monitoring requirements:

a. Opacity Observations

The Permittee shall conduct opacity observations for each affected boiler semi-annually in accordance with 40 CFR Part 60, Appendix A, Method 9. The duration of these

observations shall be a minimum of 30 minutes for each boiler.

b. Cooling Tower

i. The Permittee shall sample and analyze the water being circulated in the affected cooling tower on at least a monthly basis for the total dissolved solids content.

ii. Upon written request by the Illinois EPA, the Permittee shall have the water circulating in the affected cooling tower sampled and analyzed for the presence of hexavalent chromium in accordance with the procedures of 40 CFR 63.404(a) and (b).

c. Analysis of BFG

i. The Permittee shall sample and analyze cleaned BFG after the pretreatment system for sulfur content (lb/scf and lb/mmBtu), using appropriate ASTM methods or other comparable methodology. These measurements shall be conducted on at least a quarterly basis. The records for this activity shall also include operating data for the blast furnaces and the BFG pretreatment system at the time of sampling.

ii. The Permittee shall sample and analyze the cleaned BFG after the pretreatment system for PM content (gr/scf and lbs/mmBtu) and the material collected by the BFG pretreatment system for HAP metal content (by weight, dry basis, for individual metals as addressed by Method 29) using appropriate ASTM methods or other comparable methodology. These measurements shall be conducted at least every two years. The records for this activity shall also include operating data for the blast furnaces and the BFG pretreatment system at the time of sampling.

7.10.8-2 Additional Monitoring Requirements (40 CFR Part 63 Subpart DDDDD)

Unless an affected boiler is operating as a blast furnace gas fuel-fired boiler, as defined in 40 CFR 63.7575, or is otherwise exempt, beginning on the compliance date of this NESHAP for existing sources, the Permittee must:

a. Install, operate, and maintain a continuous oxygen monitor according to the procedures in 40 CFR 63.7525 (a) (1) through (6) and 63.7535. The oxygen level shall be monitored at the outlet of the boilers [40 CFR 63.7525(a)].

b. Monitor the operating parameters identified in Items 7, 8 and 9 of Table 8 of 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)].

- c. Operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits listed in Table 4 of 40 CFR 63 Subpart DDDDD except during performance tests conducted to determine compliance with the emission limits or to establish new operating limits. Operating limits must be confirmed or reestablished during performance tests [40 CFR 63.7540(a)(1)].

7.10.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items, pursuant to Sections 39.5(7)(a) and (e) of the Act:

- a. Affected Power Boiler #1:
 - i. A file which contains supporting documentation which demonstrates the maximum design firing rate of the affected boiler (mmBtu/hour), the maximum design BFG input, and the manufacturer's guarantees for the emission rates of the natural gas burners in the affected boiler.
 - ii. NSPS Data
 - A. The applicable recordkeeping required by the NSPS for startup, shutdown and malfunction, pursuant to 40 CFR 60.7(b).
 - B. Daily records of the fuel consumption, pursuant to 40 CFR 60.49b(d)(1).
 - iii. Fuel usage
 - A. Records for the amounts of fuel burned by type (mmBtu/month and mmBtu/year) for the affected boiler.
 - B. Records for the amounts of fuel burned for the affected boiler and the new BFG flare, combined, by type (mmBtu/month and mmBtu/year).
 - iv. Emissions

The Permittee shall keep the following records related to the emissions of affected Power Boiler #1 to verify compliance with the applicable limits in Condition 7.10.6(a):

- A. A file containing the emission factors used by the Permittee to determine emissions of pollutants other than SO₂ from the affected boiler and BFG Flare #2, with supporting documentation. These records shall be reviewed

and updated by the Permittee as necessary to assure that the emission factors that it uses to determine emissions of the affected boiler do not understate actual emissions. These records shall be prepared and copies sent to the Illinois EPA in accordance with Condition 5.9.6(c).

- B. Records of emissions of NO_x, CO, VOM, PM/PM₁₀, SO₂ and HAPs (tons/month and tons/year) from this boiler, with supporting calculations.
 - C. Records of summation of emissions of NO_x, CO, VOM, PM/PM₁₀, SO₂ and HAPs from this boiler and BFG Flare #2 (tons/month and tons/year), with supporting calculations.
- v. Records of the electricity from the generator associated with Power Boiler #1 sent to the grid for sale per calendar year (MW-hours).
- b. Affected Cooling Tower:
- i. The Permittee shall keep records of the water circulation capacity of the cooling tower (gallons/minute, hourly average), with supporting calculations.
 - ii. The Permittee shall keep records of emissions of PM/PM₁₀ (tons/month and tons/year), with supporting calculations.
- c. Affected Boilers #11 and #12:
- i. The following operating information for each boiler:
Usage of each type of fuel (natural gas, COG and BFG gas), in million ft³ per month and million ft³ per year.
 - ii. The Permittee shall keep inspection, maintenance, and repair logs with dates and the nature of such activities for each boiler.
 - iii. A file containing the emission factors used by the Permittee to determine emissions of NO_x and CO from affected Boilers #11 and #12, with supporting documentation. These records shall be reviewed and updated by the Permittee as necessary to assure that the emission factors that it uses to determine NO_x and CO emissions of these boilers do not understate actual emissions.
- d. Records for Startups of Affected Boilers, pursuant to Section 39.5(7)(b) of the Act

- i. The Permittee shall maintain startup procedures for each affected boiler, as required by Condition 7.10.3(i) (ii).
- ii. The Permittee shall maintain the following records for each startup of an affected boiler:
 - A. Date, time and duration of the startup.
 - B. A description of the startup and reason(s) for the startup.
 - C. Whether a violation of an applicable standard may have occurred during startup accompanied by the information in Condition 7.10.9(d) (iv) if a violation may have or did occur.
 - D. Whether the established startup procedures, maintained above, were followed accompanied by the information in Condition 7.10.9(d) (iii) if there were departure(s) from those procedures.
- iii. If the established startup procedures were not followed during a startup, the Permittee shall maintain the following records:
 - A. A description of the departure(s) from the established procedures.
 - B. The reason(s) for the departure(s) from the established procedures.
 - C. An explanation of the consequences of the departure(s) for emissions, such as whether the departure(s) prolonged the startup or resulted in additional emissions, and if so:
 1. The actions taken to minimize emissions and the duration of the startup; and
 2. An explanation whether similar incidents might be prevented in the future and if so, the corrective actions taken or to be taken to prevent similar incidents.
- iv. If a violation did or may have occurred during a startup, the Permittee shall maintain the following records:
 - A. Identification of the applicable standard(s) that were or may have been violated.

- B. An explanation of the nature of such violation(s), including the magnitude of such excess emissions.
 - C. A description of the actions taken or to be taken to minimize the magnitude of emissions and duration of the startup.
 - D. An explanation whether similar incidents could be prevented or ameliorated in the future and if so, a description of the actions taken or to be taken to prevent similar incidents in the future.
- e. Records for Malfunctions or Breakdowns

Pursuant to 35 IAC 201.263, the Permittee shall maintain records of continued operation of the affected boilers as addressed by Condition 7.10.3(j), during malfunctions or breakdowns, which at a minimum, shall include the following records. The preparation of these records shall be completed within 45 days of an incident, unless the Permittee conducts a root cause analysis for the incident, in which case the preparation of these records, other than the root cause analysis, shall be completed within 120 days of the incident.

- i. Date, time and duration of the incident.
- ii. A detailed description of the incident, including:
 - A. A chronology of significant events during and leading up to the incident.
 - B. Relevant operating data for the unit, including information such as operator log entries and directives provided by management during the incident.
 - C. The measures taken to reduce the quantity of emissions and the duration of the incident including the resources utilized to address the incident.
 - D. The magnitude of emissions during the incident.
- iii. An explanation why continued operation of an affected boiler was necessary to prevent personnel injury or prevent equipment damage.
- iv. A discussion of the cause(s) or probable cause(s) of the incident including the following:
 - A. Whether the incident was sudden, unavoidable, or preventable, including:

1. Why the equipment design did not prevent the incident;
 2. Why better maintenance could not have avoided the incident;
 3. Why better operating practices could not have avoided the incident; and
 4. Why there was no advance indication for the incident.
- B. Whether the incident stemmed from any activity or event that could have been foreseen, avoided or planned for.
- C. Whether the incident was or is part of a recurring pattern indicative of inadequate design, operation or maintenance.
- v. A description of any steps taken or to be taken to prevent similar future incidents or reduce their frequency and severity.
- vi. As an alternative to keeping the records required by Condition 7.10.9(e) (iv), the Permittee may perform a root cause analysis. For this purpose, a root cause analysis is an analysis whose purpose is to determine, correct and eliminate the primary causes of the incident and the excess emissions resulting there from. If the Permittee performs a root cause analysis method that would define the problem, define all causal relationships, provide a causal path to the root cause, delineate the evidence, and provide solutions to prevent a recurrence. Such an analysis shall be completed within one year of the incident.
- f. Records for the emission testing conducted on the affected boilers.
- g. If the Permittee operates under manufacturer's specifications or manufacturer's instructions, such manufacturer's documentation shall be kept at the source as part of the required records.
- h. Unless an affected boiler is operating as a blast furnace gas fuel-fired boiler, as defined in 40 CFR 63.7575, or is otherwise exempt, beginning on the compliance date of this NESHAP for existing sources, the Permittee must keep records in accordance with 40 CFR 63.7555(a) through (h) as applicable.

7.10.10 Reporting Requirements

- a.
 - i. The Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations of the affected boilers and affected cooling tower from the following applicable requirements unless a NESHAP standard specifies a different time frame, pursuant to Section 39.5(7)(f)(ii) of the Act:
 - A. Requirements in Condition 7.10.3(b), (d) and (e) through (h).
 - B. Requirements in Condition 7.10.5.
 - C. Requirements in Condition 7.10.6.
 - ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- b. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- c. All deviation reports described in Condition 7.10.10(a) and (b) above shall contain the following:
 - i. Date, time and duration of the deviation;
 - ii. Description of the deviation;
 - iii. Probable cause of the deviation; and
 - iv. Any corrective actions or preventive measures taken.
- d. Reporting on the State malfunction and breakdown authorization shall be performed in accordance with Condition 5.10.5-2.
- e. For affected Power Boiler #1, the Permittee shall comply with the applicable reporting requirements of the NSPS, as specified in 40 CFR 60.7 and 60.49b.
- f. Unless an affected boiler is operating as a blast furnace gas fuel-fired boiler, as defined in 40 CFR 63.7575, or is otherwise exempt, beginning on the compliance date of this NESHAP for existing sources, the Permittee must report each instance in which it did not meet each emission limit and operating limit in Tables 1 through 4 to 40 CFR 63 Subpart DDDDD that are applicable. These instances are deviations from the established emission limits. These deviations must be reported according to the requirements in 40 CFR 63.7550.

- g. Reporting on the State startup authorization shall be performed in accordance with Condition 5.10.5-1.
- h. Reporting on the Federal SSM authorization shall be performed in accordance with Condition 5.10.5-3.

7.10.11 Compliance Procedures

For affected boilers, compliance with the applicable standards of Condition 7.10.3, the work practice requirements of Condition 7.10.5-1, and the production/operating and the emission limits of Condition 7.10.6 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements in Section 7.10 of this permit.

7.10.12 State-Only Conditions

- a. Applicable requirements for affected Boilers #11 and #12 from Permit 10080022:
 - i. Pursuant to 35 IAC 217.150, 217.152, and 217.160, by the applicable compliance date for 35 IAC Part 217 Subparts D and E, the Permittee shall comply with applicable requirements of these rules for the affected boilers, including:
 - A. Compliance with the applicable NO_x emissions limitation in lb/mmBtu, calculated in accordance with 35 IAC 217.164(b), on an ozone season (May 1 through September 30) and annual basis [35 IAC 217.164(b)].
 - B. Operation of each affected boiler in a manner consistent with good air pollution control practices to minimize NO_x emissions [35 IAC 217.150(e)].
 - C. Certifying to the Illinois EPA that the affected boilers will be in compliance with the applicable emissions limitation of 35 IAC 217.164 by the applicable compliance date [35 IAC 217.152 and 217.155(b)].
 - D. Installation, operation and maintenance of a Continuous Emissions Monitoring System (CEMS) on each affected boiler to measure emissions of NO_x, with accompanying recordkeeping and reporting for the operation and maintenance of each CEMS [35 IAC 217.157(a) (2) and 217.156(b) (9), (b) (10) and (j)].

ii. Recordkeeping Requirements [39.5(7)(e) of the Act]

Beginning on the compliance date of 35 IAC 217 Subparts D and E, the Permittee shall keep the following records for each Boiler #11 and #12:

- A. Usage of each type of fuel (natural gas, coke oven gas and blast furnace gas), in million ft³ per month and million ft³ per year.
- B. The actual heat input in mmBtu per ozone season and mmBtu per year, for each fuel, with supporting documentation for the heat content of each fuel.
- C. The applicable NO_x emission limitation in lb/mmBtu for each ozone season and each calendar year, calculated in accordance with 35 IAC 217.164(b).
- D. The average hourly NO_x emission data.
- E. The ozone season and annual NO_x emissions (pounds).
- F. The ozone season average and annual average NO_x emission rates (lbs/mmBtu heat input) calculated within 30 days of the end of the averaging periods (i.e. calculated by October 30 for ozone season averaging period and by January 30 for annual averaging period).
- G. Inspection, maintenance, and repair logs with dates and the nature of such activities for each affected boiler.

iii. Reporting Requirements [39.5(7)(f) of the Act]

If there is any deviation of the requirements of Condition 7.10.12, the Permittee shall promptly report to the Illinois EPA as specified below and report shall include a description of the deviation, the probable cause of the deviation, corrective actions taken, and any preventive measures taken:

- A. Deviations from the NO_x emission limitation in 35 IAC 217.164(b) shall be reported within 30 days of such occurrence.
- B. Other deviations shall be reported in a semi-annual report.

7.10.13 Construction Permit Conditions for Equipment that is not yet built

Applicable requirements for portable Boilers #1 through #4 from Permit 10100042:

- a. Pursuant to the NSPS, 40 CFR 60.11(d), at all times the Permittee shall, to the extent practicable, maintain and operate each portable boiler in a manner consistent with good air pollution control practices for minimizing emissions.
- b. Pursuant to 35 IAC 216.121, the emission of carbon monoxide (CO) from each portable boiler shall not exceed 200 ppm, corrected to 50 percent excess air.
- c. Pursuant to 35 IAC 212.123(a), the opacity of the exhaust from each portable boiler shall not exceed 30 percent, except as provided in 35 IAC 212.123(b).
- d. This permit is issued based on the emissions of HAPs as listed in Section 112(b) of the Clean Air Act from the affected boilers being less than 10 tons per year of a single HAP and 25 tons per year of any combinations of such HAPs, so that these boilers are considered a minor source for HAPs.
- e. This permit is issued based on the portable boilers not being subject to the control requirements of 35 IAC 217, Subparts D and E, which establish requirements that reflect Reasonably Available Control Technology (RACT) for boilers related to emission of nitrogen oxide (NO_x). This is because the NO_x emissions from each portable boiler are restricted to less than 15 tons per year and to less than 5 tons per ozone season, pursuant to 35 IAC 217.150(a), as addressed further.
- f. Natural gas shall be the only fuel fired in the portable boilers.
- g. The maximum design heat input capacity of each portable boiler, as defined by the NSPS, 40 CFR 60.41c, shall not exceed 100 mmBtu/hour.

Note: If a portable boiler were to have a heat input capacity of greater than 100 mmBtu/hr, it would be subject to the NSPS, 40 CFR 60 Subpart Db, rather than Subpart Dc.

- h.
 - i. The total consumption of natural gas by the portable boilers shall not exceed 1,738 million scf per year, combined.
 - ii. Beginning Calendar year 2012 or such later date, the natural gas usage by each portable boiler shall not exceed 812 million scf per year and 267 million scf

during each ozone season (May 1 through September 30).

- i. The portable boilers shall only be used to address interruptions in the normal steam supply to the Granite City Works. For this purpose, the portable boilers and existing boilers may operate simultaneously, as may be needed to ensure availability of the portable boilers and facilitate transitions between existing boilers and the portable boilers.
- j. i. Short-term emissions from each portable boiler shall not exceed 0.036 lb of NO_x/mmBtu and 3.6 and 3.8 lbs/hour, for NO_x and CO, respectively.
- ii. Annual emissions from the portable boilers, combined shall not exceed the following limits. These limits are established based on total fuel usage of 1,738 million scf per year. Compliance with these limitations and the annual fuel consumption limit shall be determined from a running total of 12 months of data.

Pollutant	Emission Limit (ton/year)
NO _x	31.9
CO	33.2
VOM	3.5
PM/PM ₁₀ /PM _{2.5}	1.1
SO ₂	1.3
Individual HAP ¹	1.8
Total HAP	3.5

¹ Individual HAP refers to individual pollutants, such as Formaldehyde, Benzene, Toluene, Hexane, etc.

- k. Beginning Calendar Year 2012, the NO_x emissions of each portable boiler shall be less than the applicability thresholds of 35 IAC 217, Subparts D and E, i.e., less than 15 tons per year and less than 5 tons during each ozone season.
- l. The Permittee shall operate and maintain the portable boilers in accordance with good air pollution control practices to assure proper functioning of equipment and minimize malfunctions, including maintaining the boiler in accordance with written procedures developed for this purpose.
- m. Within 90 days after a written request from the Illinois EPA or such later date agreed to by the Illinois EPA, the Permittee shall have NO_x and CO emissions of portable

boiler(s), as specified in the request, measured by an independent testing service approved by the Illinois EPA.

- n. The Permittee shall maintain the following records for the portable boilers:
 - i. A file containing the following information:
 - A. The maximum design heat input capacity of each portable boiler, mmBtu/hour, with supporting documentation.
 - B. The maximum fuel flow rate to each portable boiler, in scf/hour and mmBtu/hour, with supporting documentation.
 - C. The guarantee or other information for the NO_x and CO emission rates of each portable boiler, in lb/hour and in lb/mmBtu (NO_x only), with supporting documentation.
 - ii. An operating log or other records for the portable boilers that, at a minimum, shall include the following information:
 - A. Information identifying each period when portable boiler(s) are operated, with the explanation why the boiler(s) need to be operated to maintain the normal steam supply for the source.
 - B. If the maximum design heat input capacity of the portable boiler is more than 95 mmBtu/hour, operating records to demonstrate that the boiler is not fired at more than 100 mmBtu/hour.
 - C. Information for each startup and shutdown, including date, time and duration, as required by 40 CFR 60.7(b).
 - D. Information for any incident in which the operation of each portable boiler continued during malfunction or breakdown, as required by 40 CFR 60.7(b). These records shall include date, time, and duration; a description of the incident; whether emissions exceeded or may have exceeded any applicable standard; a description of the corrective actions taken to reduce emissions and the duration of the incident; and a description of the preventative actions taken.

- iii. An inspection, maintenance, and repair log with dates and the nature of such activities for the portable boilers.
- iv. The following records for the natural gas usage of the portable boilers:
 - A. Natural gas usage of each boiler, pursuant to 40 CFR 60.48c(g) (scf/month).
 - B. Total natural gas usage of the boilers (scf/year).
- v. Records of the monthly and annual emissions of NO_x, CO, PM/PM₁₀/PM_{2.5}, VOM, SO₂, and HAPs from the boilers (tons/month and tons/year), with supporting data and calculations.
- vi. Beginning Calendar year 2012, records of NO_x emissions for each portable boiler for the calendar year (ton/year) and for the ozone season (ton/season).
- o. Pursuant to 40 CFR 60.7(a)(3) and 60.48c(a), the Permittee shall furnish the Illinois EPA with written notification of initial startup of each portable boiler. This notification shall be submitted within 15 days after the initial startup of the portable boiler, postmarked by such date, and include the following information. For this purpose, a separate notification shall be provided each time that portable boiler(s) are installed at the Granite City Works.
 - i. The design heat input capacity of the boiler and identification of the fuels to be combusted in the boiler, pursuant to 40 CFR 60.48c(a)(1).
 - ii. The annual capacity factor at which the Permittee anticipates operating the boiler based on fuel fired, pursuant to 40 CFR 60.48c(a)(3).
 - iii. With the notification required from above, the Permittee shall also provide the manufacturer and serial number of portable boiler(s).
- p. The Permittee shall notify the Illinois EPA of deviations of the portable boilers with the requirements of Condition 7.10.13 within 30 days of an occurrence. Reports shall describe the deviation, the probable cause of such deviations, the corrective actions taken, and any preventive measures taken.

7.11 Internal Combustion Engine

7.11.1 Description

A diesel fuel fired emergency engine-generator is used for power outages at the facility.

Note: This narrative description is for informational purposes only and is not enforceable.

7.11.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Engine	Emergency Engine-Generator (maximum power output 3,500 HP)	2001	None

7.11.3 Applicable Provisions and Regulations

- a. The "affected engine" for the purpose of these unit-specific conditions, is the emission unit described in Conditions 7.11.1 and 7.11.2.
- b. The affected engine is subject to 35 IAC 212.458(b) (7) and (c), which provides that its PM₁₀ emissions shall not exceed 22.9 mg/scm (0.01 gr/scf), provided however that this limit shall not apply if there are no visible emissions, except if a stack test is performed. The absence of visible emissions is not a defense to a finding violation.
- c. The affected engine is subject to 35 IAC 212.123(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.
- d. The affected engine is subject to 35 IAC 214.301 and 35 IAC 214.304/214.122, which provides that no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm and from any fuel burning process emission unit burning distillate oil to exceed 0.3 lbs/mmBtu.

7.11.4 Non-Applicability of Regulations of Concern

- a. The affected engine is not subject to 40 CFR Part 63 Subpart ZZZZ because it is not a spark ignition engine.
- b. The affected engine is not subject to 40 CFR Part 60 Subpart IIII, because the affected engine was manufactured before 2006 and was not modified or reconstructed

thereafter, so does not meet applicable criteria in 40 CFR 60.4200 (a).

- c. The affected engine is not subject to 35 IAC Part 217, because the affected engine is not a type of process emission unit addressed by Part 217.
- d. The affected engine is not subject to the requirements of 35 IAC 212.321 because it does not have a process weight rate as defined in 35 IAC 211.5250.
- e. The affected engine is not subject to 35 IAC 216.121, because the affected engine is not by definition a fuel combustion emission unit.
- f. 35 IAC 212.324 is not applicable to the affected engine pursuant to 35 IAC 212.324(a)(3), because the affected engine is subject to 35 IAC 212.458(b)(7), an emission limitation in 35 IAC Part 212, Subpart R.

7.11.5 Control Requirements and Work Practices

The operation of the emergency generator is limited to 500 hours per year [00060003, T1].

7.11.6 Production and Emission Limitations from Permit 00060003 [T1]

- a. Emissions of the affected engine shall not exceed the following limits:

Pollutant	Emissions (lbs/hr)	Emissions (T/yr)
PM	2.48*	0.62
CO	21.11*	5.3
NO _x	79.49*	19.9
SO ₂	12.54	3.1

* Operation at a level of 10 percent higher than the applicable hourly emissions limits above is allowed during startup.

- b. Compliance with annual limits 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) [T1].

7.11.7 Testing Requirements

Upon the written request from the Illinois EPA, the emission tests shall be conducted by the Permittee for the affected engine to verify compliance with emission limits in Condition 7.11.6 as follows [Sections 39.5(7)(c), (d) and (p) of the Act].

- a. The following USEPA test methods shall be used, unless another USEPA method is approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
PM	Method 5
NO _x	Method 7E or 19
CO	Method 10 or 10B

- b. Observations of opacity shall be conducted during these emission tests in accordance with Method 9 and the results of these observations included in the reports for emission testing.
- c. For this emission testing, test notifications and reporting shall be done by the Permittee in accordance with Conditions 8.6.2 and 8.6.3 of this permit.

7.11.8 Monitoring Requirements

- a. The Permittee shall perform annual sampling and analysis for sulfur content (lbs/mmBtu) in the fuel for the affected engine or obtain a certification for each fuel supplied delivery for the affected engine [Section 39.5(7)(d) of the Act].
- b. The Permittee shall conduct opacity observations for the affected engine in accordance with Method 9 on an annual basis if the affected engine starts for purposes of reliability testing. The duration of Method 9 test shall be equal to 30 minutes or the duration of the reliability test, whichever is less [Section 39.5(7)(p) of the Act].

7.11.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected engine, pursuant to Sections 39.5(7)(a) and (e) of the Act:

- a. A file for the affected engine containing:
 - i. The manufacturer's emission guarantees or emission data for the engine, for PM, CO and NO_x, both during normal operation and startup (lbs/hour and lbs/gallon) and manufacturer's data for fuel consumption and exhaust flow rate from the engine, with supporting documentation.
 - ii. Engineering calculations to demonstrate that PM emissions comply with 35 IAC 212.458(b)(7) and to determine the greatest sulfur content (lbs/mmBtu) in fuel with which compliance with 35 IAC 214.301 and 35 IAC 214.304/214.122 would be shown.

- iii. The emission rate(s) used by the Permittee to determine emissions of the affected engine when these rates are different from the manufacturer's rates, accompanied by supporting documentation. Copies of these records shall be submitted to the Illinois EPA, with initial records submitted within 15 days of the date that the records are prepared or 30 days after the effective date of this permit, whichever is later and subsequent revisions to these records submitted within 15 days of the date that the Permittee completes preparation of revised records.
- b. Records of fuel consumption (gal/month and gal/year).
- c. Records of hours of operation (hrs/yr).
- d. Records for number of startups.
- e. Records for the sulfur content (lbs/mmBtu) of fuel as determined by sampling and analyses of fuel or copies of supplier certifications for sulfur content of fuel and identification of any use of oil whose sulfur content exceeded the level for compliance, as determined pursuant to Condition 7.11.9(a) (ii).
- f. Records of emissions of PM, CO, NO_x and SO₂ (tons/month and tons/year) from the engine with supporting calculations. For this purpose, PM, CO and NO_x emissions shall be calculated from fuel usage and number of startups and the manufacturer's emission guarantees for emission rates or such higher emission rate(s) that accurately reflect actual operation of the engine. SO₂ emissions shall be calculated from the sulfur content of the fuel and fuel usage, assuming complete conversion of sulfur to SO₂.
- g. Records for stack tests and opacity observations.

7.11.10 Reporting Requirements

- a. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected engine as follows:
 - A. Requirements in Condition 7.11.3(b), (c) and (d).
 - B. Requirements in Condition 7.11.5.
 - C. Requirements in Condition 7.11.6.
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.

- b. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- c. All deviation reports described in Condition 7.11.10 above shall contain the following:
 - i. Date, time and duration of the deviation;
 - ii. Description of the deviation;
 - iii. Probable cause of the deviation; and
 - iv. Any corrective action or preventive measures taken.

7.11.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected engine.

7.11.12 Compliance Procedures

For the affected engine, compliance with the applicable standards of Condition 7.11.3, the control/work practice requirements of Condition 7.11.5, and the production/emission limits of Condition 7.11.6 is addressed by testing, monitoring, recordkeeping and reporting requirements in Section 7.11 of this permit.

7.11.13 State-Only Conditions

State-only conditions are not being established.

7.12 Gasoline Storage and Dispensing

7.12.1 Description

Gasoline storage and dispensing is conducted for the Permittee's fleet of gasoline fueled vehicles. There are several such stations at the facility, so that fleet vehicles do not have to travel on public roads to reach the fueling stations.

Note: This narrative description is for informational purposes only and is not enforceable.

7.12.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Gasoline Storage	Four storage tanks located at: Storeroom (1,000 gallons capacity); Machine Shop (1,000 gallons capacity); Wastewater Facility (250 gallons capacity); Blast Furnace Facility(1,000 gallons capacity)	N/A	Control Practices: Submerged loading pipe (all tanks) and Stage I system (tanks with 1,000 gallons capacity)

7.12.3 Applicable Provisions and Regulations

a. The "affected gasoline storage tanks", for the purpose of these unit-specific conditions are the tanks described in Conditions 7.12.1 and 7.12.2 above.

b. The affected gasoline storage tank at the wastewater facility is subject to the following:

No person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 l (250 gal), unless such tank is equipped with a permanent submerged loading pipe [35 IAC 219.122(b)].

c. Pursuant to 35 IAC 219.583(c)(1), the affected gasoline storage tanks at the storeroom, machine shop and blast furnace facility are subject to the following requirements of 35 IAC 219.583(a): No person shall cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank at a gasoline dispensing facility unless:

i. The tank is equipped with a submerged loading pipe [35 IAC 219.583(a)(1)].

- ii. The vapors displaced from the storage tank during filling are processed by a vapor control system [35 IAC 219.583(a)(2)].
 - iii. All tank vent pipes are equipped with pressure/vacuum relief valves that are designed and shall be set to resist a pressure of at least 3.5 inches water column and to resist a vacuum of no less than 6.0 inches water column [35 IAC 219.583(a)(3)].
- d. Pursuant to 35 IAC 219.585(a), all the affected gasoline storage tanks are subject to the following: No person shall sell, offer for sale, dispense, supply, offer for supply, or transport for use in Illinois gasoline whose Reid vapor pressure exceeds the applicable limitations set forth below during the regulatory control periods, which shall be June 1 to September 15.
- i. The Reid vapor pressure of gasoline, a measure of its volatility, shall not exceed 7.2 psi (9.68 kPa) during the regulatory control period [35 IAC 219.585(b)].
 - ii. The Reid vapor pressure of ethanol blend gasolines having at least nine percent (9%) but not more than ten percent (10%) ethyl alcohol by volume of the blended mixture, shall not exceed the limitations for gasoline set forth in Condition 7.12.2(d)(i) above by more than 1.0 psi (6.9 kPa) [35 IAC 219.585(c)].

7.12.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected gasoline storage tank not being subject to the NSPS for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), 40 CFR Part 60, Subpart Kb, because each tank is less than 40 cubic meters (10,566 gallons).
- b. This permit is issued based on the affected gasoline storage tanks not being subject to 35 IAC 219.121, because each affected tank is less than 40,000 gallons [35 IAC 219.121].
- c. This permit is issued based on the affected gasoline storage tanks not being subject to 35 IAC 219.122(a), because each affected tank is less than 40,000 gallons [35 IAC 219.122].
- d. The affected gasoline storage tanks are not subject to 35 IAC 219.301 because the affected gasoline storage tanks do not use organic material. In addition, the storage tanks are regulated by 35 IAC 219.122(b) and 35 IAC 219.583(c)(1).

- e. The affected gasoline storage and dispensing operations are not part of a bulk gasoline plant (35 IAC 219.581) or bulk gasoline terminals (35 IAC 219.582) pursuant to relevant definitions in 35 IAC Part 211.
- f. This permit is issued based on the gasoline storage and dispensing operations performed at wastewater facility not being subject to 35 IAC 219.583(a) (2) and (a) (3) pursuant to 35 IAC 219.583(b) (3), because the tank capacity is less than 575 gallons.
- g. The affected gasoline storage tanks are not eligible for the exemption from the permitting in 35 IAC 219.583(e) because they are not located at retail dispensing operations, as defined at 35 IAC 211.5630.

7.12.5 Control Requirements and Work Practices

The affected gasoline storage tanks (other than the affected gasoline storage tank at the wastewater facility) are subject to the following control requirements and work practices:

- a. Pursuant to 35 IAC 219.583(c), each owner of a gasoline dispensing operation shall:
 - i. Install all control systems and make all process modifications required by Condition 7.12.3(c) (see also 35 IAC 219.583(a)) [35 IAC 219.583(c) (1)];
 - ii. Provide instructions to the operator of the gasoline dispensing operation describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunction of a vapor control system [35 IAC 219.583(c) (2)]; and
 - iii. Repair, replace or modify any worn out or malfunctioning component or element of design [35 IAC 219.583(c) (3)].
- b. Pursuant to 35 IAC 219.583(d), each operator of a gasoline dispensing operation shall:
 - i. Maintain and operate each vapor control system in accordance with the owner's instructions [35 IAC 219.583(d) (1)];
 - ii. Promptly notify the owner of any scheduled maintenance or malfunction requiring replacement or repair of a major component of a vapor control system [35 IAC 219.583(d) (2)];
 - iii. Maintain gauges, meters or other specified testing devices in proper working order [35 IAC 219.583(d) (3)]; and

- iv. Pursuant to 35 IAC 219.583(d) (4), operate the vapor collection system and delivery vessel unloading points in a manner that prevents:
 - A. A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B [35 IAC 219.583(d) (4) (A)]; and
 - B. Avoidable leaks of liquid during the filling of storage tanks [35 IAC 214.583(d) (4) (B)].
- v. Within 15 business days after discovery of the leak by the owner, operator, or the Agency, repair and retest a vapor collection system which exceeds the limits of Condition 7.12.5(iv) above [35 IAC 219.583(d) (5)].
- c. Pursuant to 35 IAC 219.584(a), the Permittee shall ensure that each gasoline delivery vessel that comes on to the property to fill the affected gasoline storage tanks at the storeroom, machine shop, or blast furnace facility are complying with the following:
 - i. Shall have a vapor space connection that is equipped with fittings which are vapor tight;
 - ii. Shall have its hatches closed at all times during unloading operations, unless a top loading vapor recovery system is used;
 - iii. Shall not internally exceed a gauge pressure of 18 inches of water or a vacuum of 6 inches of water;
 - iv. Shall be designed and maintained to be vapor tight at all times during normal operations;
 - v. Shall not be refilled in Illinois at other than a bulk gasoline terminal that complies with the requirements of 35 IAC 219.582 or a bulk gasoline plant that complies with the requirements of 35 IAC 219.581(b).
 - vi. Shall have a sticker affixed to the tank adjacent to the tank manufacturer's data plate which contains the tester's name, the tank identification number and the date of the test. The sticker shall be in a form prescribed by the Illinois EPA.

7.12.6 Production and Emission Limitations

Production and emission limitations are not set for the affected gasoline storage tanks.

7.12.7 Testing Requirements

- a. Pursuant to 35 219.583(a) (4), the Permittee shall demonstrate compliance with the pressure/vacuum relief valves specifications of Condition 7.12.3(c) (iii) at a gasoline dispensing operation by measuring and recording the pressure indicated by a pressure/vacuum gauge at each tank vent pipe 30 days after installation of each pressure/vacuum relief valve, and at least annually thereafter. The test shall be performed on each tank vent pipe within two hours after product delivery into the respective storage tank. For manifold tank vent systems, observations at any point within the system shall be adequate.
- b. The Permittee shall test the relief valves whenever there is a modification of an existing vapor control system [39.5(7) (d) and (p) of the Act].

7.12.8 Monitoring Requirements

The Permittee shall perform the following monitoring pursuant to Sections 39.5(7) (a) and (d) of the Act.

- a. The Permittee shall perform semi-annual inspections of the gasoline storage and dispensing operations at the storeroom, machine shop and blast furnace while the tank is being filled.
 - i. Retractors, hoses, breakaways, swivels
 - ii. Adapters, vapor caps, rubber gaskets, and spill containment buckets
- b. The Permittee shall perform an annual inspection of the gasoline storage tank at wastewater facility and dispensing operation to ensure that a submerged loading pipe is physically present and the condition of the pipe for integrity.

7.12.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected gasoline storage tanks, pursuant to Sections 39.5(7) (a) and (e) of the Act:

- a. Records of the testing and repair of the vapor collection system and pressure/vacuum relief valves, pursuant to Condition 7.12.7.
- b. Records of gasoline throughput (gallons per month and gallons per year).

- c. For the affected gasoline storage tanks during the regulatory control period, the Permittee shall keep the following records:
 - i. Retain a copy of an invoice, bill of lading, or other documentation used in normal business practice stating that the Reid vapor pressure of the gasoline complies with the Reid vapor pressure standard as provided in 35 IAC 219.585(h) (1) (A);
 - ii. Maintain records on the Reid vapor pressure, quantity received and date of delivery of any gasoline or ethanol blends arriving at the gasoline operation [35 IAC 219.585(h) (2)].
- d. Copies of the annual certification(s) from the supplier of gasoline that all the delivery vessels have been tested and are in compliance with the requirements of Condition 7.12.5(c).
- e. A copy of operating and maintenance procedures and instructions for the tanks and vapor control systems.
- f. Records for all inspections.

7.12.10 Reporting Requirements

- a. i. Pursuant to Section 39.5(7) (f) (ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations by the affected gasoline storage tanks from applicable requirements, as follows:
 - A. Requirements in Condition 7.12.3(b) through (d).
 - B. Requirements in Condition 7.12.5(a) and (b).
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- b. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- c. All deviation reports described in Condition 7.12.10 above shall contain the following:
 - i. Date, time and duration of the deviation;
 - ii. Description of the deviation;
 - iii. Probable cause of the deviation; and

iv. Any corrective action or preventive measures taken.

7.12.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected gasoline storage tanks.

7.12.12 Compliance Procedures

For the affected gasoline storage tanks, compliance with the applicable standards of Condition 7.12.3 is addressed by the work practices, testing, monitoring, recordkeeping and reporting requirements described in Section 7.12 of this permit.

7.12.13 State-Only Conditions

State-only conditions are not being established.

7.13 Fugitive Dust

7.13.1 Description

Fugitive dust is emitted from vehicle traffic, unloading operations, wind erosion of piles, roadways, parking lots and other open areas at the facility. The source also emits fugitive dust from an on-site landfill for furnace dusts and other industrial wastes.

Note: This narrative description is for informational purposes only and is not enforceable.

7.13.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Fugitive Emissions	Landfill Vehicular Traffic on Roadways, Parking Lots and Other Open Areas Unloading Operations Storage Piles and associated activities Beaching Areas	N/A	N/A

7.13.3 Applicable Provisions and Regulations

- a. The "affected activities" for the purpose of these unit-specific conditions, are the activities described in Conditions 7.13.1 and 7.13.2 above.
- b. The affected activities are subject to 35 IAC 212.306 which provides that all normal traffic pattern roads and parking facilities which are located on mining or manufacturing property shall be paved or treated with water, oils or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program required by 35 IAC 212.309, 212.310 and 212.312.
- c. All storage piles of materials with uncontrolled emissions of fugitive particulate matter in excess of 45.4 Mg per year (50 T/yr) which are located within a source whose potential particulate emissions from all emission units exceed 90.8 Mg/yr (100 T/yr) shall be protected by a cover or sprayed with a surfactant solution or water on a regular basis, as needed, or treated by an equivalent method, in

accordance with the operating program required by 35 IAC 212.309, 212.310 and 212.312 of 35 IAC Part 212 Subpart K [35 IAC 212.304(a)].

- d. Applicable emission limitations established by 35 IAC 212.316:
 - i. Emission Limitations for Storage Piles. No person shall cause or allow fugitive particulate matter emissions from any storage pile to exceed an opacity of 10 percent, to be measured four ft from the pile surface.
 - ii. Additional Emissions Limitations for the Granite City Vicinity as defined in 35 IAC 212.316(e) (1):

Emissions Limitations for Roadways or Parking Areas Located at Integrated Iron and Steel Manufacturing Plants. No person shall cause or allow fugitive particulate matter emissions from any roadway or parking area located at a slag processing facility or integrated iron and steel manufacturing plant to exceed an opacity of 5 percent.
 - iii. Pursuant to 35 IAC 212.316(f), emission limitation for all other activities (see the definition for emission unit in 35 IAC 211.1950). Unless an activity has been assigned a particulate matter, PM₁₀, or fugitive particulate matter emissions limitation elsewhere in 35 IAC 212.316 or in Subparts R or S of 35 IAC Part 212, no person shall cause or allow fugitive particulate matter emissions from any such activity to exceed an opacity of 20 percent.
- e. All conveyor loading operations to storage piles specified in 35 IAC 212.304 shall utilize spray systems, telescopic chutes, stone ladders or other equivalent methods in accordance with the operating program required by 35 IAC 212.309, 212.310 and 212.312 [35 IAC 212.305].

7.13.4 Non-Applicability of Regulations of Concern

The landfill operated on the site is not subject to 35 IAC Part 220 for municipal waste landfills. The landfill serves only the needs for Permittee's operations in accepting industrial waste generated on-site and no municipal or any off-site waste is accepted by this landfill.

7.13.5 Control Requirements and Work Practices

- a. Pursuant to permit #95010001 [T1], the Permittee shall comply with the following on-site and off-site fugitive dust control requirements:
 - i. On-site fugitive dust control

- A. The Permittee shall sweep or flush at least every day the paved access area below the BOF ESP where ESP dust collection bags (i.e., super-sacks, storage bags or other containers for ESP dust) 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:
 - 1. The ground and other accessible areas where dust may gather shall be swept or cleaned at least every day;
 - 2. Cleaning shall be performed in such a manner as to minimize the escape of dust into the atmosphere;
 - 3. Dust collection bags shall be inspected at least daily for rips, tears, or insecure connection to the discharge of the ESP hoppers;
 - 4. Dust collection bags shall be inspected after removal from, and connection to, the discharge of the ESP hoppers;
 - 5. Ripped or torn bags shall be taken out of service and transported in a covered truck.
- C. Unpaved Roads. For unpaved roads that are part of normal traffic patterns (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:
 - 1. Road segment G-G, which shall be sprayed at least quarterly;
 - 2. Road segment L, which shall be sprayed at least 4 times per month.
 - 3. All other unpaved roads shall be treated as necessary.
 - 4. 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 Condition 7.13.9(b).

- D. Paved roadways and areas. Paved roadways and areas shall be maintained in good condition by the Permittee.

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

1. Road segments D, K, M, F, G, J, R, and O shall be swept or flushed at least daily;
 2. 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;
 3. Road segments S and T shall be swept or flushed at least every other day;
 4. Road segments A and H shall be swept or flushed at least once per month;
 5. All gate areas leading from the steelworks area shall be swept or flushed at least daily;
 6. All gate areas leading from the iron making area shall be swept or flushed at least five times per week.
 7. 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 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 BOPF shop and BOF ESP.
- b. The fugitive dust control measures outlined above do not relieve the Permittee from complying with additional control measures identified in the PM₁₀ contingency plan as required by Condition 5.3.3 of this permit [95010001, T1R].
- c. The landfill operated by the Permittee shall not accept any off-site wastes, including municipal, hospital/medical or hazardous wastes [Section 39.5(7)(1) of the Act].
- d. Pursuant to the Road Cleaning Program required by Permit #06070088, the Permittee shall comply with the following control requirements (for purposes of this condition

affected road segments are those identified in Condition 7.13.5(d) (iii):

- i. Good air pollution control practices shall be implemented to minimize and reduce nuisance dust from the affected road segments.
- ii. Cleaning of affected road segments shall be performed using vacuum cleaning equipment (such as Enviro-Whirl). Any dust laden air shall be vented through a filtering system on the vacuum cleaning equipment before discharge to atmosphere.

The handling of material collected by vacuum cleaning equipment during road cleaning shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods to control PM emissions from transfer of material for disposal.

- iii. Affected road segments shall be cleaned on the following frequency except during extended periods of inclement weather that act to prevent emissions of fugitive dust from the affected road segments:

- A. Cleaning on a twice weekly basis:

Road Segment	Segment Boundaries
Madison Ave	16th & 20th Streets
Central 20th Street	Madison St. & USS Gate
East 20th Street	USS Gate & Rte 203
21st Street	Rte 203 and Monroe St.
North Edwardsville Rd	20th & Nameoki (Rte 203)

- B. Cleaning on a twice monthly basis:

Road Segment	Segment Boundaries
Rock Road	Rte 3 & W. 20th St. (Overpass Approach)
West 20th St.	Rte 3 & Rock Road
Rock Road	W. 20th & Benton St. (Railroad Overpass)
Niedringhaus	Benton St. and 16th St.
16th Street	Niedringhaus & Madison St.
South Edwardsville Rd	20th & McCambridge Ave (Rte 203)
McCambridge Ave	Edwardsville Rd (Rte 203) & 2nd St.
Route 162	Nameoki Rd (Rte 203) & Railroad Tracks
Benton Street	Rock Rd. and Niedringhaus

7.13.6 Production and Emission Limitations

Total fugitive emission of PM/PM₁₀ from the roadways at the source shall not exceed 27 tons/year. Compliance with the

annual limits shall be determined based on a calendar year pursuant to Permit 95010001 [T1].

7.13.7 Testing Requirements

- a. Opacity observations shall be conducted by a qualified observer in accordance with procedures published in 40 CFR Part 60, Appendix A, Method 9, except as specified below.
 - i. Opacity readings on each roadway or parking area shall be conducted at least annually. On unpaved roadways or parking areas, the reading shall not be conducted within three days of the application of any dust suppressants.
 - ii. The Permittee shall observe, one day per calendar month, the opacity of emissions from each active coal storage pile and areas travelled by equipment hauling coal from these coal storage piles to coal processing operations unless prolonged weather conditions preclude scheduled observations. In addition, the observer shall remain in the area for at least 3 hours to perform opacity readings on other coal piles which become active during this 3 hour period.
 - iii. All opacity readings conducted on visible emissions generated by vehicular traffic on roadways, parking areas and heavy equipment traffic associated with storage piles, shall be in accordance with the procedures specified in 35 IAC 212.109.
 - iv. All opacity readings on storage piles shall be measured four feet above the pile surface. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) or 12 minutes without visible emissions.
- b. Upon written request by the Illinois EPA, such testing shall be conducted for specific affected operations(s) within 45 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later. As least 30 days prior to the scheduled test date, the Permittee shall submit a detailed test plan to the Illinois EPA, describing the manner of operations of the affected activity and all control measures that will be implemented during the testing. The results of the testing will be submitted within thirty calendar days of the completion of the tests.
- c. The testing conditions from above are established in accordance with requirements of 39.5(7)(p) of the Act.
- d. Pursuant to Permit 06070088, the Permittee shall conduct silt loading measurements as follows [T1] (for purposes of

this condition affected road segments are those identified in Condition 7.13.5(d) (iii)):

- i. The Permittee shall conduct measurements of the silt loading on the affected road segments, with sampling and analysis conducted using the "Procedures for Sampling Surface/Bulk Dust Loading," Appendix C.1 in Compilation of Air Pollutant Emission Factors, USEPA, AP-42. A series of samples shall be taken to determine the average silt loading on each affected road segment and address the change in silt loadings as related to the amount and nature of vehicle traffic.
- ii. Measurements for "controlled" silt loading shall be repeated at least every three years pursuant to the Road Cleaning Program of Condition 7.13.5(d).
- iii. Measurements for "controlled" silt loadings shall be conducted upon written request by the Illinois EPA, as specified in the request, which shall be completed within 75 days of the Illinois EPA's request.

7.13.8 Monitoring Requirements

- a. Except as provided in Condition 7.13.8(b), the Permittee shall perform inspections of the affected activities on at least a quarterly basis, including associated control measures, while the affected activities are in use, to confirm compliance with the requirements of Condition 7.13.3. Control measures may include material characteristics. These quarterly inspections may be scheduled so that only a number of affected activities are reviewed during each inspection, provided however, that all affected activities shall be inspected at least once during each calendar year. For the purpose of this condition, all affected activities means each type of material handled. (Sections 39.5(7) (a) and (d) of the Act).
- b. The Permittee shall perform inspections, on a once per calendar month basis, during receipt of the truck unloading each contracted supply of coal.
- c. As part of the inspections required by 7.13.8(a), the Permittee shall perform observations for visible emissions by Method 22. These observations shall be conducted during the operation of each activity for a minimum of 18 minutes, or for activities that operate on a batch basis, for a minimum of six consecutive batches. If visible emissions are observed, the Permittee shall take corrective action within 2 hours to return the status of the operation to no visible emissions or observations of opacity by Method 9 shall be conducted. For the purpose of this condition, returning the status of operations to no visible emissions

does not include, for any activity, temporary idling of lack of operation between batches.

- d. The requirements from above are established pursuant to Sections 39.5(7) (a) and (d) of the Act.

7.13.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected areas of fugitive emissions, pursuant to Sections 39.5(7) (a) and (e) of the Act:

- a. Records required by 35 IAC 212.316(g):
- i. The owner or operator of any fugitive particulate matter emission unit subject to 35 IAC 212.316 shall keep written records of the application of control measures for compliance with the opacity limitations of 212.316 and shall submit to the Illinois EPA an annual report containing a summary of such information.
 - ii. The records shall include at least the following:
 - A. The name and address of the source;
 - B. The name and address of the owner and/or operator of the source;
 - C. A map or diagram showing the location of all emission units controlled, including the location, identification, length, and width of roadways;
 - D. For each application of water or chemical solution to roadways by truck: the name and location of the roadway controlled, application rate of each truck, frequency of each application, width of each application, identification of each truck used, total quantity of water or chemical used for each application and, for each application of chemical solution, the concentration and identity of the chemical;
 - E. For application of physical or chemical control agents: the name of the agent, application rate and frequency, and total quantity of agent, and, if diluted, percent of concentration, used each day; and
 - F. A log recording incidents when control measures were not used and a statement of explanation.

- iii. Copies of all records required by 35 IAC 212.316 shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA and shall be transmitted to the Illinois EPA by a company-designated person with authority to release such records.
 - iv. The records required under 35 IAC 212.316 shall be kept and maintained for at least five (5) years at the source and be available for inspection and copying by Illinois EPA representatives during working hours.
- b. i. The Permittee shall maintain daily records relative to the on-site fugitive dust control program which includes the following information at a minimum, pursuant to the Permit 95010001:
- 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; and
 - F. Any and all suspensions or deviations from the work practices and control procedures of Condition 7.13.5, with a date, description, and explanation for suspension of application.
- ii. The Permittee shall keep a record containing calculations and analysis for the emissions from roadways at the source with emissions calculation performed in accordance with the methodology set forth in Section 13.2.1 of AP-42, to verify compliance with Condition 7.13.6. A copy of this record shall be submitted to the Illinois EPA each time it is prepared, with submittal made within 15

days of the date that the Permittee completes the preparation of new or revised calculations and analysis.

- c. The Permittee shall maintain the most current versions of the PM₁₀ contingency plan and the fugitive particulate matter control program.
- d. The Permittee shall keep records of the silt measurements conducted pursuant to Condition 7.13.7(d), including records for the sampling and analysis activities and results.
- e. Recordkeeping requirements for the Road Cleaning Program (for purposes of this condition affected road segments are those identified in Condition 7.13.5(d) (iii)):
 - i.
 - A. The Permittee shall keep a record describing the Road Cleaning Program that at a minimum: identify any contractors implementing the program for the Permittee and their duties for implementing the Program under the contract; the equipment used by the Permittee or its contractor for cleaning roads, including for each item of equipment, a description of and the manufacturer's specifications for collection of silt from roadways and control of dust emissions from the cleaning process; and the standards practices that are used to clean roads under the Program, such as type of equipment, and speed of travel.
 - B. The Permittee shall keep records for implementation of the Road Cleaning Program that at a minimum: Identify each time that an affected road segment was cleaned, with a description of any circumstances that may have affected the extent or nature of cleaning; and identify each time that scheduled cleaning was not performed, with detailed explanation.
 - C. The Permittee shall keep records documenting maintenance and repair of road cleaning equipment.
 - ii. The Permittee shall keep a record containing calculations and analysis for the annual reduction in emissions that is achieved by the Road Cleaning Program, with emissions calculation performed in accordance with the methodology set forth in Section 13.2.1 of AP-42, to verify that the Road Cleaning Program is achieving 236.03 tons/yr reduction, total, of particulate matter determined as PM₁₀ from baseline emission levels of 656.87 tons/year from the affected road segments. This record shall be prepared in

conjunction with the measurements of "controlled" silt loadings required by Condition 7.13.7(d). A copy of this record shall be submitted to the Illinois EPA each time it is prepared, with submittal made to the Illinois EPA within 15 days of the date that the Permittee completes the preparation of new or revised calculations and analysis.

7.13.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Section, of deviations of the affected area of fugitive emissions with the permit requirements, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports submitted by the Permittee shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

- a. i. Pursuant 35 IAC 212.316(g)(5), the Permittee shall submit a quarterly report to the Illinois EPA stating the following: the dates any necessary control measures were not implemented, a listing of those control measures, the reasons that the control measures were not implemented, and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not applied based on a belief that application of such control measures would have been unreasonable given prevailing atmospheric conditions, which shall constitute a defense to the requirements of 35 IAC 212.316. This report shall be submitted to the Agency thirty (30) calendar days from the end of a quarter. Quarters end March 31, June 30, September 30, and December 31.
- ii. Pursuant to permit 06070088, the Permittee shall submit a quarterly report to the Illinois EPA describing the implementation of the Road Cleaning Program during the previous quarter. This report shall at a minimum provide: the number of times each road segment was cleaned; the number of times that cleaning was not performed, with explanation; a description of any significant changes in road cleaning equipment or cleaning practices, with explanation; and a description of other changes to the Road Cleaning Program, including changes in contractors.
- b. i. Pursuant to Section 39.5(7)(f)(ii) of the Act, the Permittee shall promptly notify the Illinois EPA, Air Compliance Section, within 30 days of deviations in the affected areas of fugitive emissions, as follows:
 - A. Requirements in Condition 7.13.3(b) through (e).

- B. Requirements in Condition 7.13.5.
- C. Requirements in Condition 7.13.6.
- ii. All such deviations shall be summarized and reported as part of the semiannual monitoring report required by Condition 8.6.1.
- c. The Permittee shall notify the Illinois EPA, Air Compliance Section, of all other deviations as part of the semiannual monitoring reports required by Condition 8.6.1.
- d. Deviation reports described in Condition 7.13.10(b) and (c) above shall contain the following:
 - i. Date, time and duration of the deviation;
 - ii. Description of the deviation;
 - iii. Probable cause of the deviation; and
 - iv. Any corrective action or preventive measures taken.

7.13.11 Operational Flexibility/Anticipated Operating Scenarios

a. Beaching

The following requirements established by Permits 72080034 and 72080036 shall be implemented:

- i. Under the following circumstances beaching of iron may occur:
 - A. In the event that Blast Furnace A or Blast Furnace B must be shut down in order to cast the furnace dry.
 - B. In the event that an interruption in the BOF steelmaking and/or casting operations will result in a temporary surplus of iron, beyond the capacity of the system to hold, necessitating beaching in order to cast the furnace dry and provide the ability to safely shut down.
 - C. In the event that the blast furnace produces unusable iron such as high silica or low temperature iron. High silica iron shall be blended and used to the extent possible at the BOF in order to reduce beaching. Low temperature iron shall be used at the BOF to the extent possible until solidification in the car becomes imminent. In other cases of

unusable iron, such iron shall be used when possible to minimize the quantity beached.

- ii. In the event that the beaching of iron occurs the Permittee shall beach the iron as follows:
 - A. Beaching shall be allowed only in the event that alternate receptacles are not available;
 - B. Beaching shall be allowed only if all reasonable measures are taken to minimize the quantity of liquid metal beached, the frequency of a malfunction or breakdown that necessitates beaching, the duration beaching occurs, and the emissions resulting from beaching; and
 - C. Beaching shall be allowed at a controlled pour rate not to exceed 20 tons per minute.
- b. Prior to material in the beaching pit being dug and transferred to vehicles for recycling to the blast furnaces, it shall be watered or treated with other equivalent techniques to minimize particulate matter emissions during such material handling, unless such measures would cause a hazard or safety issue to employees.

7.13.12 Compliance Procedures

- a. Compliance with Condition 7.13.3(b) is addressed by the monitoring requirements in Condition 7.13.8(b) and the records in Condition 7.13.9.
- b. Compliance with Condition 7.13.3(c), (d), 7.13.5(a), (d), and 7.13.6 is addressed by the testing in Condition 7.13.7, monitoring requirements in Condition 7.13.8(a) and the records in Condition 7.13.9.
- c. Compliance with Condition 7.13.3(e) is addressed by the testing requirements Condition 7.13.7, monitoring in Condition 7.13.8(c) and the records in Condition 7.13.9.
- d. Compliance with Condition 7.13.5(c) is addressed by the records in Condition 7.13.9.

7.13.13 State-Only Conditions

State-only conditions are not being established.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after May 2, 2011, unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;
- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
 - i. Describe the physical or operational change;
 - ii. Identify the schedule for implementing the physical or operational change;
 - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
 - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
 - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods if applicable test methods are not specified by the applicable regulations or otherwise identified in the conditions of this permit. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Conditions 8.6.3 and 8.6.4.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

Semiannual reports, including monitoring reports summarizing required monitoring as specified in the conditions of this permit shall be submitted to the Illinois EPA, unless more frequent submittal of such reports is required in Sections 5 or 7 of this permit [Section 39.5(7)(f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	July 31
July - December	January 31

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. 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 the specified operating parameters, as defined in Section 7 for each emission unit and any control equipment, will be determined;
- d. The specific determinations of emissions and operation that are intended to be made, including sampling and monitoring locations;
- e. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods;
- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and
- g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;

- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

- a. Unless otherwise specified in the particular provision of this permit or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA - Air Compliance Unit with a copy sent to the Illinois EPA - Air Regional Field Office.
- b. All test protocols, test notifications and test reports shall be sent to the Illinois EPA - Air Compliance Unit with a copy sent to the Illinois EPA - Air Regional Field Office and to the Illinois EPA - Stack Test Specialist.
- c. As of the date of issuance of this permit, the addresses of the offices that should generally be utilized for the submittal of reports and notifications are as follows:
 - i. Illinois EPA - Air Compliance Unit

Illinois Environmental Protection Agency
Bureau of Air
Compliance & Enforcement Section (MC 40)
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
 - ii. Illinois EPA - Stack Test Specialist

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016
 - iii. Illinois EPA - Air Quality Planning Section

Illinois Environmental Protection Agency
Bureau of Air

Air Quality Planning Section (MC 39)
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

iv. Illinois EPA - Air Regional Field Office

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

v. USEPA Region 5 - Air Branch

USEPA (AR - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

- d. Permit applications should be addressed to the Air Permit Section. As of the date of issuance of this permit, the address of the Air Permit Section is as follows:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
1021 North Grand Avenue East
P.O. Box 19506
Springfield, Illinois 62794-9506

8.7 Title I Conditions

Notwithstanding the expiration date on the first page of this CAAPP permit, Title I conditions in this permit, which are identified by a T1, T1N, or T1R designation, remain in effect until such time as the Illinois EPA takes action to revise or terminate them in accordance with applicable procedures for action on Title I conditions. This is because these conditions either: (a) incorporate conditions of earlier permits that were issued by the Illinois EPA pursuant to authority that includes authority found in Title I of the CAA (T1 conditions), (b) were newly established in this CAAPP permit pursuant to authority that includes such Title I authority (T1N conditions), or (c) reflect a revision or combination of conditions established in this CAAPP permit (T1R conditions). (See also Condition 1.5.)

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

- 9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule.
- 9.1.2 In particular, this permit does not alter or affect the following [Section 39.5(7)(j)(iv) of the Act]:
- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
 - b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
 - d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.
- 9.1.3 This permit and the terms and conditions herein do not affect the Permittee's past and/or continuing obligation with respect to statutory or regulatory requirements governing major source construction or modification under Title I of the CAA. Further, neither the issuance of this permit nor any of the terms or conditions of the permit shall alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance.
- 9.1.4 Except as provided by applicable law, the issuance of this permit by the Illinois EPA does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any currently pending or future legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Illinois EPA or the USEPA may have against the applicant including, but not limited to, any enforcement action authorized pursuant to the provision of applicable federal and state law.
- 9.1.5 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, pursuant to Section 39.5(7)(j) and (p) of the Act, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.1.6 In the event of an action to enforce the terms or conditions of this permit, this permit does not prohibit a Permittee from invoking any affirmative defense that is provided by the applicable law or rule.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless this permit provides for such continued operation consistent with the Act and applicable Illinois Pollution Control Board regulations [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated there under.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services

Section, Illinois Environmental Protection Agency, P.O. Box
19276, Springfield, Illinois, 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents as may be required by law and in accordance with constitutional limitations, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Sections 4 and 39.5(7) (a) and (p) (ii) of the Act]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- d. Sample or monitor any substances or parameters at any location:
 - i. At reasonable times, for the purposes of assuring permit compliance or applicable requirements; or
 - ii. As otherwise authorized by the CAA, or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit 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 sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. At a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable Clean Air Act requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].
- b. Other records required by this permit including any logs, plans, procedures, or instructions required to be kept by this permit shall be retained for a period of at least 5

years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Air Quality Planning Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Unit, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.
- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act and applicable regulations [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as Attachment 1 to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence [Section 39.5(7) (k) of the Act]:

i. An emergency occurred as provided in Section 39.5(7) (k) of the Act and the Permittee can identify the cause(s) of the emergency.

Note: For this purpose, emergency means a situation arising from sudden and reasonably unforeseeable events beyond the control of the source, as further defined by Section 39.5(7) (k) (iv) of the Act.

ii. The permitted source was at the time being properly operated;

iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.

b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations [Section 39.5(7) (k) (iv) of the Act].

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, revoked, reopened and reissued, or terminated for cause in accordance with applicable provisions of Section 39.5 of the Act. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7) (o) (iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15) (a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit.
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program.
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or that inaccurate statement were made in establishing the emission standards or limitations, or other terms or conditions of this permit.
- d. The Illinois EPA or USEPA determines that this permit must be revised or revoked to ensure compliance with the applicable requirements.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation and reissuance under Section 39.5(15) of the Act, pursuant to Sections 39.5(5) (e) and (i) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7) (o) (v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable. In the event of a challenge to any portion of the permit, other portions of the permit may continue to be in effect. Should any portion of this permit be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected and the rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7) (i) of the Act].

9.14 Permit Expiration and Renewal

Upon the expiration of this permit, if the source is operated, it shall be deemed to be operating without a permit unless a timely and complete CAAPP application has been submitted for renewal of this permit. However, if a timely and complete application to renew this CAAPP permit has been submitted, the terms and all conditions of this CAAPP permit will remain in effect until the issuance of a renewal permit [Section 39.5(5) (l) and (o) of the Act].

Note: Pursuant to Sections 39.5(5) (h) and (n) of the Act, upon submittal of a timely and complete renewal application, the permitted source may continue to operate until final action is taken by the Illinois EPA on the renewal application, provided, however, that this protection shall cease if the applicant fails to submit any additional information necessary to evaluate or take final action on the renewal application as requested by the Illinois EPA in writing. For a renewal application to be timely, it must be submitted no later than 9 months prior to the date of permit expiration.

9.15 General Authority for the Terms and Conditions of this Permit

The authority for terms and conditions of this permit that do not include a citation for their authority is Section 39.5(7) (a) of the Act, which provides that the Illinois EPA shall include such provisions in a CAAPP permit as are necessary to accomplish the purposes of the Act and to assure compliance with all applicable requirements. Section 39.5(7) (a) of the Act is also another basis of authority for terms and conditions of this permit that do include a specific citation for their authority.

Note: This condition is included in this permit pursuant to Section 39.5(7) (n) of the Act.

10.0 ATTACHMENTS

Attachment 1 Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

Attachment 2 Emissions of Particulate Matter from Process Emission Units

10.2.1. Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972

- a. New Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972 [35 IAC 212.321].
- b. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].
 - i. The emissions of particulate matter into the atmosphere in any one hour period from the affected coating lines shall not exceed the allowable emission rates specified in the following equation:

$$E = A (P)^B$$

Where:

P = Process weight rate

E = Allowable emission rate

- ii. For process weight rates of 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	1.214	2.54
B	0.534	0.534

- iii. For process weight rates in excess of 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	11.42	24.8
B	0.16	0.16

- c. Limits for Process Emission Units for which Construction or Modification Commenced On or After April 14, 1972 [35 IAC 212.321(c)]:

Metric		English	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10
0.3	0.64	0.30	1.35
0.4	0.74	0.40	1.58
0.5	0.84	0.50	1.75
0.7	1.00	0.75	2.40
0.9	1.15	1.00	2.60
1.8	1.66	2.00	3.70
2.7	2.1	3.00	4.60
3.6	2.4	4.00	5.35
4.5	2.7	5.00	6.00
9.0	3.9	10.00	8.70
13.0	4.8	15.00	10.80
18.0	5.7	20.00	12.50
23.0	6.5	25.00	14.00
27.0	7.1	30.00	15.60
32.0	7.7	35.00	17.00
36.0	8.2	40.00	18.20
41.0	8.8	45.00	19.20
45.0	9.3	50.00	20.50
90.0	13.4	100.00	29.50
140.0	17.0	150.00	37.00
180.0	19.4	200.00	43.00
230.0	22.0	250.00	48.50
270.0	24.0	300.00	53.00
320.0	26.0	350.00	58.00
360.0	28.0	400.00	62.00
408.0	30.1	450.00	66.00
454.0	30.4	500.00	67.00

10.2.2 Process Emission Units for Which Construction or Modification Commenced Prior to April 14, 1972

- a. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced prior to April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 [35 IAC 212.322(a)].
- b. The emissions of particulate matter into the atmosphere in any one hour period from the affected unit shall not exceed the allowable emission rates specified in the following equation:

$$E = C + A (P)^B$$

Where:

P = Process weight rate

E = Allowable emission rate

- i. For process weight rates up to 27.2 Mg/hr (30 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	1.985	4.10
B	0.67	0.67
C	0	0

- ii. For process weight rates in excess of 27.2 Mg/hr (30 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	25.21	55.0
B	0.11	0.11
C	-18.4	-40.0

- c. Limits for Process Emission Units for which Construction or Modification Commenced Prior to April 14, 1972 [35 IAC 212.322(c)]:

<u>Metric</u>		<u>English</u>	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
0.05	0.27	0.05	0.55
0.1	0.42	0.10	0.87
0.2	0.68	0.20	1.40
0.3	0.89	0.30	1.83
0.4	1.07	0.40	2.22
0.5	1.25	0.50	2.58
0.7	1.56	0.75	3.38
0.9	1.85	1.00	4.10
1.8	2.9	2.00	6.52
2.7	3.9	3.00	8.56
3.6	4.7	4.00	10.40
4.5	5.4	5.00	12.00
9.0	8.7	10.00	19.20
13.0	11.1	15.00	25.20
18.0	13.8	20.00	30.50
23.0	16.2	25.00	35.40
27.2	18.15	30.00	40.00
32.0	18.8	35.00	41.30
36.0	19.3	40.00	42.50
41.0	19.8	45.00	43.60
45.0	20.2	50.00	44.60
90.0	23.2	100.00	51.20
140.0	25.3	150.00	55.40
180.0	26.5	200.00	58.60
230.0	27.7	250.00	61.00
270.0	28.5	300.00	63.10
320.0	29.4	350.00	64.90
360.0	30.0	400.00	66.20
400.0	30.6	450.00	67.70
454.0	31.3	500.00	69.00

Attachment 3 Current Emission Factors for Certain Emission Limits

This attachment provides information, based on information provided by the Permittee as of the date of issuance of this revised permit, on the emission factors used by the Permittee to demonstrate compliance with certain emission limits for Material Handling Operations (Section 7.1), Blast Furnace Operations (Section 7.4), Basic Oxygen Process Operations (Section 7.5) and Continuous Casting Activities (Section 7.6), which limits have been carried over from Construction Permit/PSD Approval 95010001. (See also Condition 5.13.)

Operation (Permit Condition)	Pollutant	Emission Factor	Basis
Material Handling Operations (Section 7.1)			
Ladle Metallurgy Material Handling (7.1.6(b)(i))	PM	0.00355 lb/ton	steel
	PM ₁₀	0.00355 lb/ton	steel
BOF Additive System (7.1.6(b)(ii))	PM	0.00032 lb/ton	steel
	PM ₁₀	0.00032 lb/ton	steel
Flux conveyor Operations (7.1.6(b)(iii))	PM	0.0016 lb/ton	steel
	PM ₁₀	0.0016 lb/ton	steel
Iron Pellet Screening (7.1.6(b)(iv))	PM	0.00279 lb/ton	iron pellets
	PM ₁₀	0.00279 lb/ton	iron pellets
Blast Furnace Operations (Section 7.4)			
Casthouse (7.4.6(b))	PM	0.0703 lb/ton	iron
	PM ₁₀	0.0703 lb/ton	iron
	SO ₂	0.2006 lb/ton	iron
	NO _x	0.0144 lb/ton	iron
	VOM	0.0946 lb/ton	iron
Blast Furnace Uncaptured Emissions (7.4.6(c))	PM	0.031 lb/ton	iron
	PM ₁₀	0.0155 lb/ton	iron
	SO ₂	0.0104 lb/ton	iron
	NO _x	0.0007 lb/ton	iron
	VOM	0.0047 lb/ton	iron
Blast Furnace Charging (7.4.6(d))	PM	0.0024 lb/ton	iron pellets
	PM ₁₀	0.0024 lb/ton	iron pellets
Slag Pits (7.4.6(e))	PM	0.00417 lb/ton	iron
	PM ₁₀	0.00417 lb/ton	iron
	SO ₂	0.01 lb/ton	iron
Iron Spout (7.4.6(f))	PM	0.02548 lb/ton	iron
	PM ₁₀	0.02548 lb/ton	iron
	SO ₂	0.0073 lb/ton	iron

Operation (Permit Condition)	Pollutant	Emission Factor	Basis
Basic Oxygen Process Operations (Section 7.5)			
BOF Electrostatic Precipitator (7.5.6(c))	PM	0.16 lb/ton	steel
	PM ₁₀	0.16 lb/ton	steel
	NO _x	0.0389 lb/ton*	steel
	VOM	0.006 lb/ton**	steel
	CO	8.993 lb/ton	steel
	Lead	0.1934 lb/hr	-
BOF Roof Monitor (7.5.6(d))	PM	0.0987 lb/ton	steel
	PM ₁₀	0.066145 lb/ton	steel
	Lead	0.0129 lb/hour	-
Desulfurization and Hot Metal Transfer (7.5.6(e))	PM	0.03721 lb/ton	iron
	PM ₁₀	0.03721 lb/ton	iron
	VOM	0.001 lb/ton	iron
	Lead	0.0133 lb/hr	-
Slag Skimming (7.5.6(f))	PM	0.005 lb/ton	iron
	PM ₁₀	0.005 lb/ton	iron
Argon Stirring and Material Handling (7.5.6(g))	PM	0.00715 lb/ton	steel
	PM ₁₀	0.00715 lb/ton	steel
Continuous Casting Activities (Section 7.6)			
Baghouse #1 (7.6.6(a))	PM	0.00355 lb/ton	steel
	PM ₁₀	0.00355 lb/ton	steel
Continuous Caster Molds (7.6.6(b))	PM	0.006 lb/ton	steel
	PM ₁₀	0.006 lb/ton	steel
	NO _x	0.05 lb/ton	steel
Cont. Caster Spray Chambers (7.6.6(c))	PM	0.00852 lb/ton	steel
	PM ₁₀	0.00852 lb/ton	steel
Slab Cutoff (7.6.6(d))	PM	0.0071 lb/ton	steel
	PM ₁₀	0.0071 lb/ton	steel
Slab Ripping (7.6.6(e))	PM	0.00722 lb/ton	steel
	PM ₁₀	0.00722 lb/ton	steel

* As of the date of issuance of this permit, the Permittee had not notified the Illinois EPA of the updated NOx emission factor that it will be using for the BOF ESP as a consequence of the results of recent testing that indicated that a factor of 0.0389 pounds/ton would understate actual emissions. The NOx emission rates measured during such testing, in April 2012 and July 2012, were, respectively, 0.1273 and 0.1535 pounds per ton of steel.

** As of the date of issuance of this permit, the Permittee had not notified the Illinois EPA of the updated VOM emission factor that it will be using for the BOF ESP as a consequence of the results of recent testing that indicated that a factor of 0.006 pounds/ton would understate actual emissions. The VOM emission rates measured during such testing in April 2012 and July 2012, respectively, were 0.023 and 0.0153 pounds per ton of steel.

CONTESTED CONDITIONS – CAAPP Permit Appeal (Permit issued March 4, 2013)

Contested Condition in CAAPP Permit	CAAPP Permit Page(s)	Emission Factor
5.13 – General Procedures for Certain Permit Limits on Emissions	45-47	NA
<i>7.1 – Material Handling and Processing Operations</i>		
7.1.6(b)(i) – Emissions from Material HS and Deslagging Station (See 7.6.6(a) below)	53	<i>PM: 0.00355 lbs/ton PM10: 0.00355 lbs/ton</i>
7.1.6(b)(ii) – BOF Additive System (Trackhopper Baghouse)	54	<i>PM: 0.00032 lbs/ton PM10: 0.00032 lbs/ton</i>
7.1.6(b)(iii) – Flux conveyor and transfer points (Bin Floor Baghouse)	54	<i>PM: 0.0016 lbs/ton PM10: 0.0016 lbs/ton</i>
7.1.6(b)(iv) – Iron Pellet Screen	54	<i>PM: 0.00279 lbs/ton PM10: 0.00279 lbs/ton</i>
<i>7.4 – Blast Furnace</i>		
7.4.6(b) – Casthouse Baghouse	158	<i>PM: 0.0703 lbs/ton PM10: 0.0703 lbs/ton SO2: 0.2006 lbs/ton NOx: 0.0144 lbs/ton VOM: 0.0946 lbs/ton</i>
7.4.6(c) – Blast Furnace uncaptured fugitive emissions	158	<i>PM: 0.031 lbs/ton PM10: 0.0155 lbs/ton SO2: 0.0104 lbs/ton NOx: 0.0007 lbs/ton VOM: 0.0047 lbs/ton</i>
7.4.6(d) – Blast Furnace Charging	158	<i>PM: 0.0024 lbs/ton PM10: 0.0024 lbs/ton</i>
7.4.6(e) – Slag Pits	158	<i>PM: 0.00417 lbs/ton PM10: 0.00417 lbs/ton SO2: 0.0100 lbs/ton</i>
7.4.6(f) – Iron Spout Baghouse	159	<i>PM: 0.02548 lbs/ton PM10: 0.02548 lbs/ton SO2: 0.0073 lbs/ton</i>

Contested Condition in CAAPP Permit	CAAPP Permit Page(s)	Emission Factor
7.5 – Basic Oxygen Processes		
7.5.6 (b) – BOF Shop Emissions (tons/yr total) – (Only NOx and VOM annual emission limits)	191	Annual Emissions: NOx: 70 tpy VOM: 12 tpy
7.5.6(c) – BOF ESP Stack (charge, refine, tap)	191	PM: 0.16 lbs/ton PM10: 0.16 lbs/ton NOx: 0.0389 lbs/ton VOM: 0.0060 lbs/ton CO: 8.993 lbs/ton Lead: 0.1934 lbs/hr Maximum Emissions: NOx: 69.63 tpy VOM: 10.74 tpy
7.5.6(c) – BOF ESP Stack – Failure to include note regarding compliance schedule (See Condition 7.5.13)	191	NA
7.5.6(d) – BOF Roof Monitor	191	PM: 0.0987 lbs/ton PM10: 0.06614 lbs/ton Lead: 0.0129 lbs/hr
7.5.6(e) – Hot Metal Desulfurization and Hot Metal Transfer	192	PM: 0.03721 lbs/ton PM10: 0.03721 lbs/ton VOM: 0.0010 lbs/ton Lead: 0.0133 lbs/hr
7.5.6(f) – Hot metal charging and ladle slag skimming	192	PM: 0.0050 lbs/ton PM10: 0.0050 lbs/ton
7.5.6(g) – Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy Baghouse #2)	192	PM: 0.00715 lbs/ton PM10: 0.00715 lbs/ton
7.5.13 – Compliance Schedule and Current Enforcement Status – Failure to include compliance schedule for NOx and VOM emissions from the BOF Shop related to the VN issued November 30, 2012.	216	NA
7.6 – Continuous Casting		
7.6.6(a) – Deslagging Station and associated Material Handling System (See 7.1.6(b)(i) above)	220	PM: 0.00355 lbs/ton PM10: 0.00355 lbs/ton

Contested Condition in CAAPP Permit	CAAPP Permit Page(s)	Emission Factor
7.6.6(b) – Caster Molds - Casting	220	<i>PM</i> : 0.006 lbs/ton <i>PM10</i> : 0.006 lbs/ton <i>NOx</i> : 0.050 lbs/ton
7.6.6(c) – Caster Spray Chambers	220	<i>PM</i> : 0.00852 lbs/ton <i>PM10</i> : 0.00852 lbs/ton
7.6.6(d) – Slab Cut-off		<i>PM</i> : 0.0071 lbs/ton <i>PM10</i> : 0.0071 lbs/ton
7.6.6(e) – Slab Ripping	220	<i>PM</i> : 0.00722 lbs/ton <i>PM10</i> : 0.00722 lbs/ton



HODGE DWYER & DRIVER

ATTORNEYS AT LAW

MONICA T. RIOS
E-mail: mrios@hddattorneys.com

February 14, 2013

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 – Revised CAAPP Permit
Granite City Works, Granite City, Illinois
Facility I.D. No. I19813AAI

Dear Mr. Studer:

On February 5, 2013, the Illinois Environmental Protection Agency (“Illinois EPA”) opened a 10 day public notice period on its planned issuance of a revised Clean Air Act Permit Program (“CAAPP”) permit for United States Steel Corporation (“U.S. Steel”). Illinois EPA’s intention is to address the United States Environmental Protection Agency’s (“USEPA”) December 3, 2012 order granting in part and denying in part the American Bottom Conservancy’s Petition to Object to U.S. Steel’s Revised CAAPP permit.

In November 2012, Illinois EPA issued a Violation Notice to U.S. Steel alleging violations for the NOx and VOM limits for the basic oxygen furnace (“BOF”) and associated electrostatic precipitator (“ESP”) in Condition 7.5.6(c) of U.S. Steel’s Revised CAAPP permit. Via letter dated January 30, 2013, U.S. Steel submitted a compliance plan/schedule requesting that it be incorporated into the Revised CAAPP Permit. *See* Attachment A. While Illinois EPA acknowledges receipt of the compliance plan/schedule in the Statement of Basis, Illinois EPA has made the “preliminary decision to wait until the enforcement cases . . . have been resolved and/or adjudicated before including any compliance schedule in a CAAPP permit for the facility.” Statement of Basis at 14-15.

Mr. Dean Studer
February 14, 2013
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In the Statement of Basis issued with the public notice documents, Illinois EPA explained:

The identification of non-compliance and/or the issuance of a violation notice and reference to the information contained therein, alone, is not sufficient to satisfy the demonstration required under Section 505(b)(2) of the CAA for the inclusion of an approvable compliance schedule in a Title V permit. This alleged non-compliance is simply an early stage in the larger enforcement process of determining whether a violation, in fact, has occurred. This information noted above in the current enforcement cases is, therefore, generally insufficient to warrant a compliance schedule without further investigation by appropriate enforcement staff at the state or federal level.

Statement of Basis at 13.

Although Illinois EPA has made the preliminary decision not to include U.S. Steel's proposed compliance schedule in the planned revisions to the Revised CAAPP Permit, the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/1 *et seq.*, and the regulations promulgated thereunder require that such a compliance schedule be included in the Revised CAAPP Permit when it is reissued. Section 39.5(7)(p)(iii) of the Act states that each CAAPP permit shall include a "schedule of compliance consistent with subsection 5 of this Section and applicable regulations." 415 ILCS 5/39.5(7)(p)(iii); *see also* 415 ILCS 5/39.5(7)(p)(iv) (stating that each CAAPP permit shall include "[p]rogress reports consistent with an applicable schedule of compliance . . .").

Moreover, Section 39.5(7)(p)(iv) of the Act provides that each CAAPP permit shall contain the following elements with respect to compliance:

Progress reports consistent with an applicable schedule of compliance pursuant to paragraph (d) of subsection 5 of this Section and applicable regulations to be submitted semiannually, or more frequently if the Agency determines that such more frequent submittals are necessary for compliance with the Act or regulations promulgated by the Board thereunder. Such progress reports shall contain the following:

- A. Required dates for achieving the activities, milestones, or compliance required by the schedule of compliance and dates when such activities, milestones or compliance were achieved.
- B. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

Mr. Dean Studer
February 14, 2013
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415 ILCS 5/39.5(7)(p)(iv); *see also* 40 C.F.R § 70.6(c)(3) – (4) (stating that “[a]ll part 70 permits shall contain the following elements with respect to compliance . . . [a] schedule of compliance . . . ” and progress reports consistent with an applicable schedule of compliance). For such non-compliant emission units, the regulations further require the following:

...a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any such applicable requirements for which the source will be in noncompliance at the time of application submittal. This compliance plan/schedule of compliance addendum shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject

35 Ill. Admin. Code § 270.404(b); *see also* 40 C.F.R. § 70.6(c)(3) (stating that “[a]ll part 70 permits *shall* [emphasis added] contain the following elements with respect to compliance . . . [a] schedule of compliance . . .”).

Based on the provisions discussed above, CAAPP permits are required to include compliance schedules for emission units that are not in compliance with applicable requirements of the permit at the time of issuance. Illinois EPA stated that it is too soon to determine non-compliance based on the issuance of the violation notice to U.S. Steel because the enforcement process is only in the beginning stages. Illinois EPA also noted that other considerations and information needs to be taken into account prior to revising the CAAPP permit to include a compliance schedule. However, U.S. Steel’s January 30, 2013 letter requesting a compliance schedule clearly explained that data from the last two stack tests demonstrated “that the BOF ESP cannot maintain compliance with the current emission limits for NOx and VOM.” *See* Attachment A. Thus, U.S. Steel has concluded, based on stack test data, that it cannot comply with certain permit requirements that will be included in the Revised CAAPP Permit when it is issued. Accordingly, U.S. Steel requested that a compliance schedule be included in the upcoming reissuance of the Revised CAAPP Permit and requests that Illinois EPA reconsider its position on this issue. Furthermore, U.S. Steel requests that Illinois EPA include the requested compliance schedule at a new Condition 7.5.13 in the Revised CAAPP Permit, as well as add a Note (*) after existing Condition 7.5.6(c) as follows:

*These limits have been addressed by the compliance schedule established for compliance with these factors and limits. (See Condition 7.5.13).

Mr. Dean Studer
February 14, 2013
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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,

A handwritten signature in blue ink that reads "Monica T. Rios". The signature is written in a cursive style.

Monica T. Rios

MTR:kjg
enclosure

pc: David W. Hacker, Esq. (via electronic mail w/ enclosure)
Mr. Bryan M. Kresak (via electronic mail w/ enclosure)
Mr. Jason K. Braxton (via electronic mail w/ enclosure)
Sally A. Carter, Esq. (via electronic mail w/ enclosure)
Mr. Brad Frost (via electronic mail w/ enclosure)



Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

RECEIVED

JAN 31 2013

January 30, 2013

VIA ELECTRONIC MAIL AND HAND DELIVERY

Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Michael T. Reed, Manager
CAAPP Unit, Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East, Post Office Box 19276
Springfield, Illinois 62794-9276

Subject : United States Steel Corporation Granite City Works
CAAPP No. 96030056, Facility I.D No. 119813AAI
Basic Oxygen Furnace ESP Emissions – Permit Condition 7.5.6(c)

Dear Mr. Reed:

Following up to our prior submittal of stack test results and after receipt of the Violation Notice A-2012-00169, dated November 30, 2012, regarding the Basic Oxygen Furnace ESP emissions, United States Steel Corporation Granite City Works ("U.S. Steel") is hereby submitting a compliance schedule. As you discussed with representatives of U. S. Steel, U. S. Steel respectfully requests that the enclosed schedule, provided per 40 CFR § 70.5(c)(8) and § 39.5 of the Illinois Environmental Protection Act, be incorporated into CAAPP No. 96030056, consistent with 40 CFR § 70.6 and § 39.5 of the Illinois Environmental Protection Act.

The last two stack tests have demonstrated that the BOF ESP cannot maintain compliance with the current emission limits for NOx and VOM. These limits were developed from historic information from a prior owner of the facility. As you know, the ESP does not control nor is it believed to contribute to NOx and VOM emissions.

If you have any questions regarding the enclosed 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.

Finally, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Richard Veitch
General Manager
Granite City Works
United States Steel Corporation

Enclosures

ATTACHMENT A

**United States Steel Corporation
Granite City Works
BOP ESP Emissions
Compliance Plan/Schedule
January 30, 2013**

Compliance Plan/Schedule Element	Milestone Date*	Completion Date
1. Advise Illinois EPA regarding stack test results/noncompliance.	September 19, 2012	Complete
2. Submit stack test schedule and test protocols to develop emission factors and revise annual limits for NO _x and VOM		April 30, 2013
3. Begin stack testing	1 months after IEPA approval of stack test plan	August 31, 2013
4. Submit final stack test results	2 months after final test	October 31, 2013
5. Submit emission factors for NO _x and VOM based on stack test results for IEPA approval	1 months after submitting results of final stack test	December 31, 2013
6. Submit PSD #95010001 and Title V permit application(s) for integrated processing to establish new NO _x and VOM emission factors and annual limits	6 months after emission factor approval	June 30, 2014
7. Receive PSD Permit	Assume year after application submittal	June 30, 2015
8. Submit Title V application for an administrative amendment or minor modification to incorporate PSD changes	One month after PSD permit issuance	July 31, 2015
9. Receive administrative amendment from IEPA	Three months	August 31, 2015
10. EPA 60-day review	60-days after submittal	October 31, 2015
11. Submit progress reports to IEPA at a minimum of every six (6) months		
12. Compliance**		October 31, 2015

* An interim milestone date, which is missed, is not a violation provided that the final compliance date(s) are met.

** Compliance date based on receiving final permit(s) with new emission factors

Illinois Environmental Protection Agency
Bureau of Air
Permit Section

Response to Comments on the Planned Issuance of a
Revised Clean Air Act Permit Program (CAAPP) Permit to
United States Steel Corporation
Granite City Works
Granite City, Illinois

March 4, 2013

Source I.D. No.: 119813AAI
Permit No.: 96030056

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DECISION

On March 4, 2013, the Illinois EPA issued a revised Clean Air Act Permit Program (CAAPP) permit to United States Steel Corporation - Granite City Works (US Steel) in Granite City, Illinois.

BACKGROUND

US Steel operates an integrated iron and steel mill in Granite City, Illinois. Because of the type and quantity of emissions generated by this source, US Steel is required to have an operating permit under Illinois' Clean Air Act Permit Program (CAAPP) administered by the Illinois EPA.

The CAAPP generally requires that major stationary sources of regulated air pollutants apply for and obtain a CAAPP permit for their operations. CAAPP permits contain conditions identifying all applicable requirements under the federal Clean Air Act and Illinois' Environmental Protection Act (Act).¹ Testing, monitoring, compliance procedures, recordkeeping and reporting requirements are also established, as required or necessary, to assure compliance and accomplish the purposes of the CAAPP. The terms and conditions of a CAAPP permit are enforceable by the Illinois EPA, USEPA and the public.

The Illinois EPA previously issued a CAAPP permit to US Steel on September 3, 2009 (2009 Permit). In the 2009 Permit, among other actions, the Illinois EPA initially carried over emission limits established in various construction permits, including emission limits originally established in Construction Permit/PSD Approval No. 95010001.

A public petition was filed with USEPA on October 1, 2009 requesting that it object to the 2009 Permit. On January 31, 2011, USEPA took final action on the petition, granting it in part and denying it in part (2011 Order). Following a review of USEPA's 2009 Order, the Illinois EPA issued a revised CAAPP Permit to US Steel on May 2, 2011 (2011 Permit). In the 2011 Permit, the Illinois EPA not only explained in greater detail the approach to and use of emission factors for certain emission limits that originated in construction permits, notably Construction Permit/PSD Approval No. 95010001. Various enhancements were also made to monitoring, testing, compliance procedure, recordkeeping and reporting requirements so that Periodic Monitoring in the 2011 Permit would be sufficient to ensure compliance with applicable requirements.

¹ "Applicable requirements" includes the terms and conditions of preconstruction permits issued under regulations approved by USEPA in accordance with Title I of the Clean Air Act. Preconstruction permits, commonly referred to in Illinois as construction permits, derive from the New Source Review (NSR) permit programs required by Title I of the CAA. These programs also encompass state construction permit programs for projects that are not major. These limits are commonly referred to as "Title I" conditions.

The incorporation, or carry-over, of terms or conditions from previous Title I permits into Title V permits typically does not occur on a wholesale basis. Recognizing that construction permits may frequently contain obsolete or extraneous terms and conditions, USEPA has emphasized that only "environmentally significant terms" from previous preconstruction permits must be carried over into Title V permits. See, White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995.

A second public petition was filed with USEPA on August 16, 2011 requesting that it object to the 2011 Permit. On December 3, 2012, USEPA took final action on this petition, granting it in part and denying it in part (2012 Order). Following a review of USEPA's 2012 Order responding to the petition, consideration of comments from US Steel and the public, the Illinois EPA is now issuing a revised CAAPP Permit (2013 Permit or Revised Permit) to US Steel. Consistent with the 2012 Order, the Illinois EPA has made available in the Revised Permit the initial emission factors that US Steel is currently using to demonstrate compliance with certain emission limits originally established by Construction Permit/PSD Approval No. 95010001. In addition, the Revised Permit enhances Periodic Monitoring originally included in the 2009 and 2011 Permits, further detailing how emission factors will be reviewed and, if necessary, updated in the future to assure that appropriate emission factors are used to determine compliance with subject emission limits.

In conjunction with the issuance of this Revised Permit, the Illinois EPA has also given further attention to the subject of malfunction/breakdown and startup, as addressed by USEPA in the 2012 Order. To assist the Illinois EPA, US Steel supplied additional information to support its requests for permission to make claims related to continued operation of particular emission units during malfunction/breakdown events in violation of certain state emission standards. US Steel also supplied additional information to support its similar requests related to startup of particular units. US Steel has provided all the information that 35 IAC 201.261 requires from a source that is requesting permission to make claims related to continued operation with excess emission during a malfunction/breakdown or startup event. The Illinois EPA previously explained in the Statement of Basis accompanying the Draft Revised Permit why the Revised Permit should continue to provide the requested authorizations consistent with 35 IAC 201.262.

OPPORTUNITY FOR PUBLIC COMMENTS

The issuance of this Revised Permit was preceded by a 10-day comment period in accordance with Section 39.5(9)(g) of the Act. This comment period began on February 5, 2013 and ended on February 14, 2013. Before the start of the comment period, the Illinois EPA made available a copy of the Revised Permit that it planned to issue. The planned Revised Permit and a Statement of Basis were mailed to persons who participated in the earlier comment periods. These documents and other relevant documents were also provided to the Six Mile Regional Library District in Granite City and the Illinois EPA's Offices in Collinsville and in Springfield and made available for review by the public at these three locations.

AVAILABILITY OF DOCUMENTS

Notice of the issuance of this Revised Permit is being mailed to persons who participated in the recent comment period. The Revised Permit that has been issued and this Response to Comments will also be made available for reviewing by the public at the Illinois EPA's Regional Office in Collinsville [618/346-5120], the Illinois EPA Headquarters in Springfield [217/782-7027] and at the main library of the Six Mile Regional Library District in Granite City [618/452-6238]. A printed copy of the documents can be obtained free of charge by contacting Brad Frost at the Illinois EPA's Springfield

Headquarters by telephone [888/372-1996 Toll Free - Environmental Helpline; 217/782-7027 - desk line; 217/782-9143 - TDD], by facsimile [217/524-5023] or by email[brad.frost@illinois.gov].

COMMENTS WITH RESPONSES

1. In the 2012 Order, USEPA directed the Illinois EPA to correct the absence of Periodic Monitoring to ensure compliance with certain "emission factor limits" and "maximum emissions limits" in the CAAPP Permit for USS-GCW. Unfortunately, the Draft Revised Permit would continue to use the same emission factors to ensure compliance with permit limits.

This comment fails to recognize the significant enhancements related to use of emission factors that the Illinois EPA has now made in response to the 2012 Order,² as were proposed in the Draft Revised Permit. In particular, the Revised Permit appropriately responds to each of the specific deficiencies in the 2011 Permit identified by USEPA with respect to US Steel's use of emission factors to demonstrate compliance with the subject emission limits. Most significantly, the Revised Permit more clearly sets forth the actions that US Steel must take to review and, if necessary, update the emission factors that it uses to demonstrate compliance with the subject emission limits. For emission units for which stack testing is feasible and appropriate, these actions include review of the results of such testing. For emission units for which stack testing is not feasible or appropriate, it includes periodic review of relevant information related to the emissions of such units. As related to US Steel's use of emission factors with respect to the subject limits, the Revised Permit also includes additional provisions to facilitate supervision of US Steel's use of emission factors by the Illinois EPA, as well as USEPA, consistent with the USEPA's directives in the 2012 Order.³

In addition, as will be discussed in more depth later, this comment improperly suggests that the Revised Permit specifies the emission factors that US Steel is entitled to or "may" use to demonstrate compliance with the subject limits. The Revised Permit does not include such emission factors nor did the 2012 Order direct that the Revised Permit include them. Rather the Revised Permit reflects enhancements to US Steel's use of emission factors to demonstrate

² By way of historical background, USEPA objected to the 2009 Permit on the ground, among others, that it lacked Periodic Monitoring to ensure compliance with certain emission limits in the permit insofar as it relied on emission factors from unspecified sources. See, 2011 Order. The Illinois EPA could not change the relevant permit conditions because, as explained by the Illinois EPA in its response to the 2011 Order, the "emission factors" in the subject conditions in the 2009 Permit are "emission limits," which were established in Construction Permit/PSD Approval 95010001. Accordingly, in the revised CAAPP Permit issued in May 2011, in response to the 2011 Order, the Illinois EPA added provisions to provide a mechanism to assure compliance with the subject emission limits. See, 2011 Permit. The USEPA's 2012 Order addresses the adequacy of the provisions setting forth that mechanism, as well as the ability of the public to comment on the "current" emission factors that US Steel is initially using to determine compliance with the subject emission limits.

³ The various enhancements that would be and have now been made to the 2011 Permit by the issuance of the Revised Permit are discussed in Section III of the Statement of Basis that was prepared to accompany the Draft Revised Permit.

compliance with the subject emission limits. These emission factors would be only one component of the Periodic Monitoring for the subject emission limits. They would be accompanied by other Periodic Monitoring required for the emission units that are subject to these limits, as these emission units are also subject to various regulatory emission standards that are accompanied by requirements for Periodic Monitoring.

2. The additional information that has now been provided by the Illinois EPA regarding the emission factors plainly shows their inherent inability to determine whether USS-GCW is complying with the subject emission limits. The emission factors are calculated to "document" that USS-GCW is complying with its emission limits without any reality checks required. The Draft Revised Permit would list current emission factors for all emission units with "emission factor limits." Every current emission factor in the Draft Revised Permit is equal to its corresponding "emission factor limit." Therefore, the Draft Revised Permit would place the USS-GCW in compliance with all "emission factor limits" by default. In other words, the Draft Revised Permit would fail to require Periodic Monitoring of actual emissions in order to demonstrate compliance with "emission factor limits."

This comment does not identify a flaw in the Revised Permit relative to the role of emission factors in demonstrating compliance with the subject emission limits. Rather, the comment displays a lack of understanding on the role that emission factors have in the 2011 Permit, as now enhanced with the issuance of the Revised Permit.

In particular, the comment correctly observes that US Steel's current emission factors, as were listed in Attachment 3 of the Draft Revised Permit, and now listed in the Revised Permit, are identical to the subject emission factor limits. However, the comment then incorrectly assumes that this automatically places USS-GCW in compliance with the emission factor limits. This would only be the case if US Steel could rely on emission factors listed in Attachment 3 irrespective of other information that demonstrates that the factors understate actual emissions. The Revised Permit does not provide that US Steel can rely on the listed emission factors in this manner.⁴ Attachment 3 simply provides a listing for informational purposes, as directed by the 2012 Order, of the "working" emission factors that US Steel is currently using to determine compliance with the subject limits.⁵

Moreover, in the language of this comment, the listed emissions factors in Attachment 3 of the Revised Permit are subject to "reality checks." In particular, as stack testing is practicable and reasonable for certain emission units, US Steel must confirm compliance with the emission factor limits through stack testing. As stack testing is not feasible or appropriate for certain other emission units, US Steel must

⁴ In addition, the Revised Permit does not preclude the Illinois EPA or USEPA from pursuing US Steel if it was determined that an emission factor being used by US Steel understates actual emission and, considering credible evidence, an emission factor limit is likely being violated. As will be discussed later in this response, this is illustrated by Illinois EPA's current enforcement action against US Steel for violations of two sets of emission factors that US Steel is using for emissions of NOx and VOM from its Electrostatic Precipitator at the Basic Oxygen Furnace.

⁵ A summary of the basis and support for these emission factors, as the 2012 Order directed the Illinois EPA to make publically available, was provided in Table 1 of the Statement of Basis.

confirm compliance with emission factor limits by review of relevant new information that becomes available, as now explicitly required by new Condition 5.13(c) (ii). As the Illinois EPA or USEPA determines that the review of specific emission factors by US Steel has been inadequate or further review is appropriate, new Condition 5.13(e) now provides a formal structure to require US Steel to undertake such review. These "reality checks" will provide assurance that US Steel uses appropriate emission factors on an ongoing basis to determine compliance with the subject emission limits.⁶

More generally, the comment appears to assume that the use of emission factors is intrinsically flawed because the emission factors listed in Attachment 3 of the Draft Revised Permit, and now the Revised Permit, are identical to the subject emission factor limits. While Attachment 3 is correctly characterized, the assumption that the permit is flawed is incorrect. US Steel has elected to proceed conservatively, continuing to use the highest permissible emission factors to demonstrate compliance with the subject emission limits. This is its prerogative. Moreover, based on the results of recent stack testing, US Steel could also use emission factors for certain units that are substantially below the applicable permit limits. For example, for the casthouse baghouse for the blast furnaces, based on the results of recent testing, US Steel could arguably use an emission factor that is about half the applicable emission factor limit and still not understate the actual emissions of this emission unit.⁷ However, US Steel's exercise of its prerogative to use the highest permissible emission factor to demonstrate compliance with the subject limits, instead of a lower factor that more closely reflects the results of recent stack testing, does not show that the Revised Permit is flawed.

⁶ Indeed, as will be discussed later in this document, the Illinois EPA is currently engaged in the initial stage of possible enforcement against US Steel for violations of two sets of limits based on "reality checks" for the emission factors that were being used for those limits. The action involves the working emission factors that US Steel is using for the emissions of nitrogen oxides (NOx) and volatile organic material (VOM) from the electrostatic precipitator (ESP) that controls particulate emissions of the Basic Oxygen Furnace (BOF). In the Revised Permit that has been issued, this is now appropriately indicated in Attachment 3 by the notes that accompany the two emission factors that are at issue.

⁷ For the casthouse baghouse, stack testing in January 2010 and March 2012 measured actual PM emissions that were 6 and 28 percent of the emission factor limit for PM/PM₁₀, 0.0703 pounds per ton of iron. Even if one doubled the higher test result, the resulting source-specific emission factor would only be 0.040 pounds per ton of iron.

Note, as related to its demonstration of compliance with the subject emission limits, it would be unsound for US Steel to simply rely on the emission rate measured during the most recent stack test, without applying some factor of safety to account for day-to-day variation in operation and emissions. During subsequent operation of a unit following the stack test, emissions should be expected to vary, with the actual rates of emissions potentially being both above and below the rate measured during the stack test. Indeed, the results of the two recent tests for the casthouse baghouse show such variation in emissions.

Moreover, as US Steel's obligation with respect to the subject emission limits is to address compliance with those limits, US Steel may use an emission factor that is higher than the actual emission rate, i.e., an emission factor that does not understate emissions. In this regard, US Steel's obligation with respect to the subject limits is different than its obligation when preparing its Annual Emission Report, in which it is required to provide data for the actual emissions of the USS-GCW.

3. The maximum emissions limits in the 2009 Permit, which address annual emissions, are simply the product of the emission factor limits, which are expressed in pounds per ton of production (e.g., ton of iron or steel), and USS-GCW's permitted annual production. Therefore, so long as USS-GCW does not exceed its permitted annual production, it *cannot* exceed any of its maximum emissions limits. As a result, the only "monitoring" necessary to demonstrate compliance with the maximum emissions limits is recordkeeping for the annual iron and steel production. In other words, the Draft Revised Permit would fail to require Periodic Monitoring of *actual emissions* in order to demonstrate compliance with the maximum emissions limits in the 2009 Permit. As such, the maximum emissions limits lack Periodic Monitoring and are not enforceable as a practical matter.

This comment does not show that the Draft Revised Permit would not provide Periodic Monitoring for the maximum emission limits. The comment accurately describes the way that the maximum emission limits were developed during the processing of the application for Construction Permit/PSD Approval 95010001. However, the comment overlooks the fact that if emissions exceed an emission factor limit, USS-GCW has violated that limit. If such a violation occurs, USS-GCW may also have violated the maximum emission limit depending on the actual level of production.⁸ Thus, the Periodic Monitoring required for the maximum emission limits builds on top of the Monitoring for the emission factor limits. In this regard, it is noteworthy that this comment does not suggest an alternative approach to Monitoring for the maximum emission limits that would not rely on an emission factor or other value of the emission rate of an emission unit that addressed the day-to-day operation of the unit.

4. The defects that would remain in the CAAPP Permit for USS-GCW with the Draft Revised Permit are not mere technicalities. US Steel should implement meaningful Periodic Monitoring to assure itself, regulators, and the public that the USS-GCW is operating in compliance with applicable emission limits. The Illinois EPA should correct these defects in the Revised CAAPP Permit that is issued for USS-GCW.

This comment does not show that the CAAPP Permit for USS-GCW does not require meaningful Periodic Monitoring for the subject emission limits. The CAAPP Permit for USS-GCW appropriately addresses US Steel's use of emission factors as a necessary and appropriate mechanism to verify compliance with the subject limits. This is because stack testing is not feasible for many of the emission units that are subject to such limits. For the emission units for which stack testing is required, continuous emissions monitoring is not feasible or appropriate for such units as a means to address the subject limits. In these circumstances, the use of emission factors is appropriate to address emission limits, which limits were, in fact, developed using emission factors.

5. The Title V permits must require "Periodic Monitoring" to assure compliance with applicable requirements. In the 2011 Order, USEPA explained:

⁸ This is aptly illustrated by Illinois EPA's current enforcement action against US Steel for violations of two sets of emission factors that US Steel is using for emissions of NOx and VOM from the ESP at the BOF.

With few exceptions, EPA does not recommend the use of emission factors to develop source-specific permit limits or to determine compliance with permit requirements.

2011 USEPA Order at 14, *citing In the Matter of Tesoro Refining and Marketing Co., Martinez, California Facility*, Petition Number IX-2004-6, March 15, 2005 (Tesoro Order)

The Tesoro Order is of direct relevance to this case, because both involve considerable reliance on emission factors from or based on USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42).

An AP-42 emission factor is a value that roughly correlates the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. AP-42 Fifth Edition, Volume I, Introduction. The use of these emission factors may be appropriate in some permitting applications, such as establishing operating permit fees. *Id.* EPA, however, has also stated that AP-42 factors do not necessarily yield accurate emissions estimates for individual sources. *See, In the Matter of Cargill, Inc.*, Petition IV-2003-7 (Amended Order) at 7, n.3 (Oct.19, 2004); *In re: Peabody Western Coal Co.*, CAA Appeal No. 04-01, at 22-26 (EAB Feb. 18, 2005). Because emission factors essentially represent an average of a range of facilities and of emission rates, they are not necessarily indicative of the emissions from a given source at all times; with a few exceptions, use of these factors to develop source-specific permit limits or to determine compliance with permit requirements is generally not recommended. *Id.*; AP-42 Fifth Edition, Volume I, Introduction. The District's reliance on the emission factors in making its monitoring decisions is therefore problematic.

Tesoro Refining Order, at 32.

This comment does not demonstrate that the role of AP-42 emission factors for certain emission limits is improper. First, the comment misrepresents the breadth of the USEPA's decision in the Tesoro Refining Order. That Order involved the use of AP-42 emission factors for VOC and PM for cooling towers at a petroleum refinery as a means to determine compliance with emission standards. Emissions of VOC and PM from cooling towers may reasonably be calculated indirectly from design and operational data for the cooling tower, including actual data for the VOC and solids content of the water circulating in the cooling tower that can be readily obtained from sampling the water.⁹ As such, the Tesoro Refining Order did not address emission units whose emissions could not readily or practicably be determined through measurements, as is the case for many of the emission units at USS-GCW for which emission factors are being used to determine compliance with emission limits in the 2009 Permit.

More importantly, while citing to the 2011 Order, the comment ignores the USEPA's actual action in the 2012 Order. Stated simply, the 2012

⁹ In this regard, the VOC and PM emissions of cooling towers at petroleum refineries can be determined by a form of modified material balance. This is not the case for the emission units at the USS-GCW that are subject to emission limits, as discussed in Footnote 21 of the Statement of Basis.

Order does not prohibit the use of emission factors in the 2011 Permit for USS-GCW.¹⁰ Rather, the USEPA found that certain elements surrounding the use of emission factors were deficient, as specifically identified in the 2012 Order. These specific deficiencies have been addressed by the issuance of the Revised Permit, as discussed in Section III of the Statement of Basis that accompanied the release of the Draft Revised Permit and further discussed in this Responsiveness Summary.

6. In the Introduction to AP-42, USEPA warns of the risks in using emission factors to set limits or to attempt to determine compliance:

Emission factors in AP-42 are neither EPA-recommended emission limits ... nor standards Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor and the other half will have emission rates less than the factor. ...

. . .

[S]ource-specific tests or continuous emission monitors can determine the actual pollutant contribution from an existing source better than can emission factors. Even then, the results will be applicable only to the conditions existing at the time of the testing or monitoring. To provide the best estimate of longer-term (e. g., yearly or typical day) emissions, these conditions should be representative of the source's routine operations.

AP-42, Fifth Edition (Jan. 1995), Introduction at 2-3.¹¹

This analysis applies to all emission factors, whether derived from AP-42 or from source-specific tests. Without a solid factual link between the emission factor and actual emissions, emission factors are not more than a rough estimate and are certainly not a basis for determining compliance with legally-binding limits.

This comment does not demonstrate a flaw in the 2011 Permit with respect to the role of emission factors. Rather the comment selectively parrots the advice of USEPA in the Introduction to AP-42. The comment also does not consider the implications of USEPA's advice for the CAAPP

¹⁰ It is noteworthy that the general approach taken in the 2011 Permit to determining compliance with permit limits on the amount of emissions, relying upon calculations using emission factors, has previously been upheld by USEPA. See, Order Responding to Petitioner's Request that the Administrator Object to Issuance of State Operating Permit, In the Matter of East Kentucky Power Cooperative, Inc. (December 14, 2009). In East Kentucky Power Cooperative, USEPA did not reject the use of established emission factors for the purpose of calculating emissions from certain coal handling operations and determining compliance with an applicable state emission standard. Indeed, for the Dale Power Plant, USEPA accepted the use of an emission factor and efficiency for the accompanying control device that were actually specified in the Title V permit for the plant.

The USEPA Order in the Matter of East Kentucky Power Cooperative is discussed in the 2011 Statement of Basis accompanying the preparation of the Draft of the 2011 Revised Permit. For example, see page 25 of the 2011 Statement of Basis.

¹¹ Available at <http://www.epa.gov/ttn/chief/ap42/c00s00.pdf>

permit for USS-GCW. Upon examination, it is apparent that the Illinois EPA has proceeded in accordance with the recommendations in the Introduction to AP-42.

For the emission units that are at issue for which stack testing is feasible, the permit generally requires source-specific testing. To accompany such testing, the permit also generally requires operational monitoring and work practices, accompanied by relevant recordkeeping, to verify that the control equipment for those units is operated in a manner that is consistent with the operational conditions during emissions testing. In this regard, the Introduction to AP-42 does not advise against the use of data from source-specific stack testing to determine actual emissions. Rather, the Introduction to AP-42 cautions that such testing may not be sufficient by itself. Consideration must also be given to the operational conditions during stack testing. In the context of regulation and permitting, such consideration may logically lead to other compliance requirements that address the ongoing operation of the emission unit, as has been included in this permit.

For the emission units that are at issue for which stack testing is not feasible or practicable, the permit would directly rely on appropriate emission factors from AP-42 and other sources as the tool to quantify the emissions of those units. The Introduction to AP-42 acknowledges the need to use these types of emission factors in circumstances where stack testing is not feasible or practicable. Indeed, emission factors are recognized as a fundamental tool in air quality management and permitting. Accordingly, the Introduction to AP-42 generally supports the use of traditional emission factors for the subject emission units at the USS-GCW for which such factors would be used.¹²

Emission factors and emission inventories have long been fundamental tools for air quality management. Emission estimates are important for developing emission control strategies, determining applicability of permitting and control programs, ascertaining the effects of sources and appropriate mitigation strategies, and a number of other related applications by an array of users, including federal, state, and local agencies, consultants, and industry. Data from source-specific emission tests or continuous emission monitors are usually preferred for estimating a source's emissions because those data provide the best representation of the tested source's emissions. However, test data from individual sources are not always available and, even then, they may not reflect the variability of actual emissions over time. Thus, emission factors are frequently the best or only method available for estimating emissions, in spite of their limitations.

¹² The role of emission factors for emission units for which source-specific data cannot be obtained, e.g., emission units which cannot be tested, is also further discussed later in the Introduction to AP-42, "If representative source-specific data cannot be obtained, emissions information from equipment vendors, particularly emission performance guarantees or actual test data from similar equipment, is a better source of information for permitting decisions than an AP-42 emission factor. When such information is not available, use of emission factors may be necessary as a last resort. Whenever factors are used, one should be aware of their limitations in accurately representing a particular facility, and the risks of using emission factors in such situations should be evaluated against the costs of further testing or analyses." Introduction to AP-42, page 3.

Introduction to AP-42, page 1.

In summary, the Introduction to AP-42 actually supports the use of emission factors in the manner in which they have been used in the 2011 Permit. It is also fully consistent with the 2012 Order, as USEPA has not precluded US Steel's use of emission factors, both source-specific and non-source-specific, as tools to determine compliance with the subject emission limits.

7. The Draft Revised Permit would not contain any Periodic Monitoring to confirm compliance with any of the emission factor limits. The 2011 Permit does require infrequent stack testing for some pollutants at some of the subject emission units.¹³ However, none of this Monitoring directly measures the emission factor limits. All of the testing in the 2011 Permit is based on standard USEPA test methods, which yield measurements of emissions in pounds per hour.¹⁴ The Statement of Basis and the Draft Revised Permit are silent on how emissions measured in pounds per hour should be converted into emission factors in pounds per ton for purposes of determining compliance with the emission factor limits. Thus, the Draft Revised Permit would not provide Monitoring sufficient to ensure compliance with the emission factor limits.

This comment does not show that the Revised Permit would lack Periodic Monitoring for emission limits expressed in pounds per ton. The fact that stack tests do not directly measure emissions in pounds per ton does not show that Periodic Monitoring is not present for such limits. Likewise, the fact that the Illinois EPA has not explained how stack test results that are expressed in pounds per hour are converted to emissions in pounds per ton does not show that the CAAPP Permit for USS-GCW would be deficient.¹⁵ Compliance with emission factor limits for emission units for which stack testing is performed can be readily verified by such testing by converting the results of those tests into an emission rate in pounds per ton and comparing that emission rate to the applicable limit.

8. "Emission factor limits" are based on the throughput of certain materials (e.g., iron pellets, iron, and steel). The conversion of emission test results in pounds per hour to pounds per ton is not straightforward and requires a simultaneous measurement of production, which is not otherwise measured by USEPA test methods, plus calculations and assumptions not set forth in the permit repository. However, the Draft Revised Permit would fail to specify how the throughput of these materials should be measured for each subject emission units and where in the process measurement will occur for each process or collection of processes to determine compliance with both

¹³ See the table accompanying these comments.

¹⁴ The 2009 Permit requires stack testing to be conducted using, as appropriate USEPA Methods 1 through 4 coupled with the following USEPA Methods: Methods 5, 201 or 201A for PM and PM10; Method 6 for SO₂; Method 7 for NO_x; Method 25 for VOM; Methods 7E or 19 for NO_x; and Method 29 for lead.

¹⁵ Incidentally, emission rates, in pounds per hour, are not directly measured by USEPA test methods. Hourly emission rates are calculated from various measurements made during testing. Typically, the hourly emissions rates are calculated by multiplying the concentration of the pollutant in the exhaust as measured by one test method and the hourly exhaust gas flow rate as measured by other test methods.

the "emission factor limits" and maximum emissions limits. Thus, the subject conditions remain unenforceable.

Notwithstanding the claim made by this comment, conversion of results of stack testing in pounds per hour to emission rates in pounds per ton is a straightforward matter. Such conversions are routinely made in conjunction with stack testing to address emission limits and emission standards that are expressed in pounds per ton and terms other than pounds per hour. USEPA has not found it necessary to develop a formal methodology by which data is measured. This is most likely because production data is of direct interest to sources. As such, this data is routinely collected by sources by methods that are well established and it is a simple matter to provide such data for the periods during which stack testing is conducted.

9. The conversion of emission data in pounds/hour to pounds/ton is not straightforward. For example, in Condition 7.5.6(a) of the 2009 Permit, is "steel" the amount of steel product sold based on invoices less inventory, the amount of liquid steel tipped from the ladle, the amount of steel cast, "net steel," or some other definition? If it is "net" steel, then what is "net" steel and how/where is it measured? Is the amount of steel used to calculate emissions from the BOF ESP the same as the amount of steel used to calculate emissions from argon stirring or slab ripping? Where and how are each of the materials measured? These fundamental questions, essential to convert results of stack tests in pounds/hour into emission rates in pounds/ton for comparison to the "emission factor limits," are not specified. Thus, they could be subject to dispute in enforcement actions, rendering the "emission factor limits" unenforceable as a practical matter.

The concerns identified in this comment do not make the subject emission limits in pounds per ton unenforceable. In the absence of an explicit provision to the contrary, the production of an emission unit, as needed to convert emissions in pounds per hour to emissions in pounds per ton, is the actual production without any adjustments. Similarly, if the production rate of a unit could be measured at either the inlet or outlet of the unit, in the absence of an explicit provision to the contrary, the production of the unit is determined from the larger rate. Moreover, the fact that certain provisions may be subject to different interpretations and a potential cause for disagreement in an enforcement action does not render such provisions unenforceable.^{16, 17}

10. The approach taken in the Draft Revised Permit to determining compliance with maximum emissions limits (i.e., multiplying an emission

¹⁶ It is not uncommon for differences in interpretation to be a factor in enforcement actions. For example, a key aspect of USEPA's ongoing enforcement initiative for coal-fired utility boilers is the correct interpretation of the phrase "routine maintenance and repair" in the New Source Review Program under the Clean Air Act. The operators of certain coal-fired utility boilers argue that changes that were made to those boilers are "routine maintenance and repair" and therefore not modifications. The USEPA takes the opposing view. The existence of this disagreement has not prevented the USEPA from conducting enforcement actions against the operators of coal-fired utility boilers for failure to obtain the appropriate permits prior to various changes to those boilers.

¹⁷ It is also noteworthy that Condition 7.5.6(a), as cited by this comment, does not contain any emission limits. It is simply a production limit.

factor that is representative of emissions during routine day-to-day operations by annual iron or steel production) does not include excess emissions that occur during startups, malfunctions and breakdowns, and thus underestimates actual emissions.

This comment fails to identify a flaw in the approach to annual emission limits in the Draft Revised Permit. This is because this comment overlooks the fact that the permit would require US Steel to separately account for periods of time, including periods of startup, malfunction and breakdown, when the established emission factors would understate actual emissions. See, new Condition 5.13(c), as well as existing Conditions 7.1.9(h) (ii), 7.4.9(i) (ii), 7.5.9(f) (ii) and (g) and 7.6.9(c) (ii) in the Revised Permit.

Also noteworthy is that this comment does not propose an alternative approach to the determination of emissions for purposes of determining compliance with the subject annual emission limits.

11. The Draft Revised Permit would require US Steel to update its emission factor(s) based on future emissions tests or future information from other sources, to assure that the procedure used to calculate annual emissions for comparison with the maximum emissions limits does not underestimate actual emissions. However, the Draft Revised Permit would not explain what happens if an updated emission factor exceeds its corresponding "emission factor limit." Would US Steel be required to install additional controls in order to reduce emissions sufficiently to come back into compliance with the "emissions factor limit?" Or would the "emission factor limit" be updated to match the new emission factor since emission factors and "emission factor limits" have the same values? Increasing the "emission factor limit" would change what is supposed to be an enforceable limit in pound/ton outside of a formal permit revision, and would necessitate an increase in the maximum emissions limit as well. This shows that the use of emission factors in the Draft Revised Permit is not actually designed to ensure compliance with emission limits, but rather to provide a calculation that demonstrates compliance, regardless of reality.

This comment does not demonstrate that the approach to the subject emission limits is flawed. Indeed, this comment largely answers itself to show that the approach in the permit is sound. As observed by this comment, an increase in an emission factor limit can only occur through an appropriate formal permit revision. An increase in a maximum emission limit, as would almost certainly accompany an increase in an emission factor limit,¹⁸ can also only occur through an appropriate formal permit revision. Accordingly, the subject emission limits are enforceable. The simple observation that emission limits can potentially be changed through an appropriate, administrative process does not show that these limits are not enforceable. It shows exactly the opposite, i.e., the limits are enforceable until and unless they are changed.

¹⁸ A permit proceeding to increase an emission factor limit would also need to address an increase in the associated maximum emission limit unless the increase in the emission factor limit would be accompanied by some other measure that would act to prevent an increase in permitted annual emissions.

The further question posed by this comment is what would occur if the updated emission factor for an emission unit is higher than the applicable emission factor limit, i.e., would the limit be revised or would US Steel be required to further control emissions to comply with the established limit? As an initial matter, if an "updated emission factor" for an emission unit is higher than the applicable emission factor limit, the emissions of the unit would be violating the emission factor limit.¹⁹ The consequences that arise from such a violation would depend on the specific facts of the violation, including the technical nature of the violation and its circumstances. As those consequences would potentially involve formal enforcement action, possibly with involvement of the Illinois Attorney General's Office, it would not be appropriate in this document to speculate upon what those consequences would be in different circumstances.

12. The 2012 Order underscored the importance of adequate monitoring in light of environmental justice concerns pertaining to the Granite City area:

EPA acknowledges that the immediate area around the USS-GCW facility is home to a high density of low-income and minority populations and a concentration of industrial activity, and thus raises potential environmental justice concerns. Focused attention to the adequacy of monitoring and other compliance assurance provisions is warranted in this context.

2012 Order, page 6

However, the Draft Revised Permit does not increase or enhance Periodic Monitoring or provide any additional assurance that compliance with limits would be achieved. Rather, Illinois EPA sets out excuses for why additional Monitoring was not possible or warranted. Rather than address the environmental justice issue head on, Illinois EPA reframes it, arguing that it has no authority to impose additional emission controls, ignoring the USEPA mandate on adequacy of Monitoring. The issue is not whether emission limits should be added in the context of this CAAPP Permit. The issue is whether the Draft Revised Permit meets the Clean Air Act's requirement to contain Periodic Monitoring adequate to ensure compliance with emission limits. The Illinois EPA does not review the adequacy of proposed Monitoring within the environmental justice context, which it does have the authority to do, and which is required by Title V, but rather makes excuses for inadequate Periodic Monitoring in a different context. Statement of Basis at 11.

This comment mischaracterizes the 2012 Order²⁰. USEPA acknowledged the location of the Granite City Works in a community that poses potential concerns related to environmental justice, as noted by this comment.

¹⁹ Whether an increase in an emission factor limit would directly result in a violation of a maximum emission limit would depend on USS-GCW's annual production. However, unless USS-GCW was operating at a very low level of production (as occurred in 2009), it is reasonable to expect that any significant violation of an emission factor limit would also result in a violation of the associated maximum emission limit.

²⁰ In fact, USEPA found in its 2012 Order responding to the 2011 Petition that, "[t]he Petitioner has not raised any specific claim regarding environmental justice, and has not identified any distinct environmental justice-related duty or responsibility that it believes Illinois has violated." 2012 Order, page 5.

However, USEPA did not suggest that this fact, by itself, necessitated a "wholesale" review by the Illinois EPA of the provisions for Periodic Monitoring in the 2011 Permit, as indicated in this comment. Rather the Order identified specific defects in the 2011 Permit, which would be addressed by the Draft Revised Permit, as has already been discussed.²¹

13. The Illinois EPA incorrectly asserts that additional Periodic Monitoring is not warranted due to the "nature" of the emission units and available methodology for measuring emissions, asserting that stacks are not present at subject emission units, thus limiting the ability to monitor them. Statement of Basis at 19. This not true.

This comment inaccurately characterizes the discussion in the Statement of Basis. This is particularly true as the comment suggests that the 2011 Permit would not require stack testing to verify actual emission rates as compared to the subject emission limits for those emission units where such testing is feasible and appropriate. In fact, the 2011 Permit does require such testing.

As a general matter, with respect to the subject emission units and emission limits, the Statement of Basis makes two different points, which this comment does not directly address, much less refute. The first point is that the 2011 Permit contains requirements for Periodic Monitoring for the subject emission units that are related to the regulatory emission standards that apply to these units. These "other requirements" for Periodic Monitoring include requirements for stack testing where feasible and appropriate. These other requirements also include various requirements that serve to assure that the emissions of the subject units are properly controlled on an ongoing basis, so as to provide assurance of a consistent rate of emissions. For example, see Statement of Basis, page 20.²² Accordingly, the Revised Permit does not include additional stack testing requirements to specifically address the subject emission limits as appropriate stack testing is already required related to the applicable emission standards.

The second point is much simpler. Stack testing is not feasible for a number of emission units or "points of emissions" to which subject emission limits apply.²³ This is because these emission units or emission points are not equipped with stacks or vents that would make such testing feasible. The existence of such emission limits, for which compliance cannot be directly verified, is an unavoidable consequence

²¹ This comment selectively quotes the 2012 Order, so as to misrepresent the relevant finding by USEPA in the Order with respect to environmental justice concerns. In its entirety, the quoted passage reads, "EPA has thoroughly reviewed and evaluated the title V objections submitted by the Petitioner, discussed below. EPA acknowledges that the immediate area around the USS-GCW facility is home to a high density of low-income and minority populations and a concentration of industrial activity, and thus raises potential environmental justice concerns. Focused attention to the adequacy of monitoring and other compliance assurance provisions is warranted in this context. As explained below, where the Petitioner has demonstrated that the permit fails to assure compliance with applicable requirements, EPA is granting the petition." 2012 Order, page 6.

²² Also refer to the 2011 Statement of Basis, pages 23 through 25, 64 through 68, 83 through 92, 96 through 103, and 104 through 106, and the 2011 Responsiveness Summary, Items 26 through 28.

²³ Most significantly, stack testing is not feasible to measure the "uncaptured emission" of the blast furnaces and the BOF furnaces, which are not captured by the control systems on these furnaces and are emitted directly to the atmosphere.

of the New Source Review Program. As a result, for these emission units, not only must compliance with the subject emission limits be determined using emission factors but those emission factors will not be source-specific emission factors that can be periodically verified through emission testing. For example, also see Statement of Basis, page 18.²⁴

14. A large number of emission units subject to "emission factor limits" warrant additional Periodic Monitoring. The 2011 Permit does not require testing for several units with baghouses. Two other subject units emit through "vents" and could be tested using standard USEPA test methods. Any emission unit that can be controlled by a baghouse or has a stack or vent can be tested using standard USEPA test methods. The failure to require adequate Monitoring for these emission units plus other uncontrolled emission units is a serious flaw in the Permit.

This comment does not show that additional stack testing or other Periodic Monitoring should be required for USS-GCW. In particular, the 2011 Permit, as well as the Revised Permit that has now been issued, should be considered to require stack testing for all subject emission units that have control devices, as will be discussed later. Stack testing is also required, as is appropriate, for the emission unit without a control device that has discrete vents.²⁵

Incidentally, the comment's claim that any stack or vent is amenable to emission testing using USEPA's standard methods is not correct. There are a variety of circumstances that preclude stack testing using standard USEPA test methods. These include the geometry of the vent or stack or the preceding ductwork, inconsistent exhaust gas flow rates during normal operation of the emission unit, very low or very high flow rates, and the presence of high levels of moisture.

15. The Draft Revised Permit would not require any actual Periodic Monitoring or stack testing to confirm compliance with proposed limits for two of the three emission units that emit lead, i.e., the roof monitor on the BOF Shop and desulfurization and hot metal transfer.

²⁴ Also refer to the 2011 Statement of Basis, pages 23 through 25.

²⁵ This comment, as submitted, claimed that there are at least 12 subject emission units vented through a stack and equipped with an emission control device for which stack testing could be conducted but, by implication, is not required by the 2011 Permit. However, the Illinois EPA could not replicate the accounting performed by the commenter.

In fact, there are 18 subject emission units. There are eight subject emission units that do not have discrete vents for which testing is not feasible. In this regard, the caster molds for continuous casting are exhausted through general building ventilation, rather than discrete vents, so that stack testing is not feasible for these operations.

Stack testing should be considered to be required for all nine of the emission units that have control devices. As will also be discussed later, for the three material handling units, one stack test would be required for one of the units as selected by the Illinois EPA shortly before testing occurs. Given the similarity of these units, which all involve material handling and are all equipped with baghouses, the results of this test would be considered representative of all three emission units.

Finally, although not equipped with control devices, the spray chambers for the continuous casters are served by discrete vents and representative stack testing is required for one of these vents, as will be discussed further later.

This comment correctly observes that the 2011 Permit would not require stack testing for the roof monitor on the BOF Shop.²⁶ This is because emission testing is not feasible for this unit or emission point, where the uncaptured emissions of the BOF furnaces enter the atmosphere. However, this comment does not even discuss the feasibility of emission testing for the BOF roof monitor. Moreover, the 2011 Permit clearly requires Periodic Monitoring for the roof monitor. In particular, the 2011 Permit requires regular opacity observations for the emissions from the BOF roof monitor. See, Condition 7.5.7(e). These opacity observations serve to directly address the effectiveness with which emissions of particulate matter, including lead, from the BOFs are being captured on an ongoing basis. The 2011 Permit also requires Periodic Monitoring to address the ongoing operation of the ESP control system, which currently controls particulate emissions of the BOF, including lead. For example, the CAAPP Permit for USS-GCW, as issued in 2011, includes Work Practice requirements for the operation of the capture system and requirements for associated operational monitoring. See, Conditions 7.5.5-3(b), 7.5.6(h) and 7.5.8(d).

Contrary to the claim made by this comment, the 2011 Permit requires stack testing for lead emissions from Hot Metal Desulfurization and Hot Metal Transfer. See, Condition 7.5.7(b)(i). Since this emission unit is controlled by the Reladle/Desulfurization Baghouse, stack testing is practicable and is required for various pollutants, including lead. Other Periodic Monitoring, in addition to stack testing, is also required as this unit is subject to various requirements pursuant to the Iron and Steel NESHAP. Notably, refer to the Work Practices for this baghouse required by 40 CFR 63.7790(b). See, Condition 7.5.5-1. Also, refer to the Monitoring and Inspection required by 40 CFR 63.7830(b). See, Condition 7.5.8(a)(iii).

16. The Draft Revised Permit would only requires stack tests every 2 ½ years for the principal source of lead, the BOF ESP. The dust on window sills in a home following spring cleaning is not a fair indication of dust levels on those window sills during the rest of the year. Stack testing is like spring cleaning as an emission unit is tuned up in preparation for testing. Thus, testing on the specified frequency does not protect the community around USS-GCW.

This comment does not show that more frequent stack testing should be required for the BOF ESP. Assuming, for purposes of discussion, that the comment's observation about stack testing is correct, the conclusion of the comment is still faulty. That is, if an emission unit is tuned up in preparation for emission testing, the proper response by a regulatory authority is not to require more frequent emission testing. The proper response is to require the unit to be maintained in a tuned-up condition, consistent with its operational condition during emissions testing. This approach works to have the environment benefit from the tuned up condition of the emission unit. This is the approach that USEPA generally takes in its NSPS and NESHAP standards. It is also the approach that has been taken in the 2011 Permit for the BOF ESP. In particular, the CAAPP Permit for USS-GCW issued in 2011

²⁶ A "roof monitor" is a raised section of the roof on a building, which often straddles the ridge, that has openings or windows on the long sides to admit light or to allow the escape of hot air.

requires US Steel to properly maintain and operate the ESP between stack testing. Continuous opacity monitoring is also required for the BOF ESP to verify proper operation on an ongoing basis. See, Condition 7.5.8(a) (iv) .

17. The frequency of testing of the BOF ESP for lead is a particularly egregious omission. This unit is permitted to emit 2,250 pounds of lead annually. Lead is likely to be highly variable in emissions from USS-GCW as it enters the facility in scrap and iron ore, which contain highly variable amounts of lead. Thus, infrequent stack testing and information from other facilities are unlikely to protect the community. Lead can and should be continuously monitored at the significant emission units at USS-GCW, particularly as air quality in the Granite City area is currently nonattainment for lead.²⁷

This comment does not demonstrate that more frequent testing of the BOF ESP is needed to address compliance with the subject limits for lead that apply to this emission unit. As noted by the comment, the BOF Shop is of concern for emissions of lead due to the presence of the lead in the scrap metal that is charged to the BOF Furnaces, along with molten iron from the blast furnaces.²⁸ Based on recent testing for the BOF ESP conducted in July 2012, lead emissions are less than 20 percent of the applicable limit.²⁹ The proper operation of the ESP on an ongoing basis is addressed by continuous monitoring of the opacity of the emissions of the ESP, which is an indicator of proper operation for control of particulate emissions. Technology for continuous emissions monitoring for particulate matter, much less for lead, has not been developed for application to BOF furnaces.

The Illinois EPA shares the concern expressed in this comment about current air quality for lead in the Granite City area. The Illinois EPA is currently engaged in developing Illinois' State Implementation Plan (SIP) to bring the Granite City area, along with the other lead nonattainment area in Illinois, into attainment with the new lead air quality standard. For the various sources that are responsible for the high levels of lead air quality in these areas, this plan will include additional emission standards and control requirements for their emissions to bring these areas into attainment for lead.

18. The 2009 Permit contains "emission factor limits" and maximum emissions limits for 52 different emission unit/pollutant combinations.³⁰ The Draft Revised Permit would require actual stack testing to confirm emission factors for only about one third of the emission unit and pollutant

²⁷ The Granite City area is currently nonattainment for lead, so that any increases in lead emissions from USS-GCW would exacerbate an existing health risk for the area.

²⁸ The blast furnaces and the handling of molten iron at USS-GCW have not been identified as being of concern for emissions of lead.

²⁹ The lead emissions of the BOF ESP measured in stack testing conducted in July 2012 were 0.0376 pounds per hour, compared to the applicable limit of 0.1934 pounds per hour. See, Attachment in the Statement of Basis for the Draft Revised Permit.

³⁰ This comment, as submitted, incorrectly indicates that there are 54 emission unit and pollutant combinations. In fact, there are only 52 such combinations. The comment incorrectly counted Deslagging & Material Handling (Baghouse #1) twice. Likely, this was because its limits for PM and PM₁₀ emissions appear twice in the 2011 Permit, once in Condition 7.1.6(b) (i) and again in Condition 7.6.6(a) .

combinations (16 out of the 52).³¹ This testing is inadequate, as it occurs infrequently, ranging from only once over the life of the facility up to, at most, every 2 ½ years. A periodic stack test only tells one about emissions after the source has tuned up its unit before the test, but nothing about emissions during routine, day-in day-out operation. This is not adequate to protect the community in which USS-GCW is located.

This comment is not relevant to action that would be taken in the Revised Permit pursuant to the 2012 Order. In this Order, USEPA did not direct the scope of the stack testing required by the 2011 Permit to be expanded. In the 2012 Order, the USEPA addressed the specific issues posed by ABC's 2011 Petition to object to the 2011 Permit. These issues, as summarized in the 2012 Order, did not include the general scope of the stack testing required by the 2011 Permit, as now raised in this comment.

Incidentally, this comment also significantly understates the number of unit and pollutant combinations for which stack testing is required. The 2011 Permit requires stack testing for 30 of these combinations.^{32, 33}

19. In 2011, the Illinois EPA may have intended to require additional stack testing for the blast furnace that is not clearly reflected in the 2011 Permit. Condition 7.4.7(c) adds SO₂, NO_x and VOM to the pollutants for which stack testing is required at the casthouse and iron spout baghouses, pursuant to Condition 7.4.7(a). However, Condition 7.4.7(a) applies only to the casthouse. This creates an ambiguity that renders 7.4.7(c) unenforceable as a practical matter. It is not clear whether 7.4.7(a) applies to the iron spout. This is especially confusing as there are no NO_x or VOM limits for the iron spout but Condition 7.4.7(c) requires testing of NO_x and VOM at the iron spout baghouse. The Illinois EPA should revisit the relationship between Conditions 7.4.7(a) and 7.4.7(c).

This comment is not relevant to the current permit action, as explained above. Moreover, the comment involved another mistake made by this

³¹ In the table accompanying these comments, refer to the column labeled "stack testing required." "Yes," indicating monitoring is required, only appears for 16 emission unit/pollutant combinations.

³² Most significantly, the comment assumed that stack testing was not required by the 2011 Permit for subject emission limits for PM₁₀ even though the numerical values of these limits are identical to the subject limits for PM that also apply. In these circumstances, the required stack testing for PM also serves to address the subject limits for PM₁₀. This is because emissions of filterable PM₁₀, as are addressed by the subject limits for PM₁₀, will never be greater than the PM emissions. This fact is specifically addressed in the asterisked note to Condition 7.5.7(b) (i).

In addition, this comment overlooked the stack testing that is required for the spray chambers on the continuous casters, which is subject to limits for PM and PM₁₀. See, Condition 7.6.7(b).

³³ The 2011 Permit should also be considered to require stack testing for four more unit/pollutant combinations. This is because it provides that stack testing is required on either the track hopper baghouse, bin floor baghouse or Baghouse #1, as will be specified by the Illinois EPA shortly before testing is conducted. This should be counted as a requirement for stack testing for six combinations, whereas the comment only counted this as two stack tests. This is because the testing for the selected emission unit would also be representative of the other two units. This is discussed in response to Comment 19 in the Responsiveness Summary prepared by the Illinois EPA to accompany the issuance of the 2011 Permit.

commenter in the accounting of stack testing required by the 2011 Permit. The interplay of the conditions in the 2011 Permit addressed by this comment may not be immediately apparent, as shown by the submittal of this comment. However, upon examination, the relevant requirements of the 2011 Permit are clear. Stack testing for SO₂, NO_x and VOM is required both for the casthouse baghouse and for the iron spout baghouse. What is missed by the comment is that Condition 7.4.7(a) requires stack testing for both the casthouse baghouse and the iron spout baghouse pursuant to the Iron and Steel NESHAP, 40 CFR 63.7820(a). This is because both of these baghouses are particulate control devices for the casthouse. Accordingly, the Iron and Steel NESHAP requires stack testing for both baghouses. Moreover, Condition 7.4.7(a) does not actually indicate that such testing is only required for the casthouse baghouse. Condition 7.4.7(a) generally addresses stack testing that is required for the casthouse.^{34,35}

20. The remaining emission factors would not be tested or monitored at all. This is not adequate to protect the nearby community in which USS-GCW is located and as such, does not address environmental justice.

This comment incorrectly characterizes the circumstances of the emission units for which stack testing is not feasible or appropriate. While stack testing would not occur for these units, appropriate Periodic Monitoring is appropriately required for those units as needed to address proper operation of those units. In addition, for these emission units, US Steel would be required to review the emission factors that it uses to determine compliance with the subject limits on at least an annual basis to confirm the continued appropriateness of those emission factors.

21. For the emission unit/pollutant combinations that are not tested at all, new Condition 5.13(c) (ii) would only require that emission factors be reviewed and, if necessary, updated on at least an annual basis. Stack testing would not be required at USS-GCW to confirm the factors are representative of USS-GCW.

This is correct. As already discussed, stack testing is not feasible for many of the emission units to which the subject emission limits apply. These emission limits were developed from emission factors published by USEPA in AP-42 and other documents with the understanding that it likely would never be possible to verify the actual emission rates of those emission units with stack testing. In such circumstances, it is appropriate that the continued adequacy of the emission factors that are being used to verify compliance with those emission limits be confirmed by review of the types of information that were used in the original establishment of those limits.

³⁴ The confusion exhibited in this comment is certainly understandable. US Steel's nomenclature for the two baghouses for the casthouse does not directly indicate that the iron spout baghouse is also a particulate control device for the casthouse.

³⁵ With regard to the iron spout baghouse, the comment correctly observes that Condition 7.4.7(c) requires stack testing for NO_x and VOM, for which there are not emission limits. However, as the iron spout baghouse is subject to emission limits for SO₂ and stack testing for SO₂ is necessary, stack testing for NO_x and VOM was also required. A change will not be made to the scope of the testing required by Condition 7.4.7(c) because the 2012 Order did not direct changes to the scope of required stack testing.

22. For the emission unit/pollutant combinations for which proposed new Condition 5.13(c) (ii) would require annual review, what constitutes adequate review? This ambiguity renders the condition ambiguous and hence unenforceable as a practical matter. Further, review is not a replacement for nor equivalent to Monitoring, which is required to assure compliance. This lax provision is not adequate to ensure compliance with emission limits. It also is not reasonable given the nearby high density of low income and minority populations who will be exposed to emissions that are not monitored at all.

This comment does not demonstrate that new Condition 5.13(c) (ii) would be unenforceable. This is because the comment ignores new Condition 5.13(e), which now provides a formal mechanism for the adequacy of US Steel's periodic review of emission factors pursuant to Condition 5.13(c) (ii) to be subject to oversight by the Illinois EPA, as well as USEPA. New Condition 5.13(e) would set forth a formal procedure to address potential circumstances in which US Steel should conduct further review of the particular emission factors that it is using for certain limits. It requires US Steel to conduct a further review of specific emission factors being used for particular emission unit(s) within 45 days of written notification from the Illinois EPA or USEPA that circumstances are such that further review is needed for specific emission factor(s). See, Statement of Basis, pages 25 through 26.

23. Moreover, for the maximum emission limits, unlike the provisions for the emission factors, the Draft Revised Permit would not require any future action or review.

This comment does not suggest specific further action or review that should be required by the Revised Permit relative to the maximum emission limits. Moreover, it is not apparent what such review or action would entail. This is because the Revised Permit cannot legally provide for periodic review of the subject emission limits, since these limits were established in a construction permit.³⁶

More importantly, as already discussed, the Draft Revised Permit would require US Steel to appropriately review the current emission factors that it uses to determine compliance with the subject emission limits. As acknowledged in another comment, US Steel is using emission factors to determine compliance with the maximum emission limits, as well as the emission factor limits. Accordingly, the requirements in the Draft Revised Permit for review of emission factors would serve to address the appropriateness of emission factors relative to both emission factor limits and maximum emission limits. In other words, US Steel need not conduct separate reviews of the "working" emission factors

³⁶ These emission limits were originally established in Construction Permit/PSD Approval 95010001. As these limits originated in a construction permit, they are "Title I" conditions. Their authority ties back to provisions in Title I of the Clean Air Act, as well as to state provisions for construction permits. Thus, changes to the subject limits, which must necessarily be contemplated in conjunction with any review of these limits, would need to be made in accordance with relevant "Title I provisions," and not under Title V of the Clean Air Act. *Accord, In the Matter of East Kentucky Power Cooperative, Inc., Hugh L. Spurlock Generating Station, Maysville, Kentucky*, Petition Number IV-2006-04, (August 30, 2007) (acknowledging USEPA's general policy to not object to a title V permit due to concerns over BACT determinations made long ago in a separate permitting process).

that it is using to relative to the emission factor limits and to the maximum emission limits.

24. The 2012 Order requires the Illinois EPA to "...provide supporting documentation for the accuracy and appropriateness of those emission factors, such as historical source test data or other available information." 2012 Order at 12. The Order specifically notes that the 2011 Permit did not indicate whether "the emission factors are indicative of the emissions from USS-GCW or an explanation of why use of the emission factors is adequate to assure compliance with the emission factor and maximum annual limits." 2012 Order at 11. The repository still does not contain this critical information for most of the subject emission units.

The repository for the Draft Revised Permit includes the information specified by the 2012 Order. In particular, for the subject emission units at the USS-GCW for which stack testing has been performed, the repository includes the reports for those tests. The repository also includes other supporting documentation for the current emission factors that US Steel is using to determine compliance with the subject emission limits. This information is summarized in the Statement of Basis that was prepared by the Illinois EPA to accompany the Draft Revised Permit. This Statement of Basis also explains why emission factors are an appropriate and necessary mechanism to determine compliance with the subject emission limits.

25. Most of the current emission factors were calculated from AP-42 and an unsupported capture and/or control efficiency, or an emission inventory and an unsupported capture and/or control efficiency that have no nexus with USS-GCW. The material in the repository for the Draft Revised Permit contains no evidence that these emission factors and this calculation procedure yield emissions representative of USS-GCW.

This is not correct. While most of the emission factors were originally developed from emission factors from AP-42, as generally observed by this comment, stack testing now has been conducted for many of the subject emission units for which testing is feasible. The material in the repository includes information for these stack tests. The repository also includes other information describing the basis for the emission factors that US Steel is currently using.

26. Many of the current emission factors were calculated from published emission factors, adjusted based on capture and control efficiency. However, there is no way to determine the origins and/or accuracy of the capture and control efficiencies used in the calculations. Sources of information were not cited. No nexus with USS-GCW is identified. My calculations suggest that most of the control efficiencies were back-calculated from emission factors in pounds/ton, emission limits in tons/year, and production limits.

For most emission units that are subject to limits, the efficiencies that were originally used in the development of emission factors are now no longer relevant. This is because stack testing is required for emission units that are equipped with control devices and this testing will verify the adequacy of current emission factors. Moreover, all recent stack tests for the subject emission units for pollutants that

are controlled show emissions are within the subject emission limits with ample compliance margins.

The only emissions units or "emission points" for which the original capture efficiencies are relevant are uncaptured emissions from the blast furnace casthouse and uncaptured emissions at the roof monitor of the BOF shop. This is because stack testing is not feasible for these emission units. For these units, the values for these efficiencies used in the original development of emission factors continue to be reasonable values that are consistent with general engineering practice for the capture systems that are used to comply with the subject limits. Because the efficiencies of capture systems, as well as control systems, for particulate are not commonly measured, engineering data must be used for these efficiency values.³⁷ The value of capture efficiency for the blast furnace casthouse, 95 percent capture, is considered to be a conservative value for the level of capture that results from compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63 Subpart FFFFFF. Based on the level of opacity routinely observed from the casthouse during tapping of a blast furnace, it is probable that the capture efficiency at the casthouse is greater than 95 percent. The capture efficiencies used for the BOF furnaces, i.e., 95 percent for charging, 99.9 percent for refining and 95 percent for tapping, are believed to be reasonable values for the current configuration of the capture systems on these furnaces and compliance with the NESHAP, 40 CFR 63 Subpart FFFFFF.

27. As described in the Attachment in the Statement of Basis, many of the emission factors in the Draft Revised Permit are based on USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42). This is not a reasonable basis for setting emission limits or assuring compliance with limits. USEPA warns that AP-42 emission factors are not suitable for setting permit limits or determining compliance. The Introduction to AP-42 explains that AP-42 emission factors "...are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i.e., a population average)."³⁸ The Introduction to AP-42 goes on to explain that

[e]mission factors may be appropriate to use in a number of situations such as making source-specific emission estimates for areawide inventories...Use of these factors as *source-specific permit limits* and/or as *emission regulation compliance determinations* is not recommended by EPA. Because emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have

³⁷ As generally discussed in the Statement of Basis, emission standards for particulate emissions generally are set in terms of the mass of emissions from the control device. The effectiveness of emissions capture is generally addressed by standards for the opacity of uncaptured emissions or the presence of visible emissions. Compliance with standards set in these terms can be verified without need to conduct measurements for capture efficiency or control efficiency. In addition, standards that are set in these terms accommodate a source's implementation of measures that reduce the generation of particulate emissions, which would not necessarily be the case if standards were set in terms of capture efficiency or control efficiency.

³⁸ See AP-42, Introduction, p. 1, available at <http://www.epa.gov/ttn/chief/ap42/c00s00.pdf>.

emission rates greater than the emission factor and the other half will have emission rates less than the factor. (emphasis added)

Twenty-four out of 52 of the current emission factors are based on AP-42.³⁹ Thus, the Revised Permit would use emission factors to determine compliance with almost half of the "emission factor limits," even though USEPA expressly recommends in AP-42 that its emission factors not be used in this way.

As already discussed, notwithstanding the claim made by this comment, the manner in which US Steel must use emission factors to determine compliance with the subject emission limits is fully consistent with the guidance provided by USEPA in AP-42.⁴⁰ For the eight emission units that are at issue for which stack testing is not feasible or practicable, the permit would properly rely on appropriate emission factors from AP-42 and other sources as the tool to quantify the emissions of those units. US Steel would have to periodically review the appropriateness of the emission factors that it is using for these units. In addition, for the ten emission units for which stack testing is feasible, including units for which emission factors were originally developed from AP-42, the appropriateness of the emission factors that US Steel is using would be subject to confirmation with stack testing on those units.

28. Only ten of the 24 current emission factors based on AP-42 have been confirmed by stack tests. This tells us nothing about the other 14 emission factors based on AP-42, or about emissions during routine operation of the tested emission units. Further, this is not comforting even for these ten confirmed emission factors as a single stack test is not adequate to demonstrate continuous compliance, especially as the BOF furnaces use scrap metal as a feedstock, which is highly variable in composition, and at a facility which makes a range of products over time. This is a key issue for lead, for example, which enters USS-GCW in the scrap metal. As discussed in a previous comment, a stack test is not necessarily indicative of emissions on non-test days, i.e., during normal rather than the conditions during testing. Stack tests are set up for optimum operation and yield no information about routine, day-in and day-out compliance or periods of startup, malfunction and breakdown.

³⁹ See the table accompanying this comment, in which emission factors from AP-42 are colored in light blue.

⁴⁰ As observed by USEPA, in the Introduction to AP-42, "Emission factors and emission inventories have long been fundamental tools for air quality management. Emission estimates are important for developing emission control strategies, determining applicability of permitting and control programs, ascertaining the effects of sources and appropriate mitigation strategies, and a number of other related applications by an array of users, including federal, state, and local agencies, consultants, and industry. Data from source-specific emission tests or continuous emission monitors are usually preferred for estimating a source's emissions because those data provide the best representation of the tested source's emissions. However, test data from individual sources are not always available and, even then, they may not reflect the variability of actual emissions over time. Thus, emission factors are frequently the best or only method available for estimating emissions, in spite of their limitations." Introduction to AP-42, page 1.

This comment does not show that stack tests are improperly relied upon as the means to authoritatively measure the emission rate of a subject emission unit. This function or role of stack testing in this regard is well established. In addition, as already discussed in response to a previous comment, stack testing may not be sufficient, by itself, to confirm ongoing compliance.⁴¹ Consideration must also be given to the operational conditions during stack testing and requirements for ongoing operational monitoring and recordkeeping for an emission unit and its emissions controls. In this regard, the use of control equipment and the margin of compliance measured during stack testing are relevant considerations for the nature of the ongoing monitoring that is appropriate for an emission unit. Based on the nature of an emission unit and its control equipment, consideration must also be given to separately accounting for periods of time, including periods of startup, malfunction and breakdown, when the emission rates measured during stack tests or established emission factors would understate actual emissions. The Illinois EPA considered these factors during the enhancement of Periodic Monitoring for the subject emission units as part of the issuance of the 2011 Permit.

29. Thirteen of the current emission factors are based on single stack tests conducted sometime between 1981 and 1993, i.e., 20 to more than 30 years ago. The Illinois EPA makes no attempt in the repository to demonstrate that a single, decades-old stack test is representative of current operations.

This comment correctly observes that the Illinois EPA has not made any attempt to demonstrate that the emission rates measured in old stack tests are representative of current operation. This is because these emission rates have been or will be verified by contemporary stack testing. As observed by the next comment, this testing may show that the results of these past tests now understate the actual emissions of pollutant(s) by a subject emission unit. This would necessitate appropriate action on the part of the Illinois EPA and US Steel to assure that the unit's actual emissions of those pollutant(s) are properly addressed.

30. The concern that dated stack tests are not representative of current emissions is heightened by a recent stack test in April 2012. That test failed to confirm an emission factor that was developed from one of the stack tests that is now over 20 year-old. The emissions measured under the most favorable conditions to USS-GCW (i.e., in a scheduled stack test) were higher than the current emission factor, showing that the established "emission factor limit" and the maximum emissions limit, in tons/year, are exceeded. US Steel's current NOx emission factor for the BOF ESP exhaust is 0.0389 pounds/ton steel, based on an August 1993 stack test, which is also the NOx "emission factor limit" for this unit. In April 2012, a stack test for the BOF ESP measured NOx emissions of 0.1273 pounds per ton of steel. Thus, depending on the level of annual production, NOx emissions could have exceeded the maximum emissions limit, 66.63 tons per year, by a factor of three.

In fact, this comment does not show that there is a deficiency in the Periodic Monitoring for the subject emission limits. Rather, it shows

⁴¹ Indeed, elsewhere this commenter argues that more frequent stack testing should be required.

that that the CAAPP Permit for USS-GCW, as previously issued in 2011, included appropriate Monitoring for the subject limits. This is because Periodic Monitoring required by that permit has served to identify noncompliance with some of the subject emission limits.

With respect to the particular circumstances addressed by this comment, as a consequence of recent stack testing of the BOF ESP, parallel to the processing of the Revised Permit, enforcement staff at the Illinois EPA have been independently pursuing claims that NOx emissions from the ESP at the BOF are in excess of the applicable emission limits.⁴² While the NOx emission rates measured in the stack test in April 2012, as well as a more recent stack test in July 2012, exceed the NOx emission factor as previously provided to the Illinois EPA by US Steel, US Steel has not yet formally notified the Illinois EPA of a new, updated emission factor that it will be using for the NOx emissions of the BOF ESP. This action will now need to be coordinated with the ongoing enforcement action.

31. Other emission factors for the BOF ESP are based on the single August 1993 stack test, including factors for PM, PM₁₀, and CO. Are the current emission factors for these pollutants representative of current operations?

As will be discussed later in more detail, based on the results of recent stack tests, the current emission factors for PM/PM₁₀ and CO for the BOF ESP do not understate actual emissions. Thus, they may be considered representative of current operation for purposes of demonstrating compliance with the subject emission limits.

32. The Statement of Basis, Footnote 31, indicates that US Steel has submitted a proposed compliance schedule for NOx and VOM emissions from the BOF ESP and the Illinois EPA is processing this submittal as an application for a significant modification of the CAAPP permit, separate from this Draft Revised Permit. However, the Statement of Basis is silent on whether this modification would also address PM, PM₁₀, and CO from the BOF ESP as well as emissions from related emission points, such as the BOF roof monitor.

As part of issuance of this Revised Permit, it is not appropriate for the Illinois EPA to publically speculate on the eventual scope of the significant modification to the Revised Permit that is anticipated at some time in the future to address US Steel's submittal of a Compliance Schedule. As observed by this comment, that modification will be a separate permit action. The full scope of the modification that is being proposed will be formally announced when the Illinois EPA releases a draft Significant Modification of the CAAPP Permit for USS-GCW for public review and comment.

33. The current VOM emission factor for the BOF ESP exhaust being used by US Steel, which is based on the AIRS Inventory, is 0.006 pounds/ton steel. This factor was not confirmed by stack testing in July 2012,

⁴² On November 30, 2012, the Illinois EPA initiated the enforcement process by issuing a Violation Notice alleging violations at the BOF by US Steel. Information gathering and exchanges of information have begun in the enforcement process but are only yet in the initial stages of confirming the existence of a violation and what changes, if any, will be required to the NOx emission factor for the ESP at the BOF.

which measured 0.0153 pounds/ton steel. Thus, VOM emissions would exceed the applicable maximum emission limit, 10.74 tons/year, by about a factor of three.

The Illinois EPA agrees with this comment. As already discussed, a problem with US Steel's VOM emission factor for the BOF ESP exhaust, and compliance with the applicable limits for VOM, was revealed by stack testing required by the 2011 Permit (Condition 7.5.7(b)). In this regard, the Illinois EPA is engaged in the initial stages of enforcement, with a violation notice issued to US Steel in late 2012 for exceedance of the applicable VOM limits.

34. Besides the VOM emission factor for the BOF ESP, thirteen other current emission factors, are based on the AIRS Emission Inventory and other similar inventories.⁴³ These inventories have no nexus whatsoever with USS-GCW. The repository contains no support linking these factors to USS-GCW. Other emission factors are based on the AIRS Emission Inventory. Are they similarly flawed? The Illinois EPA has not provided evidence that any of the emission factors based on generic emission inventories are applicable to USS-GCW.

There is an adequate nexus between USS-GCW and the emission factors that originated in emission inventories for the emission factors for which such a nexus is needed. In this regard, a link to these historical inventories is not needed for emission units for which stack testing has been or will be conducted pursuant to the 2011 Permit. For these emission units, the appropriateness of the emission factors that US Steel is currently using has been and will be authoritatively confirmed by stack testing.⁴⁴ For other emission units, for which stack testing is not feasible, a nexus exists as USS-GCW is a steel mill and emission factors for steel mills were the basis of the emission factors. As observed by USEPA, "...emission factors are frequently the best or only method available for estimating emissions, in spite of their limitations." AP-42, Introduction, page 1. Accordingly, as emission factors continue to be the only basis to determine emissions of these emission units, a sufficient nexus exists, recognizing that information may become available in the future, which would provide "a reality check," and potentially necessitate updates to these factors.⁴⁵

⁴³ See the table accompanying this comment. In this table, emission factors for PM and PM₁₀ are counted separately even when they are based on one factor in an inventory.

⁴⁴ Other than for VOM emissions of the BOF ESP, for emission factors that originated in inventories, for those emission units for which stack testing has been conducted, the appropriateness of the current emission factors being used by US Steel has been confirmed by such testing, which shows a substantial margin of compliance:

BOF ESP (Lead) - Testing in July 2012, measured emission rate approximately 20 percent of the current factor, i.e., 0.0376 compared to 0.0.1934 pounds/ton steel.

Desulfurization/Hot Metal Transfer Baghouse (Lead) - Testing in May 2012, measured emission rate approximately 15 percent of the current factor, i.e., 0.00167 compared to 0.0133 pounds/hour.

Desulfurization/Hot Metal Transfer Baghouse (VOM) - Testing in May 2012, measured emission rate approximately 20 percent of the current factor, i.e., 0.000187 compared to 0.001 pounds/ton iron.

⁴⁵ While the Illinois EPA can speculate on the underlying basis for some of these emission factors, as follows, the Illinois EPA is not prepared to take responsibility for supporting or reevaluating the emission factors that USEPA has developed:

Blast Furnace Charging (PM/PM₁₀) - The factor from the AIRS Inventory was likely derived from USEPA studies of fugitive emissions from handling of bulk materials,

35. Supporting documentation is missing for the PM/PM₁₀ emission factors for the BOF additive system, the flux conveyor operations, iron pellet screening, ladle metallurgy material handling and slag pits. The material in the repository indicates that these emission factors were calculated using the following equation for particulate emissions from batch and continuous drop of bulk materials from AP-42, page 13.2.4-4:

$$EF = k (0.0032) (U/5)^{1.3} \div (M/2)^{1.4}$$

where k is the particle size multiplier, U is the mean wind speed, and M is the material moisture content. For three of these emission units, the BOF additive system, flux conveyor operations and iron pellet screening, some supporting documentation is provided for the values for the particle size multiplier, mean wind speed, and material moisture content. No documentation is provided for the ladle metallurgy material handling and the slag pits. There is also no information in the repository justifying the values of these parameters that were used to calculate the PM/PM₁₀ emission factors. AP-42 provides ranges of values for these parameters, but it is not known whether the values used in the calculations were selected from the ranges in AP-42, were determined from on-site measurements, or were derived from another source. This information is needed to verify that the values used are representative of USS-GCW and these factors were calculated correctly.

The information that is requested by this comment is not needed for the BOF Additive System, Flux Conveyor Operations and Ladle Metallurgy Material Handling. For these units, the 2011 Permit requires stack testing, which will serve to verify whether the baghouses on these units comply with the subject emission rates. In this regard, the 2011 Permit requires stack testing for PM/PM₁₀ for one of these emission units by November 13, 2013. See, Condition 7.1.7(b). The level of uncontrolled emissions, as affected by factors such as the moisture of material, will be a consideration when the Illinois EPA decides which of these units will be tested to verify the adequacy and representativeness of the factors for these units.

considering the iron ore, coke and limestone that are handled in the charging systems at the top of the blast furnaces.

BOF Roof Monitor (Lead) - This factor was likely developed from the factors for the uncontrolled or controlled emissions from the different phases of operation of the BOF furnaces, i.e., charging, refining and tapping, using engineering assumptions for the capture efficiencies.

Caster Molds (NOx) - This factor from the AIRS Inventory likely represents the NOx emissions, expressed in pounds per ton of steel, from firing of natural gas to preheat components of the continuous caster prior to the introduction of molten steel.

Caster Molds (PM/PM₁₀) - This factor from the EIS Inventory was likely derived from the factor for teeming (i.e., the process of pouring steel into individual molds to make ingots). The continuous casting process, with its shrouding, is much more contained than teeming, which is an older process that was replaced by continuous casting. In this regard, the PM factor for continuous casting is an order of magnitude lower than the factor for teeming, 0.006 pounds/ton compared to 0.07 pounds/ton.

Slab Cutoff and Slab Ripping (PM/PM₁₀) - This factor from the EIS Inventory likely represents the emissions from the firing of natural gas, expressed in pounds per ton of steel processed, that accompanies the slab cutoff and ripping processes.

For iron pellet screening and slag digging, which cannot be tested, upon further consideration in response to this comment, the Illinois EPA will be requiring US Steel to conduct further review to determine whether these factors should be updated. Upon closer examination of the data that US Steel provided for the origin of the factor for slag digging, the particle size multiplier used in the development of this factor, 0.35, is now recognized as being of concern. This is because the particle size multiplier for PM₁₀ was used, instead of the multiplier for PM.⁴⁶ (As such, US Steel's current emission factor may appropriately address emissions of PM₁₀ but not PM.) The value for material moisture content of slag, 0.92 percent, is consistent with what would be expected for slag.⁴⁷ The value for mean annual wind speed, 9.4 mph, is consistent with general data for the St. Louis area. Accordingly, the values for material moisture content and mean wind speed used by US Steel are likely representative of the slag digging operation at USS-GCW. For iron pellet screening, US Steel could not find the documentation for the original development of the emission factor. In addition, a concern now exists about the particle size multiplier used in developing the emission factor for pellet screening because of the multiplier used for slag digging.

36. Relevant production data is missing for the PM/PM₁₀ emission factor for the BOF ESP exhaust. The stated basis for this factor is the average of the results of testing in March 1989, July 1990, and August 1993. These results are provided in the repository but lack the associated production data necessary to convert the measured emission rates in pounds/hour to pounds/ton steel. This information is needed so these emission factors can be checked to verify that they were calculated correctly and do not understate actual emissions.

Production data, as requested by this comment, is not needed to verify the adequacy of these emission factors as they have been directly verified by the recent emission testing for the BOF ESP. The emission rates measured by stack testing in October 2009 and July 2012 were approximately 25 percent of the current factor, i.e., 0.0364 and 0.035 pounds/ton steel, respectively, as reported in the Statement of Basis, compared to a factor of 0.16 pounds/ton.

As noted by this comment, production data was not necessarily included in the reports for historical stack tests. In such cases, if such data is not otherwise available to calculate an emission factor from the test results, an engineering assumption for the production rate during the test must be made using general knowledge about the tested emission unit. Based on knowledge about how a unit is typically operated, one might use a value that represents the maximum capacity of the unit, e.g., 90 or 95 percent of the rated capacity of the unit. If a unit operates at a steady rate, it might be more appropriate to use a value for the production rate that is calculated from annual production.

In any case, production data is now required to be included in the reports for stack tests. Pursuant to Condition 8.3.6(g) of the 2009

⁴⁶ The particle size multiplier is a fixed value from AP-42, which is used to convert emission rates in terms of total suspended particulate to emission rates in terms of PM and PM₁₀.

⁴⁷ The value is within the ranges for moisture content of slag provided in Table 11.2.3-1 in AP-42, Fourth Edition.

Permit, the test reports that are submitted to the Illinois EPA must now include the operating conditions at the time of testing.

37. Production data is also missing for the NOX and CO emission factors for the BOF ESP exhaust. The stated basis for these emission factors is an August 1993 emissions test. Without information for steel production data during the test, the NOX and CO emission factors for the BOF ESP exhaust cannot be checked to verify that they were calculated correctly and do not understate actual emissions.

Again, the adequacy of these emission factors is directly "verified" by the recent emission testing for the BOF ESP. The CO emission rate measured by stack testing in July 2012 was approximately 40 percent of the current factor, i.e., 3.761 pounds/ton of steel compared to a factor of 8.993 pounds/ton. The NOx emission rate measured by stack testing in April 2012 exceeded the current emission factor by a factor of about three, i.e., 0.1273 pounds/ton of steel compared to a current emission factor of 0.0389 pounds/ton.⁴⁸ As already discussed, for NOx, the Illinois EPA has begun enforcement because the NOx emission rate from the BOF ESP measured during recent stack testing is higher than the applicable emission factor limit.

38. Some supporting documentation is missing for the PM/PM₁₀ emission factor for the spray chambers on the continuous casters. The stated basis for this factor is a 1981 emissions test. The 1981 test was conducted when a baghouse was used to control spray chamber emissions, so the results were adjusted to remove baghouse reductions given that the baghouse was subsequently removed from the source around 1990. Neither the 1981 spray chambers baghouse exhaust stack test results, nor the associated steel production data necessary to convert the PM/PM₁₀ emission rate measured during the test from pounds/hour to pounds/ton of steel produced, nor the basis for assuming the former baghouse removed 99.3 percent of the PM and PM₁₀ are provided in the material at the repository. Without this information, the PM/PM₁₀ emission factor for the spray chambers cannot be checked to verify that it was calculated correctly and does not understate actual emissions.

The information requested by this comment is not needed to verify the adequacy of this emission factor. The adequacy of this emission factor will be verified by stack testing that is required by the 2011 Permit. Condition 7.6.7(b) requires that testing for PM/PM₁₀ be conducted for one of the spray chambers by November 2013.⁴⁹

39. The PM/PM₁₀ emission factor for the slag pits is not supported by the material provided at the repository and may understate actual emissions. This material indicates that this emission factor was calculated from USEPA's *Assessment of Atmospheric Emissions from Quenching of Blast Furnace Slag with Blast Furnace Blowdown Water* (EPA-600/2-84-072) and AP-42. The emission factor, 0.00417 pounds of PM/PM₁₀ per ton of iron, is the sum of factors for slag quenching (0.0026 pounds/ton) and slag digging (0.00157 pounds/ton). However, the PM emission factor for slag quenching in EPA-600/2-84-072 range from 0.00419 pounds/ton iron (low

⁴⁸ Exceedances of the established limits for NOx were confirmed by a subsequent stack test in July 2012, which measured NOx emissions of 0.1535 pounds per ton of steel.

⁴⁹ The fact that stack testing is required for the spray chambers by the 2011 Permit is not indicated in the Statement of Basis. The Illinois EPA regrets this error.

temperature quenching using mill service water) to 0.041 pounds/ton iron (high temperature quenching using blast furnace blowdown water). The repository does not indicate whether USS-GCW conducts low or high temperature slag quenching and whether service water or blast furnace blowdown water, or both are used. Moreover, even under the most favorable configuration (i.e., low temperature quenching using mill service water), the PM/PM₁₀ emission factor for slag quenching, alone, is more than the emission factor limit for the slag pits.

The contribution to this emission factor from slag digging was calculated using the equation for particulate emissions from batch and continuous drop operations in AP-42, page 13.2.4-4. However, the material in the repository does not provide information regarding the particle size multiplier, mean wind speed, and material moisture content values used in the calculation or justification for the values used. Thus, it was not possible to verify that the contribution to the emission factor from slag digging was calculated correctly. If it was, then the PM/PM₁₀ emission factor for the slag pits should range from 0.00576 pound/ton (0.00419 + 0.00157) to 0.04257 pound/ton (0.041 + 0.00157). Hence the PM/PM₁₀ emission factor for the slag pits may understate emissions by as much as an order of magnitude.

This comment does not show that there is a flaw in the quenching component of the PM/PM₁₀ emission factor for the slag pits. US Steel quenches low temperature or "hard" slag, i.e., slag that has solidified prior to quenching, using mill service water. This configuration for slag quenching is appropriately represented by the lower PM/PM₁₀ emission factor from EPA-600/2-84-072A. US Steel then adjusted this emission factor downward to account for USS-GCW's actual rate of slag generation and the accompanying decrease in the amount of water used for quenching.⁵⁰ This adjustment yields an emission rate for quenching of 0.0026 pounds PM/PM₁₀ per ton of iron.⁵¹ The concern about the calculation for the component of the PM/PM₁₀ emission factor for the slag pits for slag digging, 0.00157 pounds per ton of iron, has already been discussed in response to an earlier comment.

40. The SO₂ emission factor for the slag pits, 0.01 pounds/ton iron, is not supported by the material provided at the repository and may understate actual emissions. This material at the repository indicates that this emission factor was also calculated from EPA-600/2-84-072. The SO₂ emission factors for slag quenching cited in this document vary, from 0.017 to 0.043 pound/ton iron, depending on the configuration. As noted above, the material provided at the repository does not indicate the configuration for slag quenching at USS-GCW. Even under the most favorable configuration (high temperature quenching using blast furnace blowdown water), the SO₂ emission factor for the slag pits understates emissions by roughly a factor of two.

This comment does not show that there is a flaw in the SO₂ emission factor for the slag pits. US Steel used the average emission rate reported in EPA-600/2-84-072 for the configuration of slag quenching at USS-GCW, i.e., low temperature quenching using mill service water. US

⁵⁰ The annual average slag generation rate used for USS-GCW was 415 pounds per ton of iron. As indicated on page 4-7, a slag generation rate of 670 pounds per ton of iron was used in EPA-600/2-84-072 in the development of its emission factors for PM/PM₁₀.

⁵¹ 0.00419 lbs/ton x 415 pounds/670 pounds = 0.00259 lbs/ton, ≈ 0.0026 lbs/ton.

Steel then adjusted this emission rate downward to account for USS-GCW's actual rate of slag generation.⁵²

41. The NOx emission factor for the BOF ESP exhaust is not supported by the supporting documentation provided in the repository and may understate actual emissions. This emission factor, 0.0389 pounds NOx per ton of steel, is the emission rate from the August 1993 emissions test. However, the NOx emission rates from two recent stack tests, for which the test reports are in the repository, exceed this rate.⁵³ Hence, the current NOx emission factor understates actual emissions and would need to be updated based on the results of recent emissions tests in accordance with new Condition 5.13(c) (i).

The Illinois EPA agrees with this comment. As already discussed, parallel to the processing of this Revised Permit, based on the results of recent stack tests, enforcement staff at the Illinois EPA have been independently pursuing claims that NOx emissions from the BOF ESP are in excess of the applicable emission limits i.e., 0.0389 pounds/ton steel and 69.3 tons/year. While the NOx emission rates measured in these recent stack tests, in April 2012 and July 2012, exceed the NOx emission factor previously provided by US Steel to the Illinois EPA, US Steel has not yet formally notified the Illinois EPA of a new, updated NOx emission factor that it will be using for the BOF ESP. New Conditions 5.13(c) (i) and (d) (i) in the Revised Permit now address the actual review and update of emission factors by US Steel. It specifically requires US Steel to review the emission factors that it uses to determine compliance with the subject emission limits in conjunction with stack testing and to report any updates to those emission limits to the Illinois EPA. These activities will now need to be coordinated with the ongoing enforcement action.

Incidentally, in response to this comment, the present status of the NOx emission factor for the BOF ESP has been appropriately reflected in the Revised Permit. See, the note that has been added to Attachment 3.

42. The VOM emission factor for the BOF ESP exhaust is not supported by the documentation provided at the repository and may understate actual emissions. This emission factor, 0.006 pound VOM/ton steel, is the sum of the factors listed in AIRS Emissions Inventory for Source Classification Code (SCC) 3-03-009-013 (BOF: Open Hood-Stack), 3-03-009-016 (Charging: BOF), 3-03-009-017 (Tapping: BOF), and 3-03-009-023 (Steel Furnace Slag Tapping and Dumping). However, the repository contains undated excerpts from two versions of the AIRS Emissions Inventory. The sum of the above emission factors in one excerpt is 0.006 pound/ton; in the other it is 0.009 pound/ton. Furthermore, the

⁵² As reported In Table 3-4 of EPA-600/2-84-072, the average SO₂ content of recovered quench water for low temperature quenching using mill service water was 134.7 mg/l (average of 144.0 and 125.4 mg/l).

Similar to the approach in EPA-600/2-84-for the PM/PM₁₀ factor, US Steel developed an SO₂ emission factor per ton of iron produced from the measured SO₂ content of the quench water and information for the usage of water for quenching the slag that accompanies the production on one ton of steel, with an adjustment for the actual slag generation rate at USS-GCW.

$134.7 \text{ mg/l} \times 14.5 \text{ gal/ton iron} \times 3.785 \text{ l/gal} \div 453,600 \text{ mg/lb} = 0.0163 \text{ lbs/ton iron}$
 $0.0167 \text{ pounds/ton iron} \times 415/670 = 0.010 \text{ lbs/ton iron}$

⁵³ The NOx emission rate measured in the April 2012 test was 0.1273 pounds/ton of steel. In the July 2012 test, the measured rate was 0.1535 pounds/ton of steel.

VOM emission rates from the BOF ESP measured in two recent stack tests exceed the VOM emission factor.⁵⁴ Hence, the current VOM emission factor understates actual emissions and should be updated based on the results of recent emissions tests in accordance with Condition 5.13(c) (i).

The Illinois EPA also agrees with the conclusion of this comment. Regardless of the original basis for this factor, recent stack testing for the BOF ESP shows that the emission rate exceeds the applicable limit. As a consequence, an enforcement action has also been initiated for this exceedance. The present status of the VOM emission factor for the BOF ESP has also been appropriately reflected in the Revised Permit. See, the note that has been added to Attachment 3.

43. The lead emission factors for the BOF ESP exhaust, the BOF roof monitor and the BOF desulfurization/hot metal transfer baghouse exhaust are not supported by the documentation provided in the repository and may understate actual emissions. The material at the repository indicates that these factors were developed from the factor in the "AIRS Emissions Inventory" for a BOF with an Open Hood-Stack, SCC 3-03-009-013), adjusted for various undocumented capture and control efficiencies. However, the repository contains undated excerpts from two versions of the AIRS Emissions Inventory. One version has a lead emission factor for SCC 3-03-009-013, 0.2 pounds/ton; the other does not contain a lead emission factor for SCC 3-03-009-013. It is not known which version is newer and therefore correct. If the former version is correct, then the lead emission factors in question are correct provided that the control efficiencies used in the calculations are applicable to the USS-GCW. If the latter version is correct, then the AIRS Emissions Inventory no longer provides an emission factor for lead and the lead emission factors for the BOF ESP exhaust, the BOF roof monitor, and the BOF desulfurization/hot metal transfer baghouse exhaust are not supported.

The emission factors for these units were developed from the version of the AIRS Inventory that contains a lead emission factor for BOF Furnaces, SCC 3-03-009-013, which is the older version, from March 1990. These factors were not based on the newer version of this inventory, from July 2001, which does not contain a lead factor for SCC 3-03-009-013. However, the fact that the newer version does not contain an emission factor for lead under SCC 3-03-009-013 does not show that the emission factors for these units are inadequate. Rather, it merely shows that USEPA elected to not carry over the lead factor from the earlier inventory. As USEPA did not replace the earlier factor with a new factor, the earlier factor still remains applicable.⁵⁵ Certainly, it would not be appropriate to now suggest that there are no lead emissions from the BOF Shop, as the presence of lead emissions has been confirmed by the stack testing that has been conducted.

⁵⁴ The VOM emission rate measured in the April 2012 emissions test was 0.023 pounds/ton steel. In the July 2012 test, the measured rate was 0.0153 pounds/ton steel.

⁵⁵ As explained in the introduction to the 2001 AIRS Emissions Inventory, this version of the AIRS Inventory was part of the USEPA's Emissions Inventory Improvement Project (EIIP). This project was an effort to combine all emission factors from various inventories into one source for easy reference. Emission factors from the FIRE database and the AIRS database were compiled into this EIIP database. Accordingly, it cannot be assumed that the absence of an emission factor for lead for BOF furnaces reflects a technical decision.

As already discussed, the emission factors for the BOF ESP exhaust and the BOF desulfurization/hot metal transfer baghouse exhaust have been confirmed by recent stack testing. Thus, it is not necessary to further examine the original basis of the factors for these units.

44. The SO₂, NO_x and VOM emission factors for uncaptured blast furnace emissions (0.0104, 0.0007 and 0.0047 pounds/ton, respectively) were incorrectly calculated and significantly understate actual emissions. These emission factors were developed from a July 1993 stack test assuming that the capture efficiency for the casthouse baghouse is 95 percent, with uncaptured emissions comprising the remaining 5 percent.⁵⁶ The repository does not provide a justification for the assumed capture efficiency of 95 percent. More importantly, the derivation of the uncaptured emission factors from the emission factors for the casthouse baghouse exhaust was not correct. The casthouse baghouse emissions represent 95 percent of the "uncontrolled emissions" (assuming the capture efficiency is correct) reduced by the control efficiency of the baghouse. Hence, before the uncaptured emissions of the blast furnace casthouse can be correctly calculated, both the capture and control efficiencies of the baghouse need to be accounted for when back-calculating the uncontrolled blast furnace emissions from the measured emissions of the casthouse baghouse. The correct formula to calculate uncontrolled emission factors for the blast furnace is as follows, with the capture and control efficiencies both expressed as percentages:

$$\text{Uncontrolled EF} = \text{Baghouse EF} \div (\text{Capture}/100) \div (100 - \text{Control})/100$$

Using a capture efficiency of 95 percent and a control efficiency of 95 percent, as used in the determination of the PM/PM₁₀ emission factor for the casthouse baghouse, this formula yields emission factors for uncaptured emissions of SO₂, NO_x and VOM from the blast furnace that are significantly higher than those currently being used by US Steel.⁵⁷

This comment does not show that these emission factors were improperly developed. These emission factors involve gaseous pollutants which are not controlled by the casthouse baghouse.⁵⁸ Accordingly, the uncontrolled emission factors for these gaseous pollutants, from which the factors

⁵⁶ That is, uncaptured emissions = "uncontrolled emissions" × 0.05, where the uncontrolled emissions are the emissions that would theoretically occur if there were no air pollution control equipment at the casthouse.

⁵⁷ Using baghouse capture efficiency of 95 percent and the control efficiency of 95 percent, total blast furnace emissions are calculated as:

$$\text{SO}_2: 0.2006 \text{ lb/ton iron} \div (95/100) \div ((100 - 95)/100) = 4.2232 \text{ lb/ton iron}$$

$$\text{NO}_x: 0.0144 \text{ lb/ton iron} \div (95/100) \div ((100-95)/100) = 0.3032 \text{ lb/ton iron}$$

$$\text{VOM: } 0.0946 \text{ lb/ton iron} \div (95/100) \div ((100-95)/100) = 1.9916 \text{ lb/ton iron}$$

SO₂, NO_x and VOM emission factors for uncaptured blast furnace emissions are then calculated as:

$$\text{SO}_2: 4.2232 \text{ lb/ton of iron} \times 0.05 = 0.2112 \text{ lb/ton iron}$$

$$\text{NO}_x: 0.3032 \text{ lb/ton of iron} \times 0.05 = 0.0152 \text{ lb/ton iron}$$

$$\text{VOM: } 1.9916 \text{ lb/ton of iron} \times 0.05 = 0.0996 \text{ lb/ton iron}$$

⁵⁸ **This fact is addressed in the discussion of these emission factors in the Statement of Basis for the Draft Revised Permit. For these gaseous pollutants, the "Origin of the Factor" only provides a value for the capture efficiency of the baghouse control system. This is different than the discussion for PM/PM₁₀, which includes both a capture efficiency and a control efficiency. See, Statement of Basis, pages 41 and 42.**

for uncaptured emissions were then calculated, were properly derived using the following equation:

$$\text{Uncontrolled EF} = \text{Baghouse EF} \div (\text{Capture}/100) .^{59}$$

45. The PM/PM₁₀ emission factor for the argon stir/LMF/material handling baghouse exhaust was calculated in error and understates actual emissions. The stated basis for this factor (0.00715 pounds/ton steel) is the uncontrolled emission factor for an electric arc furnace melting and refining, from Table 7.5-2 in AP-42, adjusted for an undocumented control efficiency of 99.9 percent. The uncontrolled emission factors in this table are 38.0 and 22.04 pounds/ton, respectively, for PM and PM₁₀. Based on a control efficiency of 99.9 percent, the calculated PM and PM₁₀ emissions factors are 0.038 and 0.02204 pounds/ton steel, respectively, which are both higher than the applicable limit.⁶⁰

This comment ignores the results of recent stack testing for this emission unit. This testing, in October 2009 and May 2012, shows a very large margin of compliance, with emission rates that are less than 10 percent of the applicable limit, i.e., 0.000388 and 0.000436 pounds/ton of steel compared to a rate of 0.00715 pounds/ton of steel. This testing makes the original basis of this factor irrelevant.⁶¹

While a different, lower emission factor for PM₁₀ could have been established based on the uncontrolled emission factor for PM₁₀ in AP-42, this was not the approach that was taken when Construction Permit 95010001 was originally issued setting the emission limits for this unit. The approach that was taken, with a single limit addressing both PM and PM₁₀ is more conservative. It also simplifies stack testing because separate testing for emissions of PM₁₀ need not be conducted for this unit, which could technically be challenging given the very low levels of emissions that occur from this unit.

46. The PM/PM₁₀ emission factors for caster molds, slab cutoff and slab ripping (0.006, 0.0071 and 0.00722 pounds/ton, respectively) were calculated by dividing emissions in pounds/hour by production in

⁵⁹ Incidentally, for the subject gaseous pollutants, the equation used by the commenter mathematically reduces to the correct equation when the efficiency of the control device is set at zero.

$$\begin{aligned} \text{Uncontrolled EF} &= \text{Baghouse EF} \div (\text{Capture}/100) \div (100 - \text{Control})/100 \\ &= \text{Baghouse EF} \div (\text{Capture}/100) \div (100 - 0)/100, \text{ or} \\ &= \text{Baghouse EF} \div (\text{Capture}/100) \div 100/100, \text{ or} \\ &= \text{Baghouse EF} \div (\text{Capture}/100) \div 1.0, \text{ or} \\ &= \text{Baghouse EF} \div (\text{Capture}/100) \end{aligned}$$

⁶⁰ 0.038 pounds/ton steel = 38 pounds/ton × (100 - 99.9)/100

0.02204 pounds/ton steel = 22.04 pounds/ton × (100 - 99.9)/100

⁶¹ US Steel actually indicated that a control efficiency higher than 99.9 percent was used to calculate the emission factor for the baghouse for the argon stir/LMF/material handling operation. However, in the explanation for the Origin of the Factor in the Attachment to the Statement of Basis for the Draft Revised Permit, the Illinois EPA lowered this control efficiency to 99.9 percent. This was because 99.9 percent is considered to be a more reasonable value for the control efficiency of a baghouse when applied to this type of operation.

What is apparent, based on the results of stack testing, is that the original emission limits for this emission unit were conservatively set as they were based on general emission factors for an electric arc furnace, without consideration necessarily having been given for the lower levels of emissions from an LMF (ladle metallurgy furnace), in which refining of material is not conducted.

tons/hour. Emissions and production data from Illinois EPA's 1991 EIS PM/PM10 Report, which provides both an average production rate and a maximum production rate, were used in the calculations. The emission factors were calculated using the maximum production rate (352 tons/hour). This "dilutes" emissions, so that the calculated emission factors understate actual emissions when production is below the maximum rate, which is most of the time. In order to not understate actual emissions, at a minimum, these emission factors should be calculated using the average production rate (198.8092 tons/hour), which is more representative of routine operation. Using the average production rate, these PM/PM₁₀ emission factors would be:

Caster Molds: 2.1 lb/hr/198.8092 tons/hr = 0.01506 lb/ton steel
 Slab Cutoff: 2.5 lb/hr/198.8092 tons/hr = 0.01257 lb/ton steel
 Slab Ripping: 2.54 lb/hr/198.8092 tons/hr = 0.01278 lb/ton steel

The subject emission factors were calculated in a reasonable manner. The purpose of the 1991 EIS Report was to develop information for maximum emission rates in conjunction with the development of Illinois' attainment demonstration for the National Ambient Air Quality Standard for PM₁₀. Accordingly, as data for maximum emission rates was generated, it was appropriate for the maximum production rate to be used when developing emission factors from this inventory. Maximum emission rates would occur at the maximum production rate. It would not have been appropriate to calculate these emission factors using an annual average production rate from the EIS Report, as was done in this comment.

47. In the 2012 Order, USEPA directed the Illinois EPA to eliminate certain conditions in the 2011 Permit related to violation of state emission standards during startup and periods of malfunction or breakdown (SMB) in the absence of all of the documentation required by the 35 IAC 201.261 and 201.262, which rules are part of Illinois State Implementation Plan (SIP). In this regard, the Draft Revised Permit would be identical to the 2011 Permit to which USEPA objected. Instead, Illinois EPA relied on information provided by US Steel attempting to justify the need for advance permission to operate in violation of state emission standards during SMB. However, the information on which Illinois EPA relies is too vague and general to satisfy the requirements of 35 IAC 201.261 and 201.262.

This comment mischaracterizes the 2012 Order.⁶² While the 2012 Order found that the Illinois EPA may not grant US Steel advance permission to operate during a startup or malfunction/breakdown event lacking an application from the source that contains the information required by the Illinois SIP, the Order did not direct the Illinois EPA to eliminate conditions in the 2011 Permit that granted such permission. Rather the 2012 Order found that the Illinois EPA did not follow

⁶² It is noteworthy that in the 2012 Order, USEPA found that, when issuing the 2011 Permit, the Illinois EPA appropriately explained that the sole determination being made during permitting, in advance of an actual malfunction/breakdown or startup event, is whether the source in its application requested permission to make claims related to continued operation during a malfunction/breakdown or startup event. USEPA also agreed that such authorization in a permit "does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such enforcement action." Finally, USEPA agreed that the relevant conditions of the 2011 Permit were consistently worded with the Illinois EPA's interpretation of Illinois' SIP. See, 2012 Order at page 24.

Illinois' SIP when it approved an application that failed to provide the specific information required by the SIP and directed the Illinois EPA to correct this error.

Consistent with the 2012 Order and as detailed further in the following responses, US Steel supplied all the information that 35 IAC 201.261 requires from a source that is requesting permission to continue to make claims related to operation of particular emission units during startup and malfunction/breakdown events in violation of certain state emission standards.

48. The 2012 Order found that US Steel's application for authorization for certain emission units to violate certain state emission standards during startup and periods of malfunction or breakdown (SMB) did not provide the information required by 35 IAC 201.261. USEPA further found that Illinois EPA therefore failed to comply with 35 IAC 201.262 in granting advance permission in the 2011 Permit for USS-GCW to operate in violation of certain state emission standards during SMB.

This is correct. This error has now been corrected as a part of the issuance of the Revised Permit. US Steel has provided additional information addressing the informational requirements of 35 IAC 201.261.

49. USEPA granted the Petition regarding the inadequacy of USS-GCW's application for advance permission and the inadequacy of the conditions in the 2011 Permit approving USS-GCW's application for advance permission. USEPA held that Illinois EPA may not grant advance permission to operate in excess of emission limits during SMB absent an application from USS-GCW that contains all of the information required by 35 IAC 201.261 and 201.262. USEPA Order at 24-25.

While it is unfortunate that the 2012 Order confuses the differences in the broader factual information to be submitted by an applicant under 35 IAC 201.261 and the narrower legal criteria expressed in the standards for a grant by the Illinois EPA under 35 IAC 201.262, US Steel has provided additional information addressing the informational requirements of 35 IAC 201.261. It should be noted that the slightest inadequacy in a request for startup, breakdown or malfunction authorization does not deprive the State permitting agency of its authority to approve the request and does not invalidate any such approval reflected in a Title V permit. The Illinois EPA does not lose its authority under the Act to approve a permit notwithstanding that an application is incomplete under the Pollution Control Board's rules. *Accord., White Fence Farm, Inc., v. Land and Lakes Company, 424 N.E.2d 1370 (4th Dist. Ct. Appeals, 1981).*

50. On January 31, 2013, Illinois EPA received from US Steel supplemental information to bolster its application to operate in excess of emission limits during SMB (SMB Supplement). When Illinois EPA released the Draft Revised Permit on February 4, 2013, it necessarily relied on USS-GCW's SMB Supplement in determining that US Steel had provided all of the information required by the above-cited rules. Statement of Basis at 27-38. While US Steel provided numerous pages of paper to Illinois EPA, it failed to provide the information required by 35 IAC 201.261 and 201.262. Accordingly, Illinois EPA again lacks the legal authority to grant advance permission in the Permit for USS-GCW to operate

certain emission units in violation of certain applicable state emission standards during SMB.

As previously discussed, this comment's statement that the Illinois EPA lacks legal authority to grant advance permission in US Steel's CAAPP permit to make certain claims related to operation of certain emission units in violation of state standards during a startup or malfunction/breakdown event is flawed. Any perceived deficiencies in a submittal by a source consistent with 35 IAC 201.261 does not deprive the Illinois EPA of jurisdiction to grant authorization so long as the submittal meets the standards of 35 IAC 201.262.

Regardless, as discussed in the Statement of Basis that accompanied the Draft Revised Permit⁶³, the Revised Permit continues to provide authorization to US Steel to make claims related to startup as US Steel affirmatively demonstrated for each emission unit that is the subject of such request that all reasonable efforts have been made and will be made to minimize startup emissions, duration of individual startups and frequency of startups. Moreover, for each emission unit at USS-GCW that is the subject of a malfunction/breakdown request⁶⁴, US Steel has appropriately justified that such authorization is necessary to prevent injury to personnel and/or to prevent severe damage to equipment.

51. 35 IAC 201.261 requires an applicant to describe, among other things, the quantities of emissions that will occur during SMB events and all measures that will be taken to minimize excess emissions during SMB. USEPA has made clear that this information needs to be specific to the event:

The specific proof required in each instance usually will depend on the nature and the cause of the malfunction or breakdown. Thus, a determination that the permittee has met the requirements of 35 IAC § 201.262 to authorize continued operations during malfunction or breakdowns is a *case-by-case determination*.

2011 Order at 39 (emphasis supplied).

Unfortunately, the information in USS-GCW's SMB Supplement is general in nature; it is nothing akin to a case-by-case determination. Illinois EPA concedes this: "This information was necessarily general in nature, addressing 'typical' and worst-case malfunction or breakdown events." Statement of Basis at 31. While Illinois EPA offers some reasons why information provided in advance of an SMB event, particularly one involving a malfunction or breakdown, is difficult to predict in advance, that difficulty does not mean that USS-GCW is entitled to advance permission to exceed emission standards during SMB. To the contrary, it means that, unless USS-GCW satisfies the express requirements of the rules, it is not entitled to such advance permission.

This comment misrepresents the statements in USEPA's 2011 Order as it implies that the requirement for a case-by-case determination extends

⁶³ See, Statement of Basis, pages 32-38.

⁶⁴ See, Statement of Basis, pages 31-32.

to the application requirements set forth in 35 IAC 201.261.^{65, 66} The cited provision in the 2011 Order simply states, in the context of malfunction/breakdown, that a case-by-case determination is required for such events pursuant to 35 IAC 201.262. Consistent with the Illinois SIP, the process in Illinois for addressing malfunction and breakdown, as well as startups, involves two steps. The first step, consists of seeking authorization by means of a permit application to prospectively make a claim related to malfunction/breakdown or startup.⁶⁷ The second step of Illinois' process for operation with excess emissions during malfunction/breakdown or startup, addresses the showing that must be made when such an event actually occurs to make a viable claim of malfunction/breakdown or startup.⁶⁸ Both steps involve specific determinations, with the second step providing the case-by-case determinations for particular events as addressed by USEPA in the 2011 Order.

In this instance, US Steel submitted the requisite proof that continued operation of the subject units would be necessary to prevent injury to persons or severe damage to equipment so as to entitle US Steel to make claims related to specific malfunction/breakdown events. As discussed in greater detail in the Statement of Basis and the supplemental information submitted by US Steel on January 31, 2013, many of the subject emission units involve materials that are potentially dangerous which must be handled properly to prevent injury to operational personnel. These materials would present an immediate danger to personnel if operation of the subject units were handled inconsistent with the way these units were designed to be operated during malfunction/breakdown events. In addition, US Steel explained that continued operation during malfunction and breakdown events would be needed to prevent severe damage to equipment that would result if molten metal were allowed to solidify in equipment.

Permission shall be granted to operate during a startup event upon proof that all reasonable efforts have been made to minimize startup

⁶⁵ USEPA's 2011 Order makes no reference to such a case-by-case determination in the context of application materials addressing the informational requirements of 35 IAC 201.261. In fact, USEPA's 2011 Order makes no reference to 35 IAC 201.261 in its discussion of the provisions of the 2009 Permit related to exceedances of certain state emission standards during malfunction/breakdown and startup events.

⁶⁶ This comment also misleadingly suggests that a statement made by the Illinois EPA in the Statement of Basis for the Draft Revised Permit with respect to malfunction and breakdown is applicable in the context of both malfunction and breakdown events and startup events.

⁶⁷ This first step enables conditions to be placed in permits that require source- or unit-specific recordkeeping and reporting relating to malfunction/breakdown and startup events and other requirements related to such events.

⁶⁸ For malfunction/breakdown, this showing consists of a demonstration that operation was necessary to prevent injury to persons or severe damage to equipment, or was required to provide essential services. There are two elements to the required showing, "need" and "function". For startup, it shall consist of a demonstration that all reasonable efforts have been made to minimize emissions from the startup event, to minimize the duration of the event, and to minimize the frequency of such events. To a certain extent, this showing may be evaluated on past practice. However, this showing is also prospective, like the showing for malfunction/breakdown, as it relates to future events, which and whose exact circumstances are not known, and which, in fact, may not routinely occur. Again, the malfunction/breakdown or startup authorization that would be provided in the Revised Permit would not shield US Steel from state emission standards that may be violated during such events.

emissions, the duration of individual startups and the frequency of startups. Here, US Steel submitted the requisite proof in its January 31, 2013 submittal and as further detailed by the Illinois EPA in the Statement of Basis for those particular units requesting start up authorization. See, Statement of Basis as it addresses the Coke Oven Batteries at pages 33-34, Blast Furnace Processes at pages 35-35, Hot Strip Mill at pages 35-37, and Boilers at pages 37-38.

52. Many of US Steel's estimates of emissions that will occur during SMB are nothing more than statements of the maximum emissions that could possibly occur. For all but one of the opacity limits (which range from 10 - 30 percent) - whether during startup or malfunction/breakdown events, and across several different processes and emission units - US Steel estimates SMB event opacity to "peak at" or "be as high as" 100 percent. For example,

During certain circumstances, opacity from the boiler stack during startup will exceed 30 percent, and it can under certain circumstances be as high as 100 percent.

SMB Supplement re Startup at Boiler Processes at 7.

Similarly, for all of the particulate matter emission standards of 0.01 gr/dscf, USS-GCW states that SMB emissions could be "0.99 gr/dscf or greater." See, e.g., SMB Supplement re Startup at Blast Furnace Processes at 4.⁶⁹ These estimates bear no relation to a case-by-case determination. They state worst-case, maximum emissions virtually across-the-board, without regard to the nature of the event or the type of emission unit.

As explained in previous responses, this comment misrepresents prior statements of USEPA as this comment continues to imply that the requirement for a case-by-case determination extends to application requirements set forth in 35 IAC 201.261. USEPA has made no such assertion; nor does the specific language of this rule create such a requirement.

Moreover, this comment does not demonstrate that the information supplied by US Steel does not satisfy the information requirements of 35 IAC 201.261. For the subject units that US Steel requested startup or malfunction/breakdown authorization, US Steel provided the required information on the type and quantity of emissions during such events. While many of the emissions estimates quantify maximum emissions, this does not mean that the submittal fails to comport with the requirements of 35 IAC 201.261. Nothing in 35 IAC 201.261 prohibits an applicant from quantifying maximum emissions during such events. Simply because the comment suggests a different quantification should have been performed does not mean that the January 2013 submittal does not comport with applicable requirements especially when the comment does not suggest alternative quantifications.

⁶⁹ See also SMB Supplement re Malfunction and/or Breakdown at Blast Furnace Processes at 3; and SMB Supplement re Malfunction and/or Breakdown at Ladle Metallurgy Furnace at 2.

53. US Steel's descriptions of efforts to minimize excess SMB emissions offer little case-specific information.⁷⁰ Rather, US Steel summarizes the types of efforts that any prudent operator should routinely take. Language identical or similar to the following appears repeatedly in the SMB Supplement:

[A]ll reasonable efforts will be taken to minimize the quantity of emissions and the duration of emissions due to startup of the batteries, including extra staffing with overtime, maintaining a spare parts inventory, and employing additional equipment such as cranes and other mobile equipment to expedite repairs.

SMB Supplement re Startup of Coke Oven Processes at 11.⁷¹

While US Steel's description of efforts it will take to minimize excess emissions during startup or malfunction/breakdown events for each of the subject units may refer to similar measures, as acknowledged by the comment, these are measures that any prudent operator would take.⁷² In line with the comment's acknowledgement, the proposed measures are consistent with those sorts of measures that the USEPA would expect to be employed during startups, shutdowns and malfunction events (SSM). See, Memorandum from Steven Herman, Assistant Administrator for Enforcement and Compliance Assurance to Regional Administrators, Regions I - X, State Implementation Plans (SIPs): Policy Regarding Excess Emissions During Malfunctions, Startup and Shutdown (stating an approvable SIP provision requires the defendant to demonstrate that repairs were made in an expeditious fashion; this necessarily includes the use of off-shift labor and overtime).

54. For malfunction and breakdown, US Steel also states:

In response to malfunction and/or breakdown events, reasonable measures will be taken to prevent such events, including preventative maintenance, maintaining a spare parts inventory, and standing contracts with service providers.

SMB Supplement re Malfunction and/or Breakdown at Coke Oven Processes at 14.⁷³

As preventative maintenance, which should be occurring in any event, is cited as a means of minimizing excess emissions during malfunction and/or breakdown events, this is illogical as preventative maintenance cannot reduce excess emissions after events have occurred.

⁷⁰ **This comment again addresses startup and malfunction/breakdown events together, without recognition of the different requirements that apply under Illinois' rules.**

⁷¹ See also SMB Supplement re Malfunction and/or Breakdown at Coke Oven Processes at 14; SMB Supplement re Malfunction and/or Breakdown at Blast Furnace Processes at 4; SMB Supplement re Malfunction and/or Breakdown at Basic Oxygen Processes at 4; SMB Supplement re Malfunction and/or Breakdown at Ladle Metallurgy Furnace at 3; and SMB Supplement re Malfunction and Breakdown at Boiler Processes at 5.

⁷² **If the descriptions of efforts to minimize excess startup or malfunction/breakdown emissions for each of the subject units dramatically differed, the concern would be, in certain instances, that the measures proposed by US Steel were less than those of a prudent operator.**

⁷³ See SMB Supplement re Malfunction and/or Breakdown at Blast Furnace Processes at 4; SMB Supplement re Malfunction and/or Breakdown at Basic Oxygen Processes at 4; and SMB Supplement re Malfunction and/or Breakdown at Ladle Metallurgy Furnace at 3.

While this comment would superficially appear correct, it is not. Upon further consideration, it is apparent that preventative maintenance acts not only to reduce the frequency of malfunction/breakdown events but also the duration and magnitude of excess emissions during such events. This is because preventative maintenance acts to reduce the scope of such events, i.e., the number of elements in an emission unit that are impacted by an event and contribute to excess emissions. In this regard, upon occurrence of an event, preventative maintenance also acts to reduce the scope of the repair work that is needed and the time until normal operation of an emission unit is resumed.

55. In some cases, virtually no information is provided regarding efforts to minimize emissions. See, SMB Supplement re Startup at Blast Furnace Processes at 7 ("maintenance and monitoring" minimize excess startup emissions). Maintenance and monitoring are similarly relied on to minimize excess emissions at hot strip mill processes and boilers.⁷⁴

This comment's statement that minimal information (i.e., "maintenance and monitoring," alone, minimizes excess startup emissions) is provided concerning efforts to minimize emissions misrepresents the breadth of the information provided by US Steel to the Illinois EPA in its January 31, 2013 submittal. For the blast furnace processes, US Steel stated as follows:

All reasonable efforts are made to minimize startup emissions, the duration of startups and the frequency of startups. It is in U.S. Steel's self-interest to minimize the frequency and duration of startups, as they are costly and interrupt production. The design of the furnaces serves to minimize emissions during startups. Control equipment and control measures are fully operational during startup. Since these furnaces are MACT sources, they are equipped with monitoring equipment specifically designed to detect deficiencies in the function of these units. For the baghouses, this equipment includes leak detection, fan amperage monitoring, baghouse and differential pressure monitoring. Periodic maintenance is performed on regular schedules as required by the Iron and Steel MACT. The combination of this maintenance and monitoring as required by the MACT facilitates efforts taken to minimize emissions from the baghouses during a startup event. Startup and maintenance procedures will be followed and operations personnel shall monitor the individual instruments to minimize risk of excess emission during a blast furnace startup.

January 31, 2013, Supplement re Startup at Blast Furnace Processes, page 7.⁷⁵ ⁷⁶ See also, Statement of Basis, pages 34-35.

⁷⁴ See 2013 SMB Supplement re Startup at Hot Strip Mill Processes at 4; SMB Supplement re Startup at Boilers Processes at 7-8.

⁷⁵ While maintenance and monitoring is also relied upon to minimize emissions during startup at the hot strip mill, additional information was provided by US Steel as well. See, January 31, 2013, Supplement re Startup at Hot Strip Mill Processes, page 4. For instance, emissions during startup of the reheat furnaces are minimized by startup procedures that facilitate good combustion during startup. In addition, the duration of startups is minimized by keeping as much heat as possible in the furnace after a shutdown. This acts to reduce the amount of fuel that must be fired during startup. In

In light of the foregoing, there is no support for this comment's statement that "virtually no information" is provided regarding efforts to minimize emissions during startup of the blast furnace process. A closer review of the submittal indicates that not only is it in the financial interest of the source to minimize the frequency and duration of these events but that control equipment and control measures are fully operational during startup as well. As a result, it is significant that monitoring equipment exists to verify that the control equipment is functioning appropriately and is all-the-while monitored by operations personnel to further minimize the risk of excess emissions during startup.

56. US Steel has not provided the information required by 35 IAC 201.261 and 201.262, and Illinois EPA should not grant advance permission for US Steel to operate in excess of emission limits during SMB events. Illinois EPA should remove the SMB provisions from the Draft Revised Permit before issuing it in final form.

As previously discussed, the information submitted by US Steel meets the requirements of Illinois' SIP. Accordingly, for the emission units that are the subject of US Steel's requests, the Revised Permit would continue to authorize US Steel to make claims related to malfunction/breakdown or startup events. It would not be appropriate for the Illinois EPA in the Revised Permit to make the change requested by this comment.

57. In November 2012, Illinois EPA issued a Violation Notice to US Steel alleging violations for the NOx and VOM limits for the BOF furnaces and ESP) in Condition 7.5.6(c) of the 2011 Permit. By means of a letter dated January 30, 2013, US Steel submitted a compliance plan/schedule requesting that it be incorporated into the CAAPP Permit. While Illinois EPA acknowledges receipt of the compliance plan/schedule in the Statement of Basis, Illinois EPA has made the "preliminary decision to wait until the enforcement cases . . . have been resolved and/or adjudicated before including any compliance schedule in a CAAPP permit for the facility." Statement of Basis at 14-15. Although Illinois EPA has made the preliminary decision not to include US Steel's proposed compliance schedule in the planned Revised CAAPP Permit, the Act and the regulations promulgated thereunder require that such a compliance schedule be included in the Revised CAAPP Permit when it is reissued. Section 39.5(7)(p)(iii) of the Act states that each CAAPP permit shall include a "schedule of compliance consistent with subsection 5 of this Section and applicable regulations." 415 ILCS 5/39.5(7)(p)(iii); see also 415 ILCS 5/39.5(7)(p)(iv) (stating that each CAAPP permit shall include "[p]rogress reports consistent with an applicable schedule of compliance . . .").

addition, startup is overseen by operating personnel, who make adjustments to maintain proper combustion during startup. See also, Statement of Basis, pages 35-37.

⁷⁶ Similar information was provided by US Steel concerning efforts to minimize emissions at the boilers. See, January 31, 2013, Supplement re Startup at Boilers Processes, pages 7-8. While maintenance and monitoring is also relied upon to minimize emissions during startup, it is in US Steel's financial interest to minimize both the frequency and duration of startups as they are costly and interrupt production. Emissions during startup of the boilers are minimized by startup procedures that facilitate good combustion during startup. Startup is overseen by operating personnel, who make adjustments to maintain proper combustion during startup. See also, Statement of Basis, pages 37-38.

The relevant provisions of the Act and accompanying regulations do not require the Illinois EPA to include the compliance schedule proposed by US Steel in the Revised Permit. This is because the Illinois EPA is acting pursuant to Sections 39.5(9)(e)-(g) of the Act rather than Section 39.5(7)(p)(iii) of the Act, as cited by this comment. Section 39.5(7)(p)(iii) of the Act provides, in relevant part, that "[e]ach CAAPP permit issued under subsection 10 of this Section shall contain the following elements with respect to compliance . . . [a] schedule of compliance consistent with subsection 5 of this Section and applicable regulations." 415 ILCS 5/39.5(7)(p)(iii). As Section 39.5(7)(p)(iii) of the Act refers to Section 39.5(10) of the Act, it describes those circumstances under which the Illinois EPA shall generally issue a new CAAPP permit, permit modification, or permit renewal; Section 39.5(10) of the Act is not applicable to the present permitting action, where the Illinois EPA is merely responding to a USEPA order consistent with Section 39.5(9) of the Act.

The scope of the present permit proceeding is narrow. As set forth in the CAAPP, if a petition objecting to a CAAPP permit is granted by USEPA after the permit has already been issued, the Illinois EPA is authorized to revise the CAAPP permit in response to USEPA's order. See generally, Sections 39.5(9)(e)-(g) of the Act. These provisions do not require a source to submit an appropriate, complete application, as would be required under Section 39.5(5)(d) of the Act for the Illinois EPA to issue a new or revised CAAPP permit in circumstances where the Illinois EPA is not responding to a USEPA order. Indeed, Section 39.5(9)(g) of the Act specifically provides that a source will not be in violation of the requirement to have submitted a timely and complete application when the Illinois EPA is acting in response to an objection from USEPA.

58. Section 39.5(7)(p)(iv) of the Act provides that each CAAPP permit shall contain "[p]rogress reports consistent with an applicable schedule of compliance pursuant to paragraph (d) of subsection 5 of this Section." Section 39.5(7)(p)(iv) further details the required contents for any such progress reports. 415 ILCS 5/39.5(7)(p)(iv); see also 40 CFR 70.6(c)(3) - (4) (stating that "[a]ll part 70 permits shall contain the following elements with respect to compliance . . . [a] schedule of compliance . . . " and progress reports consistent with an applicable schedule of compliance). For such non-compliant emission units, the regulations further require the following:

...a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any such applicable requirements for which the source will be in noncompliance at the time of application submittal. This compliance plan/schedule of compliance addendum shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject

35 IAC 270.404(b).

The Illinois EPA's action is consistent with the CAAPP, Illinois's approved Title V permit program. As already discussed in response to a prior comment, Section 39.5(7)(p) of the Act pertains to CAAPP permits

issued under Section 39.5(10) of the Act and is not applicable to permits issued by the Illinois EPA pursuant to Section 39.5(9) of the Act in response to a USEPA order. See generally, Sections 39.5(9)(e)-(g) of the Act. These provisions do not require a source to submit an appropriate, complete application as would generally be required under Section 39.5(5)(d) of the Act when the Illinois EPA is issuing a new or revised CAAPP permit. Not surprising, the requirements of Sections 39.5(9)(e)-(g) of the Act are consistent with the relevant requirements found in 40 CFR 70.8(d) related to the content of state Title V programs, specifically that part of a state program addressing petitions to object filed before the USEPA.⁷⁷ See, 40 CFR 70.8(d) ("In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.")

While the comment also cites 35 IAC 270.404 for additional support, this rule does little more than codify and elaborate upon the content requirements for CAAPP applications submitted consistent with Section 39.5(5) of the Act. 35 IAC 270.404 begins by stating that "[a] CAAPP application shall contain a compliance plan/schedule of compliance for all emission units at the source, regardless of the compliance status of each emission unit, that contains the following..." Again, given Section 39.5(9)(g) of the Act explicitly provides that a source will not be in violation of the requirement to have submitted a timely and complete application when the Illinois EPA is responding to a USEPA objection, it matters little what the content requirements for a CAAPP application typically are under Section 39.5(5) of the Act when the Illinois EPA is not responding to a USEPA objection.

59. Based on statutory and regulatory provisions discussed in prior comments, CAAPP permits are required to include compliance schedules for emission units that are not in compliance with applicable requirements of the permit at the time of issuance. Illinois EPA stated that it is too soon to determine non-compliance based on the issuance of the violation notice to US Steel because the enforcement process is only in the beginning stages. Illinois EPA also noted that other considerations and information need to be taken into account prior to revising the CAAPP permit to include a compliance schedule. However, US Steel's January 30, 2013 letter requesting a compliance schedule be included in the Revised Permit clearly explained that the results of the last two stack tests demonstrated "that the BOF ESP cannot maintain compliance with the current emission limits for NOx and VOM." Thus, US Steel concluded, based on these stack tests, that USS-GCW cannot comply with certain requirements in the CAAPP Permit for USS-GCW. Accordingly, US Steel requested the inclusion of a compliance schedule in the Revised Permit. The Illinois EPA should reconsider its position on this matter and include the requested compliance schedule in the Revised Permit, as a new Condition 7.5.13.⁷⁸

⁷⁷ The federal rules cited by this comment, 40 CFR 70.6, generally deal with the required contents of an initial CAAPP permit or a CAAPP permit renewal rather than a revised CAAPP permit issued in response to a USEPA action on a petition to object.

⁷⁸ The Illinois should also add a cross-reference to this compliance schedule in the Revised Permit, by adding a note (*) after existing Condition 7.5.6(c) as follows: "*These limits have been addressed by the compliance schedule established for compliance with these factors and limits. (See Condition 7.5.13)."

As already discussed in response to other comments, the Illinois EPA is not required to include the compliance schedule proposed by US Steel in the Revised Permit because it was not considered by USEPA in its action on a petition to object. The scope of the present proceeding is quite narrow. See, Sections 39.5(9)(e)-(g) of the Act. The scope is not the same as that for a routine CAAPP permitting transaction, i.e., the issuance of an initial CAAPP permit or the renewal of a CAAPP permit. The Illinois EPA is merely responding to USEPA's action on a petition to object.⁷⁹ Accordingly, this proceeding does not provide an appropriate forum to include a compliance schedule in the Revised Permit for USS-GCW, much less the proposed compliance schedule submitted by US Steel.⁸⁰

⁷⁹ As already explained, the Illinois EPA is initiating the processing of US Steel's recently submitted compliance schedule in accordance with Section 39.5(14)(c) of the Act, as an application for a significant modification to the CAAPP permit for USS-GCW. That permitting action would potentially involve finalizing a compliance schedule that would address violations of certain emission limits by the BOF. As provided by the Act, the procedures of the CAAPP for significant modification must be followed for "applications requesting significant modifications and for those applications that do not qualify as either minor modifications or as administrative permit amendments." A modification of a CAAPP permit to include a compliance schedule would commonly be considered "significant." See, Section 39.5(14)(c)(i) and (ii) of the Act. As a significant modification, that permit action would be subject to public participation, with at least a 45-day public comment period, followed by review by USEPA, in accordance with Sections 39.5(8)(a) and (9) of the Act, rather than a limited 10-day public comment period, as provided for by Section 39.5(9)(g) of the Act.

⁸⁰ As discussed in the Statement of Basis, the issuance of a violation notice (VN) is not sufficient to satisfy the demonstration required under Section 505(b)(2) of the Clean Air Act for the inclusion of a compliance schedule in a Title V permit. The non-compliance alleged in a violation notice is simply an early stage in the larger enforcement process of determining whether a violation has occurred and the precise nature of such violation. At this stage in an enforcement action, without further investigation by appropriate enforcement staff, information is generally insufficient to warrant a compliance schedule.

In this particular case, US Steel initially responded to the Illinois EPA's violation notice on January 8, 2013. This response requested a meeting with the Illinois EPA and indicated that US Steel would be submitting additional information in rebuttal of the alleged violations. The requested meeting only recently took place, on February 6, 2013 and US Steel's formal response to the Illinois EPA was just submitted on February 27, 2013. While responding specifically to the violations alleged in the violation notice, US Steel neither admitted or denied the violations and reserved its right "to make arguments, as necessary, in defense of any and all allegations that may be raised by the Illinois EPA and/or the Illinois Attorney General related to this VN."

Meanwhile in the permitting context, on January 30, 2013 US Steel submitted a proposed compliance schedule related to this matter and requested that this compliance schedule be included in this Revised Permit. A prerequisite for inclusion of the proposed compliance schedule in the Revised Permit is that the Illinois EPA determine that the remedy proposed by US Steel and the timing of this remedy are appropriate. This is not discernable at this early stage of this enforcement action. In addition, as already discussed, the Illinois EPA's finding in this regard would need to be subject to public comment and review by USEPA consistent with the general procedures for CAAPP permitting under Sections 39.5(8)(a) and (9) of the Act before any compliance schedule in this matter could actually be included in the CAAPP permit for USS-GCW.

Accordingly, it is appropriate to wait until this enforcement case has further evolved before including any compliance schedule concerning this matter in a CAAPP permit for USS-GCW. It certainly not appropriate to include the compliance schedule proposed by US Steel in the Revised Permit that has now been issued.

FOR ADDITIONAL INFORMATION

Questions about this permitting 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

**SUMMARY OF SIGNIFICANT CHANGES BETWEEN
THE DRAFT AND THE ISSUED REVISED PERMITS**

Condition 5.13

The initial discussion in new Condition 5.13, the General Procedures for Certain Permit Limits on Emissions, now explicitly indicates that the "emission factors" contained in the subject conditions are emission limits. This change has been made because of the continuing confusion displayed in comments about whether the emission factors in those conditions were limits or fixed values of emissions that US Steel could use to address compliance with the limits in the subject conditions for annual emissions. This change is consistent with the 2012 Order as it stated that the Illinois EPA should consider clarifying in the Revised Permit that the emission factors in the subject conditions are, in fact, emission limits. See, 2012 Order, pages 8-9.

The introductory paragraph of new Condition 5.13 now reads that "[p]ursuant to Sections 39.5(7)(b) and (p)(v) of the Act, these procedures are applicable for the emission limits in Conditions 7.1.6(b)(i) through (iv), 7.4.6(b) through (f), 7.5.6(c) through (g) and 7.6.6(a) through (e), which address the rates of emissions or 'emission factors' (commonly in pounds/ton) and the annual emissions or 'maximum emissions' (in tons/year) of certain emission units, as the Permittee determines compliance with these limits with 'emission factors,' using the common meaning of this term. In particular, notwithstanding the fact that the above listed conditions set 'emission factor limits' or limits on the rates of emissions, for purposes of this condition, an 'emission factor' is a set value for the mass of a pollutant emitted by a particular emission unit relative to the amount of material that is processed or handled by the unit, or in the case of lead, a set value for the mass of lead emissions for each hour that the particular unit operates, which value is used in the determination of the emissions of the unit."

In addition, in Condition 5.13, the term "actual" is no longer used to describe emissions as represented or determined by emission factors. This is because these emissions may overstate the real or actual emissions. This change has been made in response to various comments. These comments highlighted the fact that the emissions of emission units as would conservatively be determined in compliance demonstrations using emission factors in accordance with the provisions of the permit would be equal to or, more likely, higher than the actual emissions of the units.

Note in Condition 5.13 and Introduction to Attachment 3

Changes have been made to the language in the note in new Condition 5.13 and related language in the introduction to Attachment 3, which lists the current emission factors being used by US Steel for the subject units as of the date of issuance of this Revised Permit. The changes clarify that the specific emission factors listed in Attachment 3 are based on information as provided by US Steel. This change was made in response to comments on the Draft Revised Permit that improperly suggested that the emission factors listed in Attachment 3 are factors that have been approved by the Illinois EPA rather than simply a listing of the emission factors that US Steel has indicated that it is currently using to demonstrate compliance with the subject emission limits.

Attachment 3

Notes have been added for the current emission factors used by US Steel for NOx and VOM emissions from the ESP at the BOF so that the Revised Permit accurately reflects the present status of the process to update these emission factors. In particular, parallel to the processing of the Revised Permit, the Illinois EPA has been independently pursuing claims that NOx and VOM emissions from the ESP at the BOF during two recent stack tests were in excess of applicable emission limits. While the NOx and VOM emission rates measured in the April 2012 and the July 2012 stack tests exceed the emission factors as previously provided by US Steel to the Illinois EPA, US Steel has not yet formally notified the Illinois EPA of a new, updated emission factor that it will be using for NOx and VOM emissions of the BOF ESP.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-2829
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, ILLINOIS 60601 - (312) 814-6026

PAT QUINN, GOVERNOR

JOHN J. KIM, INTERIM DIRECTOR

TDD 217/782-9143

NOV 30 2012

Certified Mail # 7010 2780 0002 1165 1120

Return Receipt Requested

Richard Veitch
United States Steel Corporation – Granite City Works
1951 State Street
Granite City, Illinois 62040

**RE: Violation Notice A-2012-00169
I.D. 119813AAI**

Dear Mr. Veitch:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act (“Act”), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency (“Illinois EPA”).

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this letter. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the source wishes to enter into a Compliance Commitment Agreement (“CCA”) pursuant to Section 31(a) of the Act. If the source wishes to enter into a CCA, the written response must also include proposed terms for the CCA that contains dates for achieving each commitment and may also include a statement that compliance has been achieved for some or all of the alleged violations. In order to increase the likelihood of the Illinois EPA accepting such terms, the written response should specifically propose them in a manner that can be formalized into an enforceable agreement between the Illinois EPA and the source. As such, proposed conditions should be as detailed as possible, including steps to be taken to achieve compliance, the manner of compliance, interim and completion dates, etc.

ROCKFORD - 4302 N. MAIN ST., ROCKFORD, IL 61103 - (815) 987-7760

ELGIN - 595 SOUTH STATE, ELGIN, IL 60123 - (847) 608-3131

CHAMPAIGN - 2125 S. FIRST ST., CHAMPAIGN, IL 61820 - (217) 278-5800

DES PLAINES - 9511 HARRISON ST., DES PLAINES, IL 60016 - (847) 294-4000

PEORIA - 5407 N. UNIVERSITY, ARBOR HALL #113, PEORIA, IL 61614 - (309) 693-5463

MARION - 2309 W. MAIN ST., SUITE 116, MARION, IL 62959 - (618) 993-7200

COLLINSVILLE - 2009 MALL STREET, COLLINSVILLE, IL 62234 - (618) 346-5120

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EXHIBIT E

Page 2

Violation Notice A-2012-00169

United States Steel Corporation – Granite City Works, I.D. 119813AAI

The Illinois EPA will review the proposed terms for a CCA provided by the source and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the source must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the source rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to the prosecutorial authority.

Written communications should be directed to ERIC JONES, Illinois EPA, Bureau of Air, Compliance Unit, P.O. Box 19276, Springfield, Illinois 62794-9276. All communications must include reference to the Violation Notice number in this matter.

Questions regarding this matter should be directed to JEFF BENBENEK at 618/346-5120.

Sincerely,



Raymond E. Pilapil, Manager
Compliance Section
Bureau of Air

REP: ej

Violation Notice A-2012-00169

United States Steel Corporation – Granite City Works, I.D. 119813AAI

ATTACHMENT A

Per available information:

1. Section 39.5(6)(a) of the Act and condition 7.5.6(c) of Clean Air Act Permit Program (“CAAPP”) permit 96030056: For at least calendar year 2011, United States Steel Corporation – Granite City Works caused or allowed the emissions of nitrogen oxides (“NOx”) and volatile organic material (“VOM”) from its basic oxygen furnace (“BOF”) and associated electrostatic precipitator (“ESP”) to exceed the emission limits of 69.63 tons/year and 10.74 tons/year, respectively. Additionally, during emissions testing of the BOF and associated ESP, performed on April 3-4, 2012 and July 19-20, 2012, United States Steel Corporation – Granite City Works caused or allowed the emissions of NOx and VOM in excess of the emission limits of 0.0389 lb/ton and 0.006 lb/ton, respectively.
2. Sections 9(a), 9.1(d) and 39.5(6)(a) of the Act, 40 CFR 63.7790(b)(3), and condition 7.5.3(f) of CAAPP permit 96030056: United States Steel Corporation – Granite City Works caused or allowed the hourly average opacity from the BOF and associated ESP to exceed 10% between April 4-6, 2012.
3. Sections 9(a), 9.1(d) and 39.5(6)(a) of the Act, 40 CFR 63.6(e)(1)(i), and condition 7.7.5-1(a) of CAAPP permit 96030056: On April 4-6, 2012, United States Steel Corporation – Granite City Works caused or allowed the operation of the BOF and associated ESP in a manner inconsistent with good air pollution control practices for minimizing emissions to levels required by 40 CFR 63, Subpart FFFFF.
4. Sections 9(a) and 39.5(6)(a) of the Act and condition 7.5.5-3(c)(ii) of CAAPP permit 96030056: United States Steel Corporation – Granite City Works caused or allowed the operation of the BOF after the steam-rings became inoperable. Specifically, from at least July 13, 2012 through October 1, 2012, and the steam-rings on steelmaking vessel #1 were inoperable and from at least August 29, 2012 through October 1, 2012, the steam-rings on steelmaking vessel #2 were inoperable.

RECOMMENDATIONS:

The Illinois EPA suggests that United States Steel Corporation – Granite City Works take the following actions to address the violations stated above:

1. Within 45 days of receipt of this Violation Notice, submit appropriate applications to revise the limitations for NOx and VOM contained in condition 7.5.6(c) of CAAPP permit 96030056.

Violation Notice A-2012-00169

United States Steel Corporation – Granite City Works, I.D. 119813AAI

ATTACHMENT A (Continued)

RECOMMENDATIONS (cont.):

2. Within 45 days of receipt of this Violation Notice, develop, implement, and submit to the Illinois EPA a revised operating and maintenance plan for the ESP that will ensure opacity emissions from the BOF and associated ESP will remain at a level below the hourly average of 10% during normal operation.
3. Within 45 days of receipt of this Violation Notice, develop, implement, and submit to the Illinois EPA a monitoring and maintenance plan that will ensure the proper operation of the steam rings at all times during operation of the BOF.
4. Within 45 days of receipt of this Violation Notice, submit to the Illinois EPA emissions calculations for NO_x, VOM, and PM from the BOF and associated ESP for calendar year 2012, along with supporting documentation.



Granite City Works
United States Steel
20th & State Street
Granite City, IL 62040
(618) 451-3456

RECEIVED

JAN 31 2013

January 30, 2013

VIA ELECTRONIC MAIL AND HAND DELIVERY

Illinois Environmental Protection Agency
BUREAU OF AIR
STATE OF ILLINOIS

Michael T. Reed, Manager
CAAPP Unit, Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East, Post Office Box 19276
Springfield, Illinois 62794-9276

Subject : United States Steel Corporation Granite City Works
CAAPP No. 96030056, Facility I.D No. 119813AAI
Basic Oxygen Furnace ESP Emissions – Permit Condition 7.5.6(c)

Dear Mr. Reed:

Following up to our prior submittal of stack test results and after receipt of the Violation Notice A-2012-00169, dated November 30, 2012, regarding the Basic Oxygen Furnace ESP emissions, United States Steel Corporation Granite City Works ("U.S. Steel") is hereby submitting a compliance schedule. As you discussed with representatives of U. S. Steel, U. S. Steel respectfully requests that the enclosed schedule, provided per 40 CFR § 70.5(c)(8) and § 39.5 of the Illinois Environmental Protection Act, be incorporated into CAAPP No. 96030056, consistent with 40 CFR § 70.6 and § 39.5 of the Illinois Environmental Protection Act.

The last two stack tests have demonstrated that the BOF ESP cannot maintain compliance with the current emission limits for NOx and VOM. These limits were developed from historic information from a prior owner of the facility. As you know, the ESP does not control nor is it believed to contribute to NOx and VOM emissions.

If you have any questions regarding the enclosed 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.

Finally, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

A handwritten signature in cursive script that reads "Richard E. Veitch".

Richard Veitch
General Manager
Granite City Works
United States Steel Corporation

Enclosures

EXHIBIT F

**United States Steel Corporation
Granite City Works
BOP ESP Emissions
Compliance Plan/Schedule
January 30, 2013**

Compliance Plan/Schedule Element	Milestone Date*	Completion Date
1. Advise Illinois EPA regarding stack test results/noncompliance.	September 19, 2012	Complete
2. Submit stack test schedule and test protocols to develop emission factors and revise annual limits for NO _x and VOM		April 30, 2013
3. Begin stack testing	1 months after IEPA approval of stack test plan	August 31, 2013
4. Submit final stack test results	2 months after final test	October 31, 2013
5. Submit emission factors for NO _x and VOM based on stack test results for IEPA approval	1 months after submitting results of final stack test	December 31, 2013
6. Submit PSD #95010001 and Title V permit application(s) for integrated processing to establish new NO _x and VOM emission factors and annual limits	6 months after emission factor approval	June 30, 2014
7. Receive PSD Permit	Assume year after application submittal	June 30, 2015
8. Submit Title V application for an administrative amendment or minor modification to incorporate PSD changes	One month after PSD permit issuance	July 31, 2015
9. Receive administrative amendment from IEPA	Three months	August 31, 2015
10. EPA 60-day review	60-days after submittal	October 31, 2015
11. Submit progress reports to IEPA at a minimum of every six (6) months		
12. Compliance**		October 31, 2015

* An interim milestone date, which is missed, is not a violation provided that the final compliance date(s) are met.

** Compliance date based on receiving final permit(s) with new emission factors

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

UNITED STATES STEEL)	
CORPORATION,)	
a Delaware corporation,)	
)	
Petitioner,)	
)	
v.)	PCB 2013-_____
)	(CAAPP Permit Appeal)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

MOTION FOR STAY OF EFFECTIVENESS OF CONTESTED CONDITIONS

NOW COMES Petitioner, UNITED STATES STEEL CORPORATION (hereinafter "U.S. Steel"), by and through its attorneys, HODGE DWYER & DRIVER, pursuant to Section 40.2(f) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/40.2(f), and hereby requests that the Illinois Pollution Control Board ("Board") grant a stay of effectiveness with regard to the contested conditions within the Revised Clean Air Act Permit Program ("CAAPP") permit (App. No. 96030056) issued to U.S. Steel by the Illinois Environmental Protection Agency ("Illinois EPA") on March 4, 2013 ("2013 CAAPP Permit"). In support of this Motion, U.S. Steel states as follows:

1. On March 4, 2013, the Illinois EPA issued the 2013 CAAPP Permit to U.S. Steel's integrated iron and steel mill in Granite City, Illinois.
2. U.S. Steel is contemporaneously filing herewith a Petition for Review ("Petition") of the 2013 CAAPP Permit, specifically contesting the following conditions:
 - Condition 5.13 – General Procedures for Certain Permit Limits on Emissions;
 - Condition 7.1.6(b)(i)-(iv) – Emission Factors for Material Handling and Processing Operations;

- Condition 7.4.6(b)-(f) – Emission Factors for Blast Furnace Activities;
- Condition 7.5.6(b) – Annual NO_x and VOM Emission Limits for the BOF Shop;
- Condition 7.5.6(c)-(g) – Emission Factors for BOF Shop Activities, NO_x and VOM Maximum Emissions for the BOF ESP Stack, and failure to include a note regarding a compliance schedule (See Condition 7.5.13);
- Condition 7.5.13 – Compliance Schedule and Current Enforcement Status: Failure to include a compliance schedule for NO_x and VOM emissions from the BOF Shop; and
- Condition 7.6.6(a)-(e) – Emission Factors for Continuous Casting Activities.

A table describing the contested conditions in more detail is included with this Motion as Exhibit A.

3. Section 40.2(f) of the Act states the following, in relevant part:

If requested by the applicant, the Board may stay the effectiveness of any final Agency action identified in subsection (a) of this Section during the pendency of the review process. If requested by the applicant, the Board shall stay the effectiveness of all the contested conditions of a CAAPP permit. The Board may stay the effectiveness of any or all uncontested conditions if the Board determines that the uncontested conditions would be affected by its review of contested conditions. If the Board stays any, but not all, conditions, then the applicant shall continue to operate in accordance with any related terms and conditions of any other applicable permits until final Board action in the review process. If the Board stays all conditions, then the applicant shall continue to operate in accordance with all related terms and conditions of any other applicable permits until final Board action in the review process. Any stays granted by the Board shall be deemed effective upon the date of final Agency action appealed by the applicant under this subsection (f). Subsection (b) of Section 10-65 of the Illinois Administrative Procedure Act shall not apply to actions under this subsection.

415 ILCS 5/40.2(f). (Emphasis added.)

4. As set forth in Section 40.2(f) above, “[i]f requested by the applicant, the Board may stay the effectiveness of any final Agency action identified in subsection (a) of this Section during the pendency of the review process.”

5. Section 40.2(a) includes as a “final Agency action” Illinois EPA’s granting of a CAAPP permit with conditions. 415 ILCS 5/40.2(a).

6. Therefore, pursuant to Section 40.2(f), the Board shall grant U.S. Steel a stay of the effectiveness of the contested conditions of the 2013 CAAPP Permit, as described above and in the Petition, during the pendency of the review process.

7. Further, a stay of the contested conditions is necessary to prevent irreparable harm to U.S. Steel and to protect U.S. Steel’s clearly ascertainable right to appeal permit conditions.

8. Finally, U.S. Steel requests that the Board stay the effectiveness of any uncontested conditions should the Board determine that any uncontested conditions would be affected by its review of contested conditions. *See* 415 ILCS 5/40.2(f).

WHEREFORE, Petitioner, UNITED STATES STEEL CORPORATION requests the Board grant a stay of effectiveness with regard to the contested conditions of the

2013 CAAPP Permit, as described herein and in the Petition, and any uncontested conditions, as determined by the Board, during the pendency of the review process.

Respectfully submitted,

UNITED STATES STEEL CORPORATION,
Petitioner,

Dated: April 8, 2013

By: Monica T. Rios
Monica T. Rios

Katherine D. Hodge
Monica T. Rios
HODGE DWYER & DRIVER
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

CONTESTED CONDITIONS – CAAPP Permit Appeal (Permit issued March 4, 2013)

Contested Condition in CAAPP Permit	CAAPP Permit Page(s)	Emission Factor
5.13 – General Procedures for Certain Permit Limits on Emissions	45-47	NA
7.1 – Material Handling and Processing Operations		
7.1.6(b)(i) – Emissions from Material HS and Deslagging Station (See 7.6.6(a) below)	53	PM: 0.00355 lbs/ton PM10: 0.00355 lbs/ton
7.1.6(b)(ii) – BOF Additive System (Trackhopper Baghouse)	54	PM: 0.00032 lbs/ton PM10: 0.00032 lbs/ton
7.1.6(b)(iii) – Flux conveyor and transfer points (Bin Floor Baghouse)	54	PM: 0.0016 lbs/ton PM10: 0.0016 lbs/ton
7.1.6(b)(iv) – Iron Pellet Screen	54	PM: 0.00279 lbs/ton PM10: 0.00279 lbs/ton
7.4 – Blast Furnace		
7.4.6(b) – Casthouse Baghouse	158	PM: 0.0703 lbs/ton PM10: 0.0703 lbs/ton SO2: 0.2006 lbs/ton NOx: 0.0144 lbs/ton VOM: 0.0946 lbs/ton
7.4.6(c) – Blast Furnace uncaptured fugitive emissions	158	PM: 0.031 lbs/ton PM10: 0.0155 lbs/ton SO2: 0.0104 lbs/ton NOx: 0.0007 lbs/ton VOM: 0.0047 lbs/ton
7.4.6(d) – Blast Furnace Charging	158	PM: 0.0024 lbs/ton PM10: 0.0024 lbs/ton
7.4.6(e) – Slag Pits	158	PM: 0.00417 lbs/ton PM10: 0.00417 lbs/ton SO2: 0.0100 lbs/ton
7.4.6(f) – Iron Spout Baghouse	159	PM: 0.02548 lbs/ton PM10: 0.02548 lbs/ton SO2: 0.0073 lbs/ton

Contested Condition in CAAPP Permit	CAAPP Permit Page(s)	Emission Factor
7.5 – Basic Oxygen Processes		
7.5.6 (b) – BOF Shop Emissions (tons/yr total) – (Only NOx and VOM annual emission limits)	191	Annual Emissions: NOx: 70 tpy VOM: 12 tpy
7.5.6(c) – BOF ESP Stack (charge, refine, tap)	191	PM: 0.16 lbs/ton PM10: 0.16 lbs/ton NOx: 0.0389 lbs/ton VOM: 0.0060 lbs/ton CO: 8.993 lbs/ton Lead: 0.1934 lbs/hr Maximum Emissions: NOx: 69.63 tpy VOM: 10.74 tpy
7.5.6(c) – BOF ESP Stack – Failure to include note regarding compliance schedule (See Condition 7.5.13)	191	NA
7.5.6(d) – BOF Roof Monitor	191	PM: 0.0987 lbs/ton PM10: 0.06614 lbs/ton Lead: 0.0129 lbs/hr
7.5.6(e) – Hot Metal Desulfurization and Hot Metal Transfer	192	PM: 0.03721 lbs/ton PM10: 0.03721 lbs/ton VOM: 0.0010 lbs/ton Lead: 0.0133 lbs/hr
7.5.6(f) – Hot metal charging and ladle slag skimming	192	PM: 0.0050 lbs/ton PM10: 0.0050 lbs/ton
7.5.6(g) – Argon Stirring Station and Material Handling Tripper (Ladle Metallurgy Baghouse #2)	192	PM: 0.00715 lbs/ton PM10: 0.00715 lbs/ton
7.5.13 – Compliance Schedule and Current Enforcement Status – Failure to include compliance schedule for NOx and VOM emissions from the BOF Shop related to the VN issued November 30, 2012.	216	NA
7.6 – Continuous Casting		
7.6.6(a) – Deslagging Station and associated Material Handling System (See 7.1.6(b)(i) above)	220	PM: 0.00355 lbs/ton PM10: 0.00355 lbs/ton

Contested Condition in CAAPP Permit	CAAPP Permit Page(s)	Emission Factor
7.6.6(b) – Caster Molds - Casting	220	<i>PM</i> : 0.006 lbs/ton <i>PM10</i> : 0.006 lbs/ton <i>NOx</i> : 0.050 lbs/ton
7.6.6(c) – Caster Spray Chambers	220	<i>PM</i> : 0.00852 lbs/ton <i>PM10</i> : 0.00852 lbs/ton
7.6.6(d) – Slab Cut-off		<i>PM</i> : 0.0071 lbs/ton <i>PM10</i> : 0.0071 lbs/ton
7.6.6(e) – Slab Ripping	220	<i>PM</i> : 0.00722 lbs/ton <i>PM10</i> : 0.00722 lbs/ton