

EXHIBIT 2

REDLIEND VERSION OF THE PERMIT
THROUGH SECTION 8

217/782-2113

"RENEWAL"
CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

PERMITTEE:

Union Electric Company, d/b/a AmerenUE
Attn: Michael L. Menne, Vice President Environmental Services
1901 Chouteau Avenue
P.O. Box 66149, MC 602
St. Louis, Missouri 63166-6149

I.D. No.: 119105AAA
Application No.: 95090017

Date Received: May 24, 2006
Date Issued: March 19, 2009
Expiration Date¹: March 19, 2014

Operation of: Ameren UE Venice Power Plant
Source Location: 701 Main Street, Venice, Madison County, 62090
Responsible Official: Michael L. Menne, Vice President Environmental Services

This permit is hereby granted to the above-designated Permittee to OPERATE an electric utility, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact John Cashman at 217/782-2113.

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

ECB:JRC: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 INTRODUCTION

1.1 Source Identification

AmerenUE Venice Power Plant
701 Main Street
Venice, Illinois 62090
314/992-8032

I.D. No.: 119105AAA
County: Madison
Standard Industrial Classification: 4911, Electric Utility

1.2 Owner/Parent Company

Union Electric Company, d/b/a AmerenUE
1901 Chouteau Avenue
P.O. Box 66149, MC 602
St. Louis, Missouri 63166-6149

1.3 Operator

Union Electric Company, d/b/a AmerenUE
1901 Chouteau Avenue
P.O. Box 66149, MC 602
St. Louis, Missouri 63166-6149

Steven C. Whitworth
314/554-4908

1.4 Source Description

The Venice Power Plant is located at 701 Main Street in Venice, Illinois; Madison County. The plant currently operates natural gas-fired and oil-fired combustion turbines to generate electricity. The plant previously operated eight natural gas and oil-fired boilers to generate electric power but they have been permanently shut down.

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

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 PSD and 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".

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
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
CO	Carbon Monoxide
ERMS	Emissions Reduction Market System
HAP	Hazardous Air Pollutant
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
MACT	Maximum Achievable Control Technology
MSSCAM	Major Stationary Sources Construction and Modification (35 IAC 203, New Source Review for non-attainment areas)
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
PSD	Prevention of Significant Deterioration (40 CFR 52.21, New Source Review for attainment areas)
RMP	Risk Management Plan
SO ₂	Sulfur Dioxide
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
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:

Natural Gas Heaters < 10.0 mmBtu/hr

- 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:

None

- 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:

Storage tanks of any size containing 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 between 112 kW and 1,118 kW (150 and 1,500 horsepower) power output that are emergency or standby units [35 IAC 201.210(a)(16)].

- 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 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.
- 3.2.4 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 219.182.

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 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
CT02	Twin Pac Natural Gas Fired Turbine with Distillate Oil as Back-Up Fuel (Nominal Capacity 60 MWe)	2002	Water Injection
CT01	Stationary Gas Turbine That Drives a Generator (Nominal Capacity 518 mmBtu/hr)	1967	None
CT03 and CT04	212 MWe Natural Gas Fired Turbine, each	CT03 (May 28, 2005), CT04 (May 24, 2005)	Low NO _x Combustor System
CT05	135 MWe Natural Gas Fired Turbine	September 29, 2005	Low NO _x Combustor System
Fire Pump	Diesel Fire Pump	2002	None
Emergency Generator	Emergency Diesel Generator	2002	None

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 and CO emissions.

5.2 Area Designation

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 and PM_{2.5} and attainment or unclassifiable for all other criteria pollutants (CO, lead, NO₂, PM₁₀, and 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 In addition, emission units at this source are subject to the following regulations of general applicability:

- a. No person shall 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 overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.
- b. 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.

5.3.3 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.

5.3.4 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.

5.3.5 Future Emission Standards

- a. Should this stationary source become subject to a new or revised regulation under 40 CFR Parts 60, 61, 62, or 63, or 35 IAC Subtitle B after the date issued of this permit, 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 or revised regulations (see Condition 9.12.2).
- b. 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.

5.3.6 Episode Action Plan

- a. Pursuant to 35 IAC 244.141, 244.142, and 244.143, 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. The plan shall contain the information specified in 35 IAC 244.144 and is incorporated by reference into this permit.

- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared by the Director of the Illinois EPA or his or her designated representative.
- 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.

5.4 Source-Wide Non-Applicability of Regulations of Concern

Source-wide non-applicability of regulations of concern are not set for this source. However, there are terms for unit specific non-applicability of regulations of concern set forth in Section 7 of this permit.

5.5 Source-Wide Control Requirements and Work Practices

Source-wide control requirements and work practices are not set for this source. However, there are requirements for unit specific control requirements and work practices set forth in Section 7 of this permit.

5.6 Source-Wide Production and Emission Limitations

5.6.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.6.1) are set for the purpose of establishing fees and are not federally enforceable (see Section 39.5(18) of the Act).

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	32.8
Sulfur Dioxide (SO ₂)	102.1
Particulate Matter (PM)	35.3
Nitrogen Oxides (NO _x)	372.0
HAP, not included in VOM or PM	----
Total	542.2

~~5.6.2 Emissions of Hazardous Air Pollutants~~

~~Pursuant to Section 39.5(7)(a) of the Act, the emissions of HAPs from the source shall be less than 10 tons/year for each individual HAP and 25 tons/year for all HAPs combined as limited~~

~~in Construction Permit 03120068. 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). This condition is being imposed so that the source is not a major source of HAP emissions. The Permittee shall fulfill the applicable testing, recordkeeping, and reporting requirements of Conditions 5.7.2, 5.9.2, and 5.10.2.~~

5.6.3 Other Source-Wide Production and Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to the federal rules for PSD, state rules for MSSCAM, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.7 Source-Wide Testing Requirements

- 5.7.1 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.

~~5.7.2 HAP Testing to Verify Minor Source Status~~

~~Pursuant to Condition 5.7.1 and to verify compliance with the requirements of Condition 5.6.2, that is that this source is not a major source of HAPs, the following testing requirements are established:~~

~~a. If in the previous calendar year, emissions of HAPs exceeded 80% of major source threshold for individual or total HAPs (greater than 8 tons of a single HAP or greater than 20 tons of total HAPs), then testing for HAPs shall be conducted as follows:~~

~~i. Testing shall be conducted using methods that would be acceptable under the federal National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63 Subpart YYYYY. Specifically, the testing procedures detailed at 40 CFR 63.6120 of the performance tests section shall be used. For multiple turbines, the source owner or operator shall test largest turbine which makes the largest contributions to individual and total HAP emissions.~~

~~b. The calculation as to whether the 80% of major source threshold was exceeded shall be based on records and procedures in Condition 5.9.2 and shall be completed by January 31 for the previous calendar year. If testing is required it shall be completed by September 30.~~

~~e. 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

Source-wide monitoring requirements are not set for this source. However, there are provisions for unit specific monitoring set forth in Section 7 of this permit.

5.9 Source-Wide Recordkeeping Requirements

5.9.1 Annual Emission Records

The Permittee shall maintain records of total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to demonstrate compliance with Condition 5.6.1, pursuant to Section 39.5(7)(b) of the Act.

~~5.9.2 Records for HAP Emissions~~

~~a. The Permittee shall maintain records of individual and combined HAP emissions on a monthly and annual basis for~~

~~the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to demonstrate compliance with Condition 5.6.2, pursuant to Section 39.5(7)(b) of the Act.~~

- ~~b. If testing is required by Condition 5.7.2, the Permittee shall keep records of the testing, including the test date, conditions, methodologies, calculations, test results, and any discrepancies between the test results and formulation specifications of Condition 5.9.2(c) below.~~
- ~~e. The Permittee shall keep a record of the applicability determination for 40 CFR 63, Subpart YYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, at the source for a period of five years after the determination. This determination shall include a detailed analysis that demonstrates why the Permittee believes the source is not subject to 40 CFR 63, Subpart YYY.~~

5.9.3 Retention and Availability of Records

- 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), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA 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.

5.10 Source-Wide Reporting Requirements

5.10.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the source with the permit requirements within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. There are also reporting requirements for unit specific emission units set forth in Section 7 of this permit.

5.10.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios

Source-wide operational flexibility is not set for this source.

5.12 Source-Wide Compliance Procedures

5.12.1 Procedures for Calculating Emissions

Except as provided in Condition 9.1.3, compliance with the source-wide emission limits specified in Condition 5.6 shall be addressed by the recordkeeping and reporting requirements of Conditions 5.9 and 5.10, and compliance procedures in Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit.

6.0 CONDITIONS FOR EMISSIONS CONTROL PROGRAMS

6.1 Clean Air Interstate Rule (CAIR) Program

6.1.1 Applicability

This source is an affected source for purposes of the Clean Air Interstate Rule ("CAIR") Program and the following emission units at the source are affected CAIR units:

Turbines CT01 through CT05

Note: Under Section 110 of the Clean Air Act (CAA), the USEPA adopted the Clean Air Interstate Rule or CAIR, 40 CFR Part 96, to reduce and permanently cap emissions of sulfur dioxide (SO₂), and nitrogen oxides (NO_x) from electric power plants that significantly contribute to fine particulate and ozone in the ambient air in the Eastern United States. To implement CAIR in Illinois, the Illinois EPA adopted 35 IAC Part 225 Subparts A, C, D and E. For purposes of this permit, these requirements are referred to as CAIR provisions.

6.1.2 Applicable CAIR Requirements for SO₂ Emissions

The owners and operators of this source shall not violate applicable CAIR provisions, in 35 IAC Part 225, Subpart C. SO₂ emissions from the affected CAIR units shall not exceed the equivalent number of allowances that the source lawfully holds under these CAIR provisions.

Note: CAIR affected sources must hold CAIR SO₂ allowances to account for the emissions from the affected CAIR units. Each CAIR SO₂ allowance is a limited authorization to emit during the respective CAIR SO₂ annual period or subsequent period. The possession of SO₂ allowances does not authorize exceedances of applicable emission standards or violations of ambient air quality standards.

6.1.3 Applicable CAIR Requirements for NO_x Emissions

The owners and operators of this source shall not violate applicable CAIR provisions, in 35 IAC Part 225, Subpart D. NO_x emissions from the affected CAIR units shall not exceed the equivalent number of allowances that the source lawfully holds under these CAIR provisions.

Note: CAIR affected sources must hold CAIR NO_x allowances to account for the emissions from the affected CAIR units. Each CAIR NO_x allowance is a limited authorization to emit during the respective CAIR NO_x annual period or subsequent period. The possession of NO_x allowances does not authorize exceedances of applicable emission standards or violations of ambient air quality standards.

6.1.4 Applicable CAIR Requirements for NO_x Ozone Season Emissions

The owners and operators of this source shall not violate applicable CAIR provisions, in 35 IAC Part 225, Subpart E. Seasonal NO_x emissions from the affected CAIR units shall not exceed the equivalent number of allowances that the source lawfully holds under these CAIR provisions.

Note: CAIR affected sources must hold CAIR NO_x ozone season allowances to account for the emissions from the affected CAIR units. Each CAIR NO_x ozone season allowance is a limited authorization to emit during the respective CAIR NO_x ozone season or subsequent season. The possession of NO_x allowances does not authorize exceedances of applicable emission standards or violations of ambient air quality standards.

6.1.5 Monitoring, Recordkeeping and Reporting

The owners and operators of the source and, to the extent applicable, their designated representative, shall comply with applicable requirements for monitoring, recordkeeping and reporting specified by 35 IAC Part 225 Subparts C, D and E.

Note: As further addressed by Section 7 of this permit, the following emission determination methods are currently being used for the affected CAIR units.

6.1.6 CAIR Permit

The owners and operators of the source shall comply with the terms and conditions of the source's CAIR permit (attached).

Note: This source is subject to a CAIR permit, which was issued pursuant to 35 IAC Part 225.320, 225.420 and 225.520. CAIR sources must be operated in compliance with their CAIR permits. This source's CAIR permit is incorporated into this CAAPP permit with a copy of the current CAIR permit included as an attachment to this permit. Revisions and modifications to the CAIR permit are governed by Section 39.5 of the Act. Accordingly, revision or renewal of the CAIR permit may be handled separately from this CAAPP permit and a copy of the new CAIR permit may be included in this permit by Administrative Amendment.

6.1.7 Coordination with other Requirements

- a. This permit does not contain any conditions that are intended to interfere with or modify the requirements of 35 IAC Part 225 C, D, and E, 40 CFR Part 96; or Title IV of the CAA. In particular, this permit does not restrict the flexibility of the owners and operators of this source to comply with CAIR provisions, including the ability to obtain CAIR NO_x allowances from Illinois' Clean Air Set Aside (CASA) for qualifying projects.

- b. Where another applicable requirement of the CAA is more stringent than an applicable requirement of 35 IAC Part 225, Subparts C, D, or E; 40 CFR Part 96; or Title IV of the CAA, all requirements are incorporated into this permit and are enforceable and the owners and operators of the source shall comply with both requirements.

6.2 Acid Rain

6.2.1 Applicability

Under Title IV of the CAA, Acid Deposition Control, this source is an affected source and the following emission units at the source are affected units for acid deposition:

Turbines CT01 through CT05

Note: Title IV of the CAA, and other laws and regulations promulgated thereunder, establish requirements for affected sources related to control of emissions of pollutants that contribute to acid rain. For purposes of this permit, these requirements are referred to as Title IV provisions.

6.2.2 Applicable Emission Requirements

The owners and operators of the source shall not violate applicable Title IV provisions. SO₂ emissions of the affected units shall not exceed any allowances that the source lawfully holds under Title IV provisions [Section 39.5(7)(g) and (17)(1) of the Act].

Note: Affected sources must hold SO₂ allowances to account for the SO₂ emissions from affected units at the source that are subject to Title IV provisions. Each allowance is a limited authorization to emit up to one ton of SO₂ emissions during or after a specified calendar year. The possession of allowances does not authorize exceedances of applicable emission standards or violations of ambient air quality standards.

6.2.3 Monitoring, Recordkeeping and Reporting

The owners and operators of the source and, to the extent applicable, their designated representative, shall comply with applicable requirements for monitoring, recordkeeping and reporting specified by Title IV provisions, including 40 CFR Part 75 [Section 39.5(7)(b) and 17(m) of the Act].

6.2.4 Acid Rain Permit

The owners and operators of the source shall comply with the terms and conditions of the source's Acid Rain permit [Section 39.5(17)(1) of the Act].

Note: The source is subject to an Acid Rain permit, which was issued pursuant to Title IV provisions, including Section 39.5(17) of the Act. Affected sources must be operated in compliance with their Acid Rain permits. This source's Acid Rain permit is incorporated by reference into this permit and a copy of the current Acid Rain permit is included as Attachment 6 of this permit. Revisions and modifications of this Acid Rain permit, including administrative amendments and automatic

amendments (pursuant to Sections 408(b) and 403(d) of the CAA or regulations thereunder) are governed by Title IV provisions, as provided by Section 39.5(13)(e) of the Act. Accordingly, revision or renewal of the Acid Rain permit may be handled separately from this CAAPP permit and a copy of the new Acid Rain permit may be included in this permit by administrative amendment.

6.2.5 Coordination with Other Requirements

- a. This permit does not contain any conditions that are intended to interfere with or modify the requirements of Title IV provisions. In particular, this permit does not restrict the flexibility under Title IV provisions of the owners and operators of this source to amend their Acid Rain compliance plan [Section 39.5(17)(h) of the Act].
- b. Where another applicable requirement of the CAA is more stringent than an applicable requirement of Title IV provisions, both requirements are incorporated into this permit and are enforceable and the owners and operators of the source shall comply with both requirements [Section 39.5(7)(h) of the Act].

6.3 NO_x Trading Program - Existing budget EGU

6.3.1 Description of NO_x Trading Program

The NO_x Trading Program is a regional "cap and trade" market system for large sources of NO_x emissions in the eastern United States, including Illinois. It is designed to reduce and maintain NO_x emissions from the emission units covered by the program within a budget to help contribute to attainment and maintenance of the ozone ambient air quality standard in the multi-state region covered by the program, as required by Section 110(a)(2)(D) of the CAA. The NO_x Trading Program applies in addition to other applicable requirements for NO_x emissions and in no way relaxes these other requirements.

Electrical generating units (EGU) that are subject to the NO_x Trading Program are referred to as "budget EGU." Sources that have one or more EGU or other units subject to the NO_x Trading Program are referred to as budget sources.

The NO_x Trading Program controls NO_x emissions from budget EGU and other budget units during a seasonal control period from May 1 through September 30 of each year, when weather conditions are conducive to formation of ozone in the ambient air. (In 2004, the first year that the NO_x Trading Program is in effect, the control period will be May 31 through September 30.) By November 30 of each year, the allowance transfer deadline, each budget source must hold "NO_x allowances" for the actual NO_x emissions of its budget units during the preceding control period. The USEPA will then retire NO_x allowances in the source's accounts in amounts equivalent to its seasonal emissions. If a source does not have sufficient allowances in its accounts, USEPA would subtract allowances from the source's future allocation for the next control period and impose other penalties as appropriate. Stringent monitoring procedures developed by USEPA apply to budget units to assure that actual emissions of NO_x emissions are accurately determined.

The number of NO_x allowances available for budget sources is set by the overall budget for NO_x emissions established by USEPA. This budget requires a substantial reduction in NO_x emissions from historical levels as necessary to meet air quality goals. In Illinois, existing budget sources initially receive their allocation or share of the NO_x allowances budgeted for EGU in an amount determined by rule [35 IAC Part 217, Appendix F]. Between 2007 and 2011, the allocation mechanism for existing EGU gradually shifts to one based on the actual operation of EGU in preceding control periods. New budget EGU, for which limited operating data may be available, may obtain NO_x allowances from the new source set-aside (NSSA), a portion of the overall budget reserved for new EGU.

In addition to directly receiving or purchasing NO_x allowances as described above, budget sources may transfer NO_x allowances

from one of their units to another. They may also purchase allowances in the marketplace from other sources that are willing to sell some of the allowances that they have received. Each budget source must designate an account representative to handle all its allowance transactions. The USEPA, in a central national system, will maintain allowance accounts and record transfer of allowances among accounts.

The ability of sources to transfer allowances will serve to minimize the costs of reducing NO_x emissions from budget units to comply with the overall NO_x budget. In particular, the NO_x emissions of budget units that may be most economically controlled will be targeted by sources for further control of emissions. This will result in a surplus of NO_x allowances from those units that can be transferred to other units at which it is more difficult to control NO_x emissions. Experience with reduction of sulfur dioxide emissions under the federal Acid Rain program has shown that this type of trading program not only achieves regional emission reductions in a more cost-effective manner but also results in greater overall reductions than application of traditional emission standards to individual emission units.

The USEPA developed the plan for the NO_x Trading Program with assistance from affected states. Illinois' rules for the NO_x Trading Program for EGU are located at 35 IAC Part 217, Subpart W, and have been approved by the USEPA. These rules provide for interstate trading, as mandated by Section 9.9 of the Act. Accordingly, these rules refer to and rely upon federal rules at 40 CFR Part 96, which have been developed by USEPA for certain aspects of the NO_x Trading Program, and which an individual state must follow to allow for interstate trading of allowances.

Note: This narrative description of the NO_x Trading Program is for informational purposes only and is not enforceable.

6.3.2 Applicability

- a. i. The following emission units at this source are budget EGU for purposes of the NO_x Trading Program. Accordingly, this source is a budget source and the Permittee is the owner or operator of a budget source and budget EGU. In this section of this permit, these emission units are addressed as budget EGU.

Turbines CT01, CT02, CT03, CT04 and CT05

- ii. This permit does not provide "low-emitter status" for the above emission units pursuant to 35 IAC 217.754(c).

- b. The following EGU that were previously operated at the source also have been allocated certain NO_x allowances under the NO_x Trading Program. Even though these units are not

allowed to operate by this permit, these units' allowances may be used to demonstrate compliance under the NO_x Trading Program.

None

6.3.3 General Provisions of the NO_x Trading Program

- a. This source and the budget EGU at this source shall comply with all applicable requirements of Illinois' NO_x Trading Program, i.e., 35 IAC Part 217, Subpart W, and 40 CFR Part 96 (excluding 40 CFR 96.4(b) and 96.55(c), and excluding 40 CFR 96, Subparts C, E, and I), pursuant to 35 IAC 217.756(a) and 217.756(f)(2).
- b. Any provision of the NO_x Trading Program that applies to a budget source (including any provision applicable to the account representative of a budget source) shall also apply to the owner and operator of such budget source and to the owner and operator of each budget EGU at the source, pursuant to 35 IAC 217.756(f)(3).
- c. Any provision of the NO_x Trading Program that applies to a budget EGU (including any provision applicable to the account representative of a budget EGU) shall also apply to the owner and operator of such budget EGU. Except with regard to requirements applicable to budget EGUs with a common stack under 40 CFR 96, Subpart H, the owner and operator and the account representative of one budget EGU shall not be liable for any violation by any other budget EGU of which they are not an owner or operator or the account representative, pursuant to 35 IAC 217.756(f)(4).

6.3.4 Requirements for NO_x Allowances

- a. Beginning in 2004, by November 30 of each year, the allowance transfer deadline, the account representative of each budget EGU at this source shall hold allowances available for compliance deduction under 40 CFR 96.54 in the budget EGUs compliance account or the source's overdraft account in an amount that shall not be less than the budget EGUs total tons of NO_x emissions for the preceding control period, rounded to the nearest whole ton, as determined in accordance with 40 CFR 96, Subpart H, plus any number necessary to account for actual utilization (e.g., for testing, start-up, malfunction, and shut down) under 40 CFR 96.42(e) for the control period, pursuant to 35 IAC 217.756(d)(1). For purposes of this requirement, an allowance may not be utilized for a control period in a year prior to the year for which the allowance is allocated, pursuant to 35 IAC 217.756(d)(5).
- b. The account representative of a budget EGU that has excess emissions in any control period, i.e., NO_x emissions in

excess of the number of NO_x allowances held as provided above, shall surrender allowances as required for deduction under 40 CFR 96.54(d)(1), pursuant to 35 IAC 217.756(f)(5). In addition, the owner or operator of a budget EGU that has excess emissions shall pay any fine, penalty, or assessment, or comply with any other remedy imposed under 40 CFR 96.54(d)(3) and the Act, pursuant to 35 IAC 217.756(f)(6). Each ton of NO_x emitted in excess of the number of NO_x allowances held as provided above for each budget EGU for each control period shall constitute a separate violation of 35 IAC Part 217 and the Act, pursuant to 35 IAC 217.756(d)(2).

- c. An allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program is a limited authorization to emit one ton of NO_x in accordance with the NO_x Trading Program. As explained by 35 IAC 217.756(d)(6), no provisions of the NO_x Trading Program, the budget permit application, the budget permit, or a retired unit exemption under 40 CFR 96.5 and no provision of law shall be construed to limit the authority of the United States or the State of Illinois to terminate or limit this authorization. As further explained by 35 IAC 217.756(d)(7), an allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program does not constitute a property right. As provided by 35 IAC 217.756(d)(4), allowances shall be held in, deducted from, or transferred among allowances accounts in accordance with 35 IAC Part 217, Subpart W, and 40 CFR 96, Subparts F and G.

6.3.5 Monitoring Requirements for Budget EGU

- a. The Permittee shall comply with the monitoring requirements of 40 CFR Part 96, Subpart H, for each budget EGU and the compliance of each budget EGU with the emission limitation under Condition 6.3.4(a) shall be determined by the emission measurements recorded and reported in accordance with 40 CFR 96, Subpart H, pursuant to 35 IAC 217.756(c)(1), (c)(2) and (d)(3).
- b. The account representative for the source and each budget EGU at the source shall comply with those sections of the monitoring requirements of 40 CFR 96, Subpart H, applicable to an account representative, pursuant to 35 IAC 217.756(c)(1) and (d)(3).

Note: Pursuant to 40 CFR 96.70(b), existing budget EGU were to begin complying with applicable monitoring requirements of 40 CFR Part 96 at least one year in advance of the start of the first control period governed by the NO_x Trading Program.

6.3.6 Recordkeeping Requirements for Budget EGU

Unless otherwise provided below, the Permittee shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This 5-year period may be extended for cause at any time prior to the end of the 5 years, in writing by the Illinois EPA or the USEPA.

- a. The account certificate of representation of the account representative for the source and each budget EGU at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 40 CFR 96.13, as provided by 35 IAC 217.756(e)(1)(A). These certificates and documents must be retained on site at the source for at least 5-years after they are superseded because of the submission of a new account certificate of representation changing the account representative.
- b. All emissions monitoring information, in accordance with 40 CFR 96, Subpart H, (provided that to the extent that 40 CFR 96, Subpart H, provides for a 3-year period for retaining records, the 3-year period shall apply), pursuant to 35 IAC 217.756(e)(1)(B).
- c. Copies of all reports, compliance certifications, and other submissions and all records made or required under the NO_x Trading Program or documents necessary to demonstrate compliance with requirements of the NO_x Trading Program, pursuant to 35 IAC 217.756(e)(1)(C).
- d. Copies of all documents used to complete a budget permit application and any other submission under the NO_x Trading Program, pursuant to 35 IAC 217.756(e)(1)(D).

6.3.7 Reporting Requirements for Budget EGU

- a. The account representative for this source and each budget EGU at this source shall submit to the Illinois EPA and USEPA the reports and compliance certifications required under the NO_x Trading Program, including those under 40 CFR 96, Subparts D and H, and 35 IAC 217.774, pursuant to 35 IAC 217.756(e)(2).
- b. Notwithstanding the provisions in Conditions 9.8 and 9.9 of this CAAPP permit, these submittals need only be signed by the designated representative, who may serve in place of the responsible official for this purpose, as provided by Section 39.5(1) of the Act, and submittals to the Illinois EPA need only be made to the Illinois EPA, Air Compliance Section.

6.3.8 Allocation of NO_x Allowances to Budget EGU

- a. As the budget EGU identified in Condition 6.3.2(a) are "existing" EGU listed in 35 IAC Part 217, Appendix F, these EGU are entitled to NO_x allowances as follows. (The portion of Appendix F that applies to the Permittee is provided in Condition 6.3.12.) The number of NO_x allowances actually allocated for the budget EGU shall be the number of NO_x allowances issued by USEPA pursuant to the allocation information reported to it by the Illinois EPA, which information may reflect adjustments to the overall allocations to budget EGU as provided for by 35 IAC 217.760(b) and (c):
- i. In 2004 through 2006 (the first three years of the NO_x Trading Program), an annual allocation of NO_x allowances as specified by 35 IAC 217.764(a)(1), i.e., the number of NO_x allowances listed in Appendix F, Column 7, and as provided by 35 IAC 217.768(j), a pro-rata share of any NO_x allowances remaining in the new source set-aside (NSSA) following the allocation of allowances to new budget EGU.
 - ii. In 2007, as provided by 35 IAC 217.764(b), an allocation of NO_x allowances as specified by 35 IAC 217.764(b)(1), i.e., the number of NO_x allowances listed in Appendix F, Column 8, and as provided by 35 IAC 217.764(b)(4), a pro-rata share of any NO_x allowances remaining after the allocation of allowances pursuant to 35 IAC 217.764(b)(2) to budget EGU that commence operation between January 1, 1995 and April 30, 2003.
 - iii. In 2008, as provided by 35 IAC 217.764(c), a specified allocation of NO_x allowances, i.e., the number of NO_x allowances listed in Appendix F, Column 8, and a pro-rata share of any NO_x allowances remaining after the allocation of allowances to budget EGU that commence operation between January 1, 1995 and April 30, 2004.
 - iv. In 2009, as provided by 35 IAC 217.764(d), a specified allocation of NO_x allowances, i.e., the number of NO_x allowances listed in Appendix F, Column 9, and a pro-rata share of any NO_x allowances remaining after the allocation of NO_x allowances to budget EGU that commence operation between January 1, 1995 and April 30, 2005, and as provided by 35 IAC 217.764(d)(6), a pro-rata share of any surplus of NO_x allowances in the NSSA after the allocation of NO_x allowances to new budget EGU pursuant to 35 IAC 217.764(d)(5).
 - v. In 2010, as provided by 35 IAC 217.764(e), a specified allocation of NO_x allowances, i.e., the number of NO_x allowances listed in Appendix F, Column 9, and a pro-

rata share of any NO_x allowances remaining after the allocation of NO_x allowances to budget EGU that commence operation between January 1, 1995 and April 30, 2006, and a pro-rata share of any surplus of NO_x allowances in the NSSA following the allocation of NO_x allowances to new budget EGU.

- vi. In 2011 and annually thereafter, as provided by 35 IAC 217.764(f), an allocation of NO_x allowances based on the prior operation of the EGU during previous control periods and a pro-rata share of any surplus of NO_x allowances in the NSSA following the allocation of NO_x allowances to new budget EGU.

Note: If the start of the NO_x Trading program is shifted because of a Court Decision, the years defining the different control periods would be considered to be adjusted accordingly, as provided by the Board note following 35 IAC 217.764.

- b. In accordance with 35 IAC 217.762, the theoretical number of NO_x allowances for the budget EGU listed in Condition 6.3.2(a), calculated as the product of the applicable NO_x emissions rate and heat input as follows, shall be the basis for determining the pro-rata share of NO_x allowances for the budget EGU and the allocation of NO_x allowances to the budget EGU based on their prior operation:
 - i. The applicable NO_x emission rate for the budget EGU shall be 0.15 lb/mmBtu, as specified by 35 IAC 217.762(a)(1).
 - ii. The applicable heat input (mmBtu/control period) shall be the average of the two highest heat inputs from the control periods four to six years prior to the year for which the allocation is being made, as provided by 35 IAC 217.762(b)(1).

6.3.9 Eligibility for NO_x Allowances from the New Source Set-Aside (NSSA)

- a. In 2004, 2005 and 2006, the budget EGU identified in Condition 6.3.2(a) will qualify as "new" budget EGU that commenced commercial operation prior to January 1, 2004. As such, the Permittee may be entitled to obtain NO_x allowances from the NSSA for these EGU without charge, as provided by 35 IAC 217.768.
- b. For the purpose of any such request for NO_x allowances, the NO_x emission rate shall be the permitted emission rate of these EGU as specified in Condition 6.3.8(b)(ii) and the projected heat input shall not exceed the average of the EGUs two highest seasonal heat inputs for the control

periods one to three years prior to the allocation year, pursuant to 35 IAC 217.768(e).

6.3.10 Eligibility for Early Reduction Credits (ERC)

The Permittee is eligible to request NO_x allowances for the budget EGU identified in Condition 6.3.2(a) for any early reductions in NO_x emissions, as provided by 35 IAC 217.770.

6.3.11 Budget Permit Required by the NO_x Trading Program

- a. For this source, this segment of the CAAPP Permit, i.e., Section 6.3, is the Budget Permit required by the NO_x Trading Program and is intended to contain federally enforceable conditions addressing all applicable NO_x Trading Program requirements. This Budget Permit shall be treated as a complete and segregable portion of the source's entire CAAPP permit, as provided by 35 IAC 217.758(a)(2).
- b. The Permittee and any other owner or operator of this source and each budget EGU at the source shall operate the budget EGU in compliance with this Budget Permit, pursuant to 35 IAC 217.756(b)(2).
- c. No provision of this Budget Permit or the associated application shall be construed as exempting or excluding the Permittee, or other owner or operator and, to the extent applicable, the account representative of a budget source or budget EGU from compliance with any other regulation or requirement promulgated under the CAA, the Act, the approved State Implementation Plan, or other federally enforceable permit, pursuant to 35 IAC 217.756(g).
- d. Upon recordation by USEPA under 40 CFR 96, Subpart F or G, or 35 IAC 217.782, every allocation, transfer, or deduction of an allowance to or from the budget units' compliance accounts or to or from the overdraft account for the budget source is deemed to amend automatically, and become part of, this budget permit, pursuant to 35 IAC 217.756(d)(8). This automatic amendment of this budget permit shall be deemed an operation of law and will not require any further review.
- e. No revision of this Budget Permit shall excuse any violation of the requirements of the NO_x Trading Program that occurs prior to the date that the revisions to this permit takes effect, pursuant to 35 IAC 217.756(f)(1).
- f. The Permittee, or other owner or operator of the source, shall reapply for a Budget Permit for the source as required by 35 IAC Part 217, Subpart W and Section 39.5 of the Act. For purposes of the NO_x Trading Program, the

application shall contain the information specified by 35 IAC 217.758(b) (2).

6.3.12 References

35 IAC Part 217 Appendix F - (provisions applicable to the Permittee)

Company Name/ I.D. No.	Generating Unit	EGU	NO _x Budget Allowances	80% of NO _x Budget Allowances	50% of NO _x Budget Allowances	2004, 2005, 2006 Allowances	2007, 2008 Allowances	2009, 2010 Allowances
1	2	3	4	5	6	7	8	9
119105AAA	Turbine	Turbine	4	3	2	4	3	2
119105AAA	Venice 1	Venice 1	10	8	5	9	8	5
119105AAA	Venice 2	Venice 2	13	10	7	12	10	6
119105AAA	Venice 3	Venice 3	6	5	3	6	5	3
119105AAA	Venice 4	Venice 4	7	6	4	7	5	4
119105AAA	Venice 5	Venice 5	15	12	8	14	12	7
119105AAA	Venice 6	Venice 6	16	13	8	15	13	8
119105AAA	Venice 7	Venice 7	2	2	1	2	1	1
119105AAA	Venice 8	Venice 8	2	2	1	2	2	1
Union Electric Total			75	60	38	71	59	37

7.0 UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS**7.1 Turbine CT02 (Subject to NSPS - 40 CFR Subpart GG)****7.1.1 Description**

The turbine is a process emission unit used to generate electricity. The turbine is a Pratt-Whitney FT-8 Twin Pac with a nominal capacity of 60 MWe with two separate stacks (S-11 and S-12). The turbine is natural gas fired with distillate oil as back up fuel. The turbine is equipped, operated, and maintained with water injection system to control NO_x emissions. The turbine was constructed pursuant to Construction Permit 01080020.

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

Emission Unit	Description	Date Constructed	Emission Control Equipment
CT02	Twin Pac Natural Gas Fired Turbine with Distillate Oil as Back-Up Fuel (Nominal Capacity 60 MWe)	2002	Water Injection

7.1.3 Applicable Provisions and Regulations

- a. The "affected turbines" for the purpose of these unit-specific conditions, are turbines described in Conditions 7.1.1 and 7.1.2.
- b. Pursuant to 35 IAC 212.123,
 - i. 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.
 - ii. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 1000 ft radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions

permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

- c. Pursuant to 35 IAC 214.301, 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 turbine is subject to the NSPS for Stationary Gas Turbines, 40 CFR 60 Subparts A and GG, because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour (10 mmBtu/hr), based on the lower heating value of the fuel fired and the affected turbine commenced construction, modification, or reconstruction after October 3, 1977. The Illinois EPA administers the NSPS for subject sources in Illinois pursuant to a delegation agreement with the USEPA.

i. Standard for Nitrogen Oxides:

Pursuant to 40 CFR 60.332(b), electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with the provisions of 40 CFR 60.332(a)(1). Pursuant to 40 CFR 60.332(a)(1), no owner or operator of an affected turbine shall cause to be discharged into the atmosphere from such gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

Where:

STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen calculated from the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NO _x percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04 (N)
$0.1 < N \leq 0.25$	$0.04 + 0.0067(N - 0.1)$
$N > 0.25$	0.005

Where:

N = The nitrogen content of the fuel (percent by weight) determined in accordance with Condition 7.1.8(b).

ii. Standard for Sulfur Dioxide:

Pursuant to 40 CFR 60.333, on and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of 40 CFR 60 Subpart GG shall comply with one or the other of the following conditions:

No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis, pursuant to 40 CFR 60.333(a).

No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw), pursuant to 40 CFR 60.333(b).

e. i. No owner or operator shall cause or allow the emissions of NO_x into the atmosphere from the affected turbine to exceed 0.25 lbs/mmBtu of actual heat input during each ozone control period from May 1 through September 30, based on a ozone control period average, for that unit [35 IAC 217.706(a)].

ii. Notwithstanding the above emission limitation of 35 IAC 217.706(a), the affected turbine subject to a more stringent NO_x emission limitation pursuant to any State or federal statute, including the Act, the Clean Air Act, or any regulations promulgated thereunder, shall comply with both the requirements of 35 IAC 217 Subpart V and that more stringent emission limitation [35 IAC 217.706(b)].

f. Startup Provisions

~~Subject to the following terms and conditions, the Permittee is authorized to operate the affected turbines in violation of the applicable standards in Condition 7.1.3(b) and the hourly limits in Condition 7.1.6 during startup. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its 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 each affected turbine(s) in accordance with written procedures prepared by the Permittee and maintained at the facility, in the control room for the each affected turbine(s), that are specifically developed to minimize emissions from startups and that include, at a minimum, the following measures:
 - A. The Permittee shall conduct startup of an affected turbine in accordance with the manufacturer's written instructions or other written instructions prepared by the source owner or operator and maintained on site.
 - B. The Permittee shall take the following measures to minimize emissions resulting from startups, the duration of startups, and minimize the frequency of startups:
 - I. Operating in accordance with the manufacturer's written operating and startup procedures, including a pre-check of the unit, or other written procedures developed and maintained by the source owner or operator so as to minimize the duration of startups and the emissions associated with startups. These procedures should allow for review of operating parameters of the unit during startup, or shutdown as necessary to make adjustments to reduce or eliminate excess emissions.
 - II. Maintaining units in accordance with written procedures developed and maintained by the source owner or operator so as to minimize the duration of startups and the frequency of startups. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in operation, and when the unit is shut down.

III. The procedures described above shall be reviewed at least annually to make necessary adjustments and shall be made available to the Illinois EPA upon request.

~~iv. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Condition 7.1.9(m) and 7.1.10(e).~~

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.

g. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of an affected turbine in violation of the applicable standards in Condition 7.1.3(b) and the hourly emission limits in Condition 7.1.6 in the event of a malfunction or breakdown of the affected turbines. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent risk of injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

i. This authorization only allows such continued operation as necessary to provide essential service or prevent risk of 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 as soon as practical repair the turbine, remove the affected turbine from service, or undertake other action so that excess emissions cease.

iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.1.9(n) and 7.1.10(f). 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. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the affected turbines out of service.

- iv. Following notification to the Illinois EPA 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, pursuant to 35 IAC 201.263.
- 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.

7.1.4 Non-Applicability of Regulations of Concern

- a. The affected turbines are not subject to the New Source Performance Standards (NSPS) for Stationary Combustion Turbines, 40 CFR Part 60, Subpart KKKK, because the affected turbines did not commence construction, modification, or reconstruction after February 18, 2005 pursuant to 40 CFR 60.4305(a), and are therefore subject to 40 CFR Part 60, Subpart GG for Stationary Gas Turbines.

Note: To qualify for this non-applicability, the Permittee has certified that the turbines have not been modified or reconstructed after February 18, 2005.

- b. The affected turbines are not subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR Part 63, Subpart YYYY, because the affected turbines are not located at a major source of HAP emissions, pursuant to 40 CFR 63.6085.
- c. The affected turbines are not subject to 35 IAC 212.321 or 212.322, due to the unique nature of such units, a process weight rate can not be set so that such rules can not reasonably be applied, pursuant to 35 IAC 212.323.

- d. The affected turbines are not subject to 35 IAC 217.141 or 35 IAC 216.121 because the affected turbines are not fuel combustion units, as defined by 35 IAC 211.2470.
- e. The affected turbines are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources:
 - i. For NO_x and SO₂, because:
 - A. The affected turbines are subject to a NSPS proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).
 - B. The affected turbines are subject to Acid Rain Program requirements, pursuant to 40 CFR 64.2(b)(1)(iii).
 - C. The affected turbines are subject to an emission limitation or standard for which this CAAPP permit specifies a continuous compliance determination method, pursuant to 40 CFR 64.2(b)(1)(vi).
 - ii. For PM, VOM, and CO because the affected turbines do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.1.5 Control Requirements and Work Practices

- a. i. At all times, including periods of startup, shutdown, and malfunction, the source owner or operator shall, to the extent practicable, maintain and operate any affected turbine in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or the USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source [40 CFR 60.11(d)].
- ii. The source owner or operator shall operate the affected turbines in accordance with written operating procedures that shall include at a minimum the following measures:
 - A. Review of operating parameters of the unit during startup or shutdown as necessary for the proper operation of the affected turbine with appropriate adjustments to reduce emissions.

- B. Implementation of inspection and repair procedures for a affected turbine prior to attempting startup following repeated trips.
- iii. The source owner or operator shall maintain the affected turbines in accordance with written procedures that shall include at a minimum the following measures:
- ~~A. Unless specified on a more frequent basis by manufacturer's written instructions, an inspection of emissions-related components shall be completed quarterly. Inspections shall be conducted in accordance with manufacturer's written instructions.~~
 - B. Repair and routine replacement of emissions-related components.
- iv. The above procedures may incorporate the manufacturer's written instruction for operation and maintenance of the affected turbines and associated control systems. The source owner or operator shall review these procedures at least every two years and shall revise or enhance them if necessary to be consistent with good air pollution control practice based on the actual operating experience and performance of the source.
- b. i. Natural gas and distillate fuel oil shall be the only fuels in the affected turbine.
- ii. Distillate fuel oil with sulfur content greater than 0.05 weight percent shall not be fired in the affected turbine.
- c. The affected turbine shall be equipped, operated, and maintained with water injection system to control NO_x emissions.
- d. i. The affected turbine unit, in total, shall not fire more than 726 million standard cubic feet of natural gas per year. Compliance with this limit shall be determined from a running total of 12 months of data.
- ii. The affected turbine unit, in total, shall not operate more than 1250 hours per year. Compliance with this limit shall be determined from a running total of 12 months of data from the sum of operating hours counted as set forth below:
- A. Each hour of operation for the affected turbine fired with fuel oil shall be counted as 1.6 hours.

- B. Each hour operation for the affected turbine operating in other modes than identified in Condition 7.1.5(d)(ii)(A) above shall be counted as 1 hour.

The above limitations of Conditions 7.1.5(b), 7.1.5(c) and 7.1.5(d) were established in Permit 01080020, to address applicability of 40 CFR 52.21, federal PSD rules and the state rules for Major Stationary Source Construction and Modification (MSSCAM), 35 IAC, Part 203. These limitations were intended to ensure that the affected turbine do not constitute a new major source pursuant to PSD or MSSCAM [T1].

7.1.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected turbines are subject to the following:

- a. Hourly emissions from each affected turbine stack shall not exceed the following limits, except during startup and malfunction or breakdown. Compliance with these limits shall be based on proper operation and emission testing (3-run average) in accordance with Condition 7.1.7 or emissions monitoring (24-hour average) in accordance with Condition 7.1.8 [T1/T1R].

<u>Fuel Type</u>	<u>NO_x² (Lb/Hr)</u>	<u>CO (Lb/Hr)</u>	<u>VOM (Lb/Hr)</u>	<u>SO₂ (Lb/Hr)</u>	<u>PM/PM₁₀ (Lb/Hr)</u>
Gas	31.2 (0.0512) ¹	55.4 (0.09) ¹	2.6 (0.004) ¹	0.37	3.0
Oil	49.9 (0.0922) ¹	21.9 (0.04) ¹	2.0 (0.004) ¹	26.9	12.0 ³

¹ lb/mmBtu, based on Higher Heating Value (HHV) of the fuel.

² This limit shall not apply when ice fog is deemed a hazard in accordance with 40 CFR 60.332(f).

³ The PM/PM₁₀ limitation during fuel oil firing revises the limitation in Permit 01080020. The source has requested that the Illinois EPA establish a revised limit in this permit, consistent with the information provided in the CAAPP application. Specifically, the PM/PM₁₀ limit is changed from 7.0 lb/hr to 12.0 lb/hr to address actual emission test data for full load operation. The original limit of 7.0 lb/hr was based on manufacturer's data that did not accurately represent the PM/PM₁₀ emissions from the affected turbine while firing fuel oil. The source has requested this revision and has addressed the

applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203. This limit continues to ensure that the affected turbine does not constitute major modification for PM/PM₁₀ pursuant to these rules.

- b. i. The total annual emissions from the affected turbine unit (total 2 turbines of the twin pack unit) shall not exceed the following limitations. Compliance with these limitations shall be determined from a running total of 12 months of data.

<u>Pollutant</u>	<u>Emissions (Tons/yr)</u>
NO _x	39
CO	80
PM/PM ₁₀	12
SO ₂	32
VOM	20

- ii. For purpose of determining compliance with the above annual limitations:
- A. Unless emission monitoring is performed for a pollutant, emissions during periods other than startup shall be determined from emission factors developed from testing required in the construction permit 01080020 (NO_x, CO, VOM and PM/PM₁₀) and analysis of fuel sulfur content or standard factors (SO₂).
- B. Unless an alternative factor is established for the pollutant or emissions monitoring is performed for the pollutant, emissions of CO and VOM during an hour that includes a startup shall be presumed to be 110 and 125 percent respectively of the limits in Condition 7.1.6(a), i.e. CO and VOM emissions during an hour with a startup shall be presumed to be 61 lb/hr and 3.25 lb/hr, respectively, while firing on natural gas, and 24.1 lb/hr and 2.5 lb/hr, respectively, while firing on fuel oil. These presumptions are based on data in the application describing maximum emissions during startup of the affected turbine. Any alternative factor for emissions during startup of the affected turbine shall be based on representative emission testing conducted with USEPA Reference Test Methods identified in the construction permit 01080020.
- C. The establishment of the above procedures for determining compliance with the annual emission

limits shall not shield the Permittee from responsibility to account for all emissions from the source, including emissions during startup and malfunction, as other credible information may demonstrate that the above procedures do not adequately account for the actual emissions of the source.

The above limitations of Conditions 7.1.6(a) and 7.1.6(b) were established in Permit 01080020, to address applicability of 40 CFR 52.21, federal PSD rules and the state rules for Major Stationary Source Construction and Modification (MSSCAM), 35 IAC, Part 203. These limitations were intended to ensure that the affected turbine do not constitute a new major source pursuant to PSD or MSSCAM [T1].

7.1.7 Testing Requirements

a. The nitrogen oxides (NO_x) emissions, and the oxygen (O₂) concentration and opacity of exhaust shall be measured for the affected turbines at the source owner or operator's expense by an independent testing service approved by the Illinois EPA as follows to determine compliance with applicable emission limits:

- i. Within 120 days after a written request from the Illinois EPA, for such pollutants listed above as specified by the request.
- ii. Any extension to these time periods that may be provided at its discretion by the Illinois EPA shall not alter the source owner or operator's obligation to perform emission testing for purposes of the NSPS in a timely manner as specified by 40 CFR 60.8.

b. The following methods and procedures shall be used for testing of emissions:

i. The USEPA Reference Test Methods shall be used including the following:

Opacity	USEPA Method 9
Nitrogen Oxides	USEPA Method 20

ii. A. Pursuant to 40 CFR 60.335(b), the owner or operator shall determine compliance with the applicable nitrogen oxides emission limitation in 40 CFR 60.332 and shall meet the performance test requirements of 40 CFR 60.8 as follows:

For each run of the performance test, the mean nitrogen oxides emission concentration (NO_{xo}) corrected to 15 percent O₂ shall be corrected to ISO standard conditions using the following

equation. Notwithstanding this requirement, use of the ISO correction equation is optional for: Lean premix stationary combustion turbines; units used in association with heat recovery steam generators (HRSG) equipped with duct burners; and units equipped with add-on emission control devices, pursuant to 40 CFR 60.335(b)(1):

$$NO_x = (NO_{x0}) (P_r/P_o) 0.5 e^{19(H_o - 0.00633)} \\ (288^\circ K/T_a)^{1.53}$$

Where:

NO_x = emission concentration of NO_x at 15 percent O_2 and ISO standard ambient conditions, ppm by volume, dry basis

NO_{x0} = mean observed NO_x concentration, ppm by volume, dry basis, at 15 percent O_2

P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg

P_o = observed combustor inlet absolute pressure at test, mm Hg

H_o = observed humidity of ambient air, g $H_2 O$ /g air

e = transcendental constant, 2.718

T_a = ambient temperature, °K

The 3-run performance test required by 40 CFR 60.8 must be performed within ± 5 percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 percent of peak load, or at the highest achievable load point if 90-to-100 percent of peak load cannot be physically achieved in practice. If the turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel. Notwithstanding these requirements, performance testing is not required for any emergency fuel (as defined in 40 CFR 60.331), pursuant to 40 CFR 60.335(b)(2).

If water or steam injection is used to control NO_x with no additional post-combustion NO_x

control and the owner or operator chooses to monitor the steam or water to fuel ratio in accordance with 40 CFR 60.334(a), then that monitoring system must be operated concurrently with each EPA Method 20, ASTM D6522-00 (incorporated by reference, see 40 CFR 60.17), or EPA Method 7E run and shall be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable 40 CFR 60.332 NO_x emission limit, pursuant to 40 CFR 60.335(b)(4).

If the owner or operator elects to install a CEMS, the performance evaluation of the CEMS may either be conducted separately (as described in 40 CFR 60.335(b)(7)) or as part of the initial performance test of the affected unit, pursuant to 40 CFR 60.335(b)(6).

Pursuant to 40 CFR 60.335(b)(7), if the owner or operator elects to install and certify a NO_x CEMS under 40 CFR 60.334(e), then the initial performance test required under 40 CFR 60.8 may be done in the following alternative manner:

Perform a minimum of 9 reference method runs, with a minimum time per run of 21 minutes, at a single load level, between 90 and 100 percent of peak (or the highest physically achievable) load, pursuant to 40 CFR 60.335(b)(7)(i).

Use the test data both to demonstrate compliance with the applicable NO_x emission limit under 40 CFR 60.332 and to provide the required reference method data for the RATA of the CEMS described under 40 CFR 60.334(b), pursuant to 40 CFR 60.335(b)(7)(ii).

The requirement to test at three additional load levels is waived, pursuant to 40 CFR 60.335(b)(7)(iii).

If the owner or operator elects under 40 CFR 60.334(f) to monitor combustion parameters or parameters indicative of proper operation of NO_x emission controls, the appropriate parameters shall be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in 40 CFR 60.334(g), pursuant to 40 CFR 60.335(b)(8).

Pursuant to 40 CFR 60.335(b)(10), if the owner or operator is required under 40 CFR 60.334(i)(1) or (3) to periodically determine the sulfur content of the fuel combusted in the turbine, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using:

For gaseous fuels, ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01 (all of which are incorporated by reference, see 40 CFR 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Administrator, pursuant to 40 CFR 60.335(b)(10)(ii).

The fuel analyses required under 40 CFR 60.335(b)(9) and (b)(10) may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency, pursuant to 40 CFR 60.335(b)(11).

- B. Pursuant to 40 CFR 60.335(c), the owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

Instead of using the equation in CFR 60.335(b)(1), manufacturers may develop ambient condition correction factors to adjust the nitrogen oxides emission level measured by the performance test as provided in 40 CFR 60.8 to ISO standard day conditions, pursuant to 40 CFR 60.335(c)(1).

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:
- i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating

parameters for the turbine will be tracked and recorded.

- iii. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations; the test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods. The source owner or operator may also propose a plan for testing across the normal operating range of the affected turbines.
- d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Illinois EPA may, at its discretion, accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the testing.
- e. The Final Report for these tests shall be submitted to the Illinois EPA within 60 days after the date of the tests. The Final Report shall include as a minimum:
 - i. A summary of results.
 - ii. General information.
 - iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment and test schedule.
 - iv. Detailed description of test conditions, including:
 - A. Fuel consumption (standard ft³).
 - B. Firing rate (million Btu/hr).
 - C. Turbine/Generator output rate (MW).
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
- f. i. Upon written request by the Illinois EPA, the source owner or operator shall have the opacity of the exhaust from the affected turbine(s) tested during representative operating conditions as determined by

a qualified observer in accordance with USEPA Test Method 9, as further specified below, pursuant to Section 39.5(7)(d) of the Act.

- ii. Such testing shall be conducted for specific turbine(s) within 90 calendar days of the request, or on the date turbine(s) next operates, or on the date agreed upon by the Illinois EPA, whichever is later.
- iii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 10.0 percent.
- iv. The source owner or operator shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
- v. The source owner or operator shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- vi. The source owner or operator shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.
- vii. The source owner or operator shall submit a written report for this testing within 30 days of the date of testing. This report shall include:
 - A. Date and time of testing.
 - B. Name and employer of qualified observer.
 - C. Copy of current certification.
 - D. Description of observation conditions.
 - E. Description of turbine operating conditions.
 - F. Raw data.
 - G. Opacity determinations.
 - H. Conclusions.

7.1.8 Monitoring Requirements

- a. i. If an affected turbine is routinely operated or exercised to confirm that the turbine will operate when needed, the operation and opacity of the affected turbine shall be formally observed by operating personnel for the affected turbine or a member of source owner or operator's environmental staff on a regular basis to assure that the affected turbine is operating properly, which observations shall be made at least every six months.
- ii. If an affected turbine is not routinely operated or exercised, i.e., the time interval between operation of an affected turbine is typically greater than six months, the operation and opacity of the affected turbine shall be formally observed as provided above each time the source owner or operator carries out a scheduled exercise of the affected turbine.

~~iii. The source owner or operator shall also conduct formal observations of operation and opacity of an affected turbine upon written request by the Illinois EPA. With the agreement of the Illinois EPA, the source owner or operator may schedule these observations to take place during periods when it would otherwise be operating the affected turbine.~~

Note: The formal observation required above is not intended to be a USEPA Test Method 9 opacity test, nor does the observation require a USEPA Test Method 9 certified observer. It is intended to be performed by personnel familiar with the operation of the affected turbine who would be able to make a determination based from the observed opacity as to whether or not the affected turbine was running properly, and subsequently initiate a corrective action if necessary.

- b. The affected turbine shall comply with the applicable monitoring requirements of 40 CFR 60.334(h), below. Monitoring of fuel nitrogen content shall not be required while the facility does not claim an allowance for fuel-bound nitrogen. Monitoring for sulfur content in fuel is not required while natural gas is the only fuel fired in the affected turbine and the requirements of 40 CFR 60.334(h)3(i) or (ii) are met.

Pursuant to 40 CFR 60.334(h), the owner or operator of any stationary gas turbine subject to the provisions of this subpart:

Shall monitor the total sulfur content of the fuel being fired in the turbine, except as provided in 40 CFR 60.334(h) (3). The sulfur content of the fuel must be

determined using total sulfur methods described in 40 CFR 60.335(b)(10). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084-82, 94, D5504-01, D6228-98, or Gas Processors Association Standard 2377-86 (all of which are incorporated by reference-see 40 CFR 60.17), which measure the major sulfur compounds may be used, pursuant to 40 CFR 60.334(h)(1); and

Shall monitor the nitrogen content of the fuel combusted in the turbine, if the owner or operator claims an allowance for fuel bound nitrogen (i.e., if an F-value greater than zero is being or will be used by the owner or operator to calculate STD in 40 CFR 60.332). The nitrogen content of the fuel shall be determined using methods described in 40 CFR 60.335(b)(9) or an approved alternative, pursuant to 40 CFR 60.334(h)(2).

Pursuant to 40 CFR 60.334(h)(3), notwithstanding the provisions of 40 CFR 60.335(h)(1), the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration:

The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less, pursuant to 40 CFR 60.334(3)(i); or

Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required, pursuant to 40 CFR 60.334(h)(3)(ii).

- c. Should the operation of the affected turbine exceed the limitations of 7.1.6(a) relating to the definition of a gas-fired peaking unit in 40 CFR 75, the source owner or operator shall install the appropriate Continuous Monitoring System(s) on the affected turbine by December 31 of the following calendar year, as defined in 40 CFR 75, in order to remain in compliance with the provisions of the Acid Rain Program.
- d. i. The owner or operator of an affected turbine subject to 35 IAC 217 Subpart V (Condition 7.1.3(e)) shall install, calibrate, maintain and operate continuous

emissions monitoring systems (CEMS) for NO_x that meet the requirements of 40 CFR 75, Subpart B [35 IAC 217.710(a)].

ii. Notwithstanding 35 IAC 217.710(a) above, the owner or operator of a gas-fired peaking unit or oil-fired peaking unit as defined in 40 CFR 72.2 may determine NO_x emissions in accordance with the emissions estimation protocol of 40 CFR 75, Subpart E [35 IAC 217.710(b)].

iii. Notwithstanding 35 IAC 217.710(a) above, the owner or operator of a combustion turbine that operates less than 350 hour per ozone control period may determine the heat input and NO_x emissions of the turbine as follows [35 IAC 217.710(c)]:

A. Heat input shall be determined from the metered fuel usage to the turbine or the calculated heat input determined as the product of the turbine's maximum hourly heat input and hours of operation as recorded by operating instrumentation on the turbine [35 IAC 217.710(c)(1)].

B. NO_x emissions shall be determined as the product of the heat input, as determined above, and the appropriate default NO_x emission factors below [35 IAC 217.710(c)(2)]:

0.7 lbs/mmBtu - Natural gas
1.2 lbs/mmBtu - Fuel oil

e. i. The affected turbine shall be equipped, operated, and maintained with a continuous monitoring system to monitor and record the fuel consumption being fired.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the source owner or operator shall maintain records of the following items for the affected turbine(s) to demonstrate compliance with Conditions 5.6.1, 7.1.3, 7.1.5, and 7.1.6, pursuant to Section 39.5(7)(b) of the Act:

a. The owner or operator of an affected turbine subject to the requirements of 35 IAC 217 Subpart V (Condition 7.1.3(e)) shall:

i. Comply with the recordkeeping and reporting requirements of 40 CFR 75 applicable to NO_x emissions during the ozone control period, including, but not limited to, 40 CFR 75.54(b) and (d) [35 IAC 217.712(a)].

- ii. Notwithstanding 35 IAC 217.712(a) above, the owner or operator of a combustion turbine for which heat input and NO_x emissions are determined pursuant to 35 IAC 217.710(c) (Condition 7.1.8(d)(iii)) shall comply with the following recordkeeping and reporting requirements [35 IAC 217.712(b)]:
 - A. Maintain records of the heat input and NO_x emissions of the turbine as determined in accordance with 35 IAC 217.710(c), and records of metered fuel use or operating hours used to determine heat input [35 IAC 217.712(b)(1)].
- b. The source owner or operator shall maintain records of the following items:
 - i. The sulfur content of the natural gas used to fire the turbines as determined in accordance with Condition 7.1.8(b).
 - ii. A copy of the Final Report(s) for emission testing conducted pursuant to Condition 7.1.7.
 - iii. Copies of opacity determinations taken for the source by qualified observer(s) when using USEPA Method 9.
 - iv. Records documenting its periodic review of its operating procedures as required by Condition 7.1.5(a).
 - v. Information for the formal observations of opacity conducted pursuant to Condition 7.1.8(a). For each occasion on which observations are made, these records shall include the date, time, identity of the observer, a description of the various observations that were made, whether or not the affected engine was running properly, and whether or not corrective action is necessary and was subsequently initiated.
- c. A maintenance and repair log for the affected turbine, listing each activity performed with date.
- d. Reserved for Future Use
- e. Fuel consumption for the affected turbine, scf/month and scf/year.
- f. Reserved for Future Use
- g. Operating hours for the affected turbine, hr/month and hr/year.

- h. Heat content of the fuel being fired in the affected turbine.
- i. Emissions of each pollutant from the affected turbine, including emissions from startups, with supporting calculations including documentation on the validity of the emission factors used, ton/month and ton/year.
- j. The source owner or operator shall maintain records that identify:
 - i. Any periods during which a continuous monitoring system was not operational, with explanation.
 - ii. Any period when the affected turbine was in operation during which ice fog was deemed to be a traffic hazard, the ambient conditions existing during the periods, the date and time the water injection system was deactivated, and the date and time the system was reactivated.
 - iii. Any day in which emission and/or opacity exceeded an applicable standard or limit.
- k. The source owner or operator shall keep records of good operating practices for each turbine.
- ~~l. The source owner or operator shall maintain the following records related to each shutdown of the turbines:
 - i. The following information for each shutdown of a turbine:
 - A. Date and time of shutdown.
 - B. A description of the shutdown, if written operating procedures are not followed during the shutdown or significant problems occur during the shutdown, including detailed explanation.
 - ii. The following information for the turbines when above normal opacity has been observed by source personnel:
 - A. Name of observer, position and reason for being at site.
 - B. Date and duration of above normal opacity, including affected turbine, start time and time normal operation was achieved.
 - C. If normal operation was not achieved within 30 minutes, an explanation why startup could not be achieved within this time.~~

- ~~D. A detailed description of the startup, including reason for operation.~~
- ~~E. An explanation why established startup procedures could not be performed, if not performed.~~
- ~~F. The nature of opacity following the end of startup or 30 minutes of operation, whichever occurs first, and duration of operation until achievement of normal opacity or shutdown.~~
- ~~G. Whether an exceedance of Condition 7.1.3(b), i.e., 30 percent opacity, may have occurred during startup, with explanation if qualified observer was on site.~~

~~m. Records for Startup~~

~~The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected turbine subject to Condition 7.1.3(b), which at a minimum shall include:~~

- ~~i. The following information for each startup of the affected turbine(s):~~
 - ~~A. Date and duration of the startup, i.e., start time and time normal operation achieved.~~
 - ~~B. If normal operation was not achieved within 30 minutes, an explanation why startup could not be achieved within this time.~~
 - ~~C. A detailed description of the startup, including reason for operation and whether the procedures 7.1.3(f) were performed.~~
 - ~~D. An explanation why the procedures of 7.1.3(f) and other established startup procedures could not be performed, if not performed.~~
 - ~~E. Whether exceedance of Condition 5.3.2 and 7.1.3(b) may have occurred during startup. If an exceedance may have occurred, an explanation of the nature of opacity, i.e., severity and duration, during the startup and the nature of opacity at the conclusion of startup.~~
 - ~~F. Whether operating personnel for the turbines or air environmental staff are on site during startup.~~

~~ii. A maintenance and repair log for each affected turbine, listing each activity performed with date.~~

n. Records for Malfunctions and Breakdowns

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected turbine subject to Condition 7.1.3(g) during malfunctions and breakdown, which as a minimum, shall include:

- i. Date and duration of malfunction or breakdown.
- ii. A detailed explanation of the malfunction or breakdown.
- iii. An explanation why the affected turbine continued to operate in accordance with Condition 7.1.3(g).
- iv. The measures used to reduce the quantity of emissions and the duration of the event.
- v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.
- vi. The amount of release above typical emissions during malfunction/breakdown.

7.1.10 Reporting Requirements

a. Reporting of Deviations

The source owner or operator shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected turbine with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- i. Emissions from the affected turbine in excess of the limits specified in Conditions 7.1.3 and 7.1.6 within 30 days of such occurrence.
 - ii. Operation of the affected turbine in excess of the limits specified in Conditions 7.1.5 and 7.1.6 within 30 days of such occurrence.
- b. In conjunction with the Annual Emission Report required by 35 IAC Part 254, the source owner or operator shall provide the operating hours for each affected turbine, the total number of startups, the total fuel consumption during the preceding calendar year.
- c. Pursuant to 40 CFR 60.7(c) and 40 CFR 60.334(j), a report shall be submitted on a semi-annual basis. This report

shall contain information on excess emissions and monitoring system downtime reports in accordance with 40 CFR 60.7(c) and 40 CFR 60.334(j).

- d. i. Annually report the heat input and NO_x emissions of the turbine as determined in accordance with 35 IAC 217.710(c) (Condition 7.1.8(c)(iii)), for each ozone control period, by November 30 of each year [35 IAC 217.712(b)(2)].
- ii. Pursuant to 35 IAC 217.712(c) and (d), no later than November 30 of each year, the source owner or operator shall submit a report to the Illinois EPA that demonstrates that the affected turbine has complied with Condition 7.1.3(e). These reports shall be accompanied by a certification statement signed by a responsible official for the source owner or operator as specified by 35 IAC 217.712(c).

e. ~~Reporting of Startups~~

~~The source owner or operator shall submit semi-annual startup reports to the Illinois EPA pursuant to Sections 39.5(7)(a) and (f) of the Act. These reports shall be submitted along with the semi-annual reports required by Condition 7.1.10(c) and shall include the following information for startups of the affected turbine during the reporting period:~~

- ~~i. A list of the startups of the affected turbine, including the date, duration and description of each startup, accompanied by a copy of the records pursuant to Condition 7.1.9(i) for each startup for which such records were required.~~
- ~~ii. If there have been no startups of an affected turbine during the reporting period, this shall be stated in the report.~~

f. Reporting of Malfunctions and Breakdowns

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected turbine subject to Condition 7.1.3(g) during malfunction or breakdown:

- i. 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 three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.

- B. Upon achievement of compliance, the Permittee shall give a written follow-up notice within 15 days to the Illinois EPA, Air Compliance Unit and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the affected turbines was necessary, 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 or when the affected turbine was taken out of service.
 - C. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, 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 or the affected turbine will be taken out of service.
- ii. In accordance with the due dates in Condition 8.6.1, the Permittee shall submit semi-annual malfunction and breakdown reports to the Illinois EPA pursuant to Sections 39.5(7)(a) and (f) of the Act. These reports may be submitted along with other semi-annual reports and shall include the following information for malfunctions and breakdowns of the affected turbine during the reporting period:
- A. A listing of malfunctions and breakdowns, in chronological order, that includes:
 - I. The date, time, and duration of each incident.
 - II. The identity of the affected operation(s) involved in the incident.
 - B. Dates of the notices and reports of Conditions 7.1.10(f)(i).
 - C. Any supplement information the Permittee wishes to provide to the notices and reports of Conditions 7.1.10(f)(i).

- D. The aggregate duration of all incidents during the reporting period.
- E. If there have been no such incidents during the reporting period, this shall be stated in the report.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected turbines.

7.1.12 Compliance Procedures

- a. Compliance with the PM emission limitations of Conditions 7.1.3(b) is addressed by the requirements of Condition 7.1.5, and the records required in Condition 7.1.9, and the reports required in Condition 7.1.10.
- b. Compliance with the SO₂ emission limitations of Conditions 7.1.3(c) is addressed by the requirements of Condition 7.1.5, and the records required in Condition 7.1.9, and the reports required in Condition 7.1.10.
- c.
 - i. Compliance with the NO_x emission limitations of Conditions 7.1.3(d)(i) is addressed by the requirements of Condition 7.1.5, the testing requirements of 7.1.7, the monitoring requirements of 7.1.8, and the records required in Condition 7.1.9, and the reports required in Condition 7.1.10(a).
 - ii. Compliance with the SO₂ emission limitations of Conditions 7.1.3(d)(ii) is addressed by the requirements of Condition 7.1.5, the records required in Condition 7.1.9, and the reports required in Condition 7.1.10(a).
- d.
 - i. Compliance with the NO_x emission limitations of Conditions 7.1.3(e) is addressed by the requirements of Condition 7.1.5, the testing requirements of 7.1.7, the monitoring requirements of 7.1.8, the records required in Condition 7.1.9, and the reports required in Condition 7.1.10(a).
 - ii. Notwithstanding 35 IAC 217.710(a), Condition 7.1.8(d), the owner or operator of a gas-fired peaking unit or oil-fired peaking unit as defined in 40 CFR 72.2 may determine NO_x emissions in accordance with the emissions estimation protocol of 40 CFR 75, Subpart E [35 IAC 217.710(b)].
 - iii. Notwithstanding 35 IAC 217.710(a), Condition 7.1.8(d), the owner or operator of a combustion turbine that operates less than 350 hour per ozone control period may determine the heat input and NO_x

emissions of the turbine as follows [35 IAC 217.710(c)]:

A. Heat input shall be determined from the metered fuel usage to the turbine or the calculated heat input determined as the product of the turbine's maximum hourly heat input and hours of operation as recorded by operating instrumentation on the turbine [35 IAC 217.710(c)(1)].

B. NO_x emissions shall be determined as the product of the heat input, as determined above, and the appropriate default NO_x emission factors below [35 IAC 217.710(c)(2)]:

0.7 lbs/mmBtu - Natural gas

1.2 lbs/mmBtu - Fuel oil

~~e. Compliance with the emission limits in Conditions 5.6 and 7.1.6 is addressed by the records and reports required in Conditions 7.1.9 and 7.1.10, the continuous NO_x monitoring requirements in Condition 7.1.8 or from emission factors developed from the most recent approved stack test in accordance with Condition 7.1.7 (NO_x), standard emission factors (CO, VOM and PM/PM₁₀) and analysis of fuel sulfur content or standard factors (SO₂).~~

7.2 Turbine CT01

7.2.1 Description

The turbine is a process emission unit used to provide electricity during peak power demands, emergency need, and various on-site needs. The turbine is powered by distillate fuel oil at a ratio of two parts Grade No. 2 to one part Grade No. 1.

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
CT01	Stationary Gas Turbine That Drives a Generator (Nominal Capacity 518 mmBtu/hr)	1967	None

7.2.3 Applicable Provisions and Regulations

- a. The "affected turbines" for the purpose of these unit-specific conditions, are turbines described in Conditions 7.2.1 and 7.2.2.
- b. Pursuant to 35 IAC 212.123,
 - i. 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.
 - ii. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 1000 ft radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
- c. Pursuant to 35 IAC 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.

- d. i. No owner or operator shall cause or allow the emissions of NO_x into the atmosphere from the affected turbine to exceed 0.25 lbs/mmBtu of actual heat input during each ozone control period from May 1 through September 30, based on a ozone control period average, for that unit [35 IAC 217.706(a)].
 - ii. Notwithstanding the above emission limitation of 35 IAC 217.706(a), the affected turbine subject to a more stringent NO_x emission limitation pursuant to any State or federal statute, including the Act, the Clean Air Act, or any regulations promulgated thereunder, shall comply with both the requirements of 35 IAC 217 Subpart V and that more stringent emission limitation [35 IAC 217.706(b)].
- e. Startup Provisions

~~Subject to the following terms and conditions, the Permittee is authorized to operate the affected turbines in violation of the applicable standards in Condition 7.2.3(b) during startup. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its 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 each affected turbine(s) in accordance with written procedures prepared by the Permittee and maintained at the facility, in the control room for the each affected turbine(s), that are specifically developed to minimize emissions from startups and that include, at a minimum, the following measures:
 - A. The Permittee shall conduct startup of an affected turbine in accordance with the manufacturer's written instructions or other written instructions prepared by the source owner or operator and maintained on site.
 - B. The Permittee shall take the following measures to minimize emissions resulting from startups, the duration of startups, and minimize the frequency of startups:

- I. Operating in accordance with the manufacturer's written operating and startup procedures, including a pre-check of the unit, or other written procedures developed and maintained by the source owner or operator so as to minimize the duration of startups and the emissions associated with startups. These procedures should allow for review of operating parameters of the unit during startup, or shutdown as necessary to make adjustments to reduce or eliminate excess emissions.
 - II. Maintaining units in accordance with written procedures developed and maintained by the source owner or operator so as to minimize the duration of startups and the frequency of startups. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in operation, and when the unit is shut down.
 - III. The procedures described above shall be reviewed at least annually to make necessary adjustments and shall be made available to the Illinois EPA upon request.
 - ~~iv. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Condition 7.2.9(m) and 7.2.10(d).~~
 - 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.
- f. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of an affected turbine in violation of the applicable standards in Condition 7.2.3(b) in the event of a malfunction or breakdown of the affected turbine. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued

operation would be required to provide essential service or to prevent risk of injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

- i. This authorization only allows such continued operation as necessary to provide essential service or prevent risk of 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 as soon as practical repair the turbine, remove the affected turbine from service, or undertake other action so that excess emissions cease.
- iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.2.9(n) and 7.2.10(e). 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. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the affected turbines out of service.
- iv. Following notification to the Illinois EPA 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, pursuant to 35 IAC 201.263.
- 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.

7.2.4 Non-Applicability of Regulations of Concern

- a. The affected turbines are not subject to the New Source Performance Standards (NSPS) for Stationary Combustion Turbines, 40 CFR Part 60, Subpart KKKK, because the affected turbines did not commence construction, modification, or reconstruction after February 18, 2005 pursuant to 40 CFR 60.4305(a), and are therefore subject to 40 CFR Part 60, Subpart GG for Stationary Gas Turbines.

Note: To qualify for this non-applicability, the Permittee has certified that the turbines have not been modified or reconstructed after February 18, 2005.

- b. The affected turbines are not subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR Part 63, Subpart YYYY, because the affected turbines are not located at a major source of HAP emissions, pursuant to 40 CFR 63.6085.
- c. The affected turbines are not subject to 35 IAC 212.321 or 212.322, due to the unique nature of such units, a process weight rate can not be set so that such rules can not reasonably be applied, pursuant to 35 IAC 212.323.
- d. The affected turbines are not subject to 35 IAC 217.141 or 35 IAC 216.121 because the affected turbines are not fuel combustion units, as defined by 35 IAC 211.2470.
- e. The affected turbines are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources:
 - i. For NO_x and SO₂, because:
 - A. The affected turbines are subject to a NSPS proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).
 - B. The affected turbines are subject to Acid Rain Program requirements, pursuant to 40 CFR 64.2(b)(1)(iii).
 - C. The affected turbines are subject to an emission limitation or standard for which this CAAPP permit specifies a continuous compliance determination method, pursuant to 40 CFR 64.2(b)(1)(vi).
 - ii. For PM, VOM, and CO because the affected turbines do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.2.5 Control Requirements and Work Practices

- a. i. At all times, including periods of startup, shutdown, and malfunction, the source owner or operator shall, to the extent practicable, maintain and operate any affected turbine in a manner consistent with good air pollution control practice for minimizing emissions.
 - ii. The source owner or operator shall operate the affected turbines in accordance with written operating procedures that shall include at a minimum the following measures:
 - A. Review of operating parameters of the unit during startup or shutdown as necessary for the proper operation of the affected turbine with appropriate adjustments to reduce emissions.
 - B. Implementation of inspection and repair procedures for a affected turbine prior to attempting startup following repeated trips.
 - iii. The source owner or operator shall maintain the affected turbines in accordance with written procedures that shall include at a minimum the following measures:
 - A. ~~Unless specified on a more frequent basis by manufacturer's written instructions, an inspection of emissions-related components shall be completed quarterly. Inspections shall be conducted in accordance with manufacturer's written instructions.~~
 - B. Repair and routine replacement of emissions-related components.
 - iv. The above procedures may incorporate the manufacturer's written instruction for operation and maintenance of the affected turbines and associated control systems. The source owner or operator shall review these procedures at least every two years and shall revise or enhance them if necessary to be consistent with good air pollution control practice based on the actual operating experience and performance of the source.
- b. Distillate fuel oil shall be the only fuel fired in the affected turbine.

7.2.6 Production and Emission Limitations

Production and emission limitations are not set for the affected turbine. However, there are source-wide production and emission limitations set forth in Condition 5.6.

7.2.7 Testing Requirements

a. The nitrogen oxides (NO_x) emissions, and the oxygen (O₂) concentration and opacity of exhaust shall be measured for the affected turbines at the source owner or operator's expense by an independent testing service approved by the Illinois EPA as follows to determine compliance with applicable emission limits:

- i. Within 120 days after a written request from the Illinois EPA, for such pollutants listed above as specified by the request.
- ii. Any extension to these time periods that may be provided at its discretion by the Illinois EPA shall not alter the source owner or operator's obligation to perform emission testing for purposes of the NSPS in a timely manner as specified by 40 CFR 60.8.

b. The following methods and procedures shall be used for testing of emissions:

i. The USEPA Reference Test Methods shall be used including the following:

Opacity	USEPA Method 9
Nitrogen Oxides	USEPA Method 20

- ii. A. Pursuant to 40 CFR 60.335(b), the owner or operator shall determine compliance with the applicable nitrogen oxides emission limitation in 40 CFR 60.332 and shall meet the performance test requirements of 40 CFR 60.8 as follows:

For each run of the performance test, the mean nitrogen oxides emission concentration (NO_{xo}) corrected to 15 percent O₂ shall be corrected to ISO standard conditions using the following equation. Notwithstanding this requirement, use of the ISO correction equation is optional for: Lean premix stationary combustion turbines; units used in association with heat recovery steam generators (HRSG) equipped with duct burners; and units equipped with add-on emission control devices, pursuant to 40 CFR 60.335(b)(1):

$$\text{NO}_x = (\text{NO}_{x_0}) (P_r/P_0)^{0.5} e^{19(H_0-0.00633)} \\ (288^\circ\text{K}/T_a)^{1.53}$$

Where:

NO_x = emission concentration of NO_x at 15 percent O_2 and ISO standard ambient conditions, ppm by volume, dry basis

NO_{x_0} = mean observed NO_x concentration, ppm by volume, dry basis, at 15 percent O_2

P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg

P_0 = observed combustor inlet absolute pressure at test, mm Hg

H_0 = observed humidity of ambient air, g H_2O /g air

e = transcendental constant, 2.718

T_a = ambient temperature, $^\circ\text{K}$

The 3-run performance test required by 40 CFR 60.8 must be performed within ± 5 percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 percent of peak load, or at the highest achievable load point if 90-to-100 percent of peak load cannot be physically achieved in practice. If the turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel. Notwithstanding these requirements, performance testing is not required for any emergency fuel (as defined in 40 CFR 60.331), pursuant to 40 CFR 60.335(b)(2).

If water or steam injection is used to control NO_x with no additional post-combustion NO_x control and the owner or operator chooses to monitor the steam or water to fuel ratio in accordance with 40 CFR 60.334(a), then that monitoring system must be operated concurrently with each EPA Method 20, ASTM D6522-00 (incorporated by reference, see 40 CFR 60.17), or EPA Method 7E run and shall be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with

the applicable 40 CFR 60.332 NO_x emission limit, pursuant to 40 CFR 60.335(b)(4).

If the owner or operator elects to install a CEMS, the performance evaluation of the CEMS may either be conducted separately (as described in 40 CFR 60.335(b)(7)) or as part of the initial performance test of the affected unit, pursuant to 40 CFR 60.335(b)(6).

Pursuant to 40 CFR 60.335(b)(7), if the owner or operator elects to install and certify a NO_x CEMS under 40 CFR 60.334(e), then the initial performance test required under 40 CFR 60.8 may be done in the following alternative manner:

Perform a minimum of 9 reference method runs, with a minimum time per run of 21 minutes, at a single load level, between 90 and 100 percent of peak (or the highest physically achievable) load, pursuant to 40 CFR 60.335(b)(7)(i).

Use the test data both to demonstrate compliance with the applicable NO_x emission limit under 40 CFR 60.332 and to provide the required reference method data for the RATA of the CEMS described under 40 CFR 60.334(b), pursuant to 40 CFR 60.335(b)(7)(ii).

The requirement to test at three additional load levels is waived, pursuant to 40 CFR 60.335(b)(7)(iii).

If the owner or operator elects under 40 CFR 60.334(f) to monitor combustion parameters or parameters indicative of proper operation of NO_x emission controls, the appropriate parameters shall be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in 40 CFR 60.334(g), pursuant to 40 CFR 60.335(b)(8).

Pursuant to 40 CFR 60.335(b)(10), if the owner or operator is required under 40 CFR 60.334(i)(1) or (3) to periodically determine the sulfur content of the fuel combusted in the turbine, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using:

For gaseous fuels, ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01 (all of which are incorporated by reference, see 40 CFR 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Administrator, pursuant to 40 CFR 60.335(b)(10)(ii).

The fuel analyses required under 40 CFR 63.335(b)(9) and (b)(10) may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency, pursuant to 40 CFR 60.335(b)(11).

- B. Pursuant to 40 CFR 60.335(c), the owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

Instead of using the equation in 40 CFR 63.335(b)(1), manufacturers may develop ambient condition correction factors to adjust the nitrogen oxides emission level measured by the performance test as provided in 40 CFR 60.8 to ISO standard day conditions, pursuant to 40 CFR 60.335(c)(1).

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:
- i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the turbine will be tracked and recorded.
 - iii. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations; the test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods. The source owner or operator may also propose a plan

for testing across the normal operating range of the affected turbines.

- d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Illinois EPA may, at its discretion, accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the testing.
- e. The Final Report for these tests shall be submitted to the Illinois EPA within 60 days after the date of the tests. The Final Report shall include as a minimum:
 - i. A summary of results.
 - ii. General information.
 - iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment and test schedule.
 - iv. Detailed description of test conditions, including:
 - A. Fuel consumption (standard ft³).
 - B. Firing rate (million Btu/hr).
 - C. Turbine/Generator output rate (MW).
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
- f.
 - i. Upon written request by the Illinois EPA, the source owner or operator shall have the opacity of the exhaust from the affected turbine(s) tested during representative operating conditions as determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below, pursuant to Section 39.5(7)(d) of the Act.
 - ii. Such testing shall be conducted for specific turbine(s) within 90 calendar days of the request, or on the date turbine(s) next operates, or on the date agreed upon by the Illinois EPA, whichever is later.

- iii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 10.0 percent.
- iv. The source owner or operator shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
- v. The source owner or operator shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- vi. The source owner or operator shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.
- vii. The source owner or operator shall submit a written report for this testing within 30 days of the date of testing. This report shall include:
 - A. Date and time of testing.
 - B. Name and employer of qualified observer.
 - C. Copy of current certification.
 - D. Description of observation conditions.
 - E. Description of turbine operating conditions.
 - F. Raw data.
 - G. Opacity determinations.
 - H. Conclusions.

7.2.8 Monitoring Requirements

- a. i. If an affected turbine is routinely operated or exercised to confirm that the turbine will operate when needed, the operation and opacity of the affected turbine shall be formally observed by operating personnel for the affected turbine or a member of source owner or operator's environmental staff on a regular basis to assure that the affected turbine is operating properly, which observations shall be made at least every six months.

ii. If an affected turbine is not routinely operated or exercised, i.e., the time interval between operation of an affected turbine is typically greater than six months, the operation and opacity of the affected turbine shall be formally observed as provided above each time the source owner or operator carries out a scheduled exercise of the affected turbine.

~~iii. The source owner or operator shall also conduct formal observations of operation and opacity of an affected turbine upon written request by the Illinois EPA. With the agreement of the Illinois EPA, the source owner or operator may schedule these observations to take place during periods when it would otherwise be operating the affected turbine.~~

Note: The formal observation required above is not intended to be a USEPA Test Method 9 opacity test, nor does the observation require a USEPA Test Method 9 certified observer. It is intended to be performed by personnel familiar with the operation of the affected turbine who would be able to make a determination based from the observed opacity as to whether or not the affected turbine was running properly, and subsequently initiate a corrective action if necessary.

- b. i. The owner or operator of an affected turbine subject to 35 IAC 217 Subpart V (Condition 7.2.3(e)) shall install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS) for NO_x that meet the requirements of 40 CFR 75, Subpart B [35 IAC 217.710(a)].
- ii. Notwithstanding 35 IAC 217.710(a) above, the owner or operator of a gas-fired peaking unit or oil-fired peaking unit as defined in 40 CFR 72.2 may determine NO_x emissions in accordance with the emissions estimation protocol of 40 CFR 75, Subpart E [35 IAC 217.710(b)].
- iii. Notwithstanding 35 IAC 217.710(a) above, the owner or operator of a combustion turbine that operates less than 350 hour per ozone control period may determine the heat input and NO_x emissions of the turbine as follows [35 IAC 217.710(c)]:
- A. Heat input shall be determined from the metered fuel usage to the turbine or the calculated heat input determined as the product of the turbine's maximum hourly heat input and hours of operation as recorded by operating instrumentation on the turbine [35 IAC 217.710(c)(1)].

- B. NO_x emissions shall be determined as the product of the heat input, as determined above, and the appropriate default NO_x emission factors below [35 IAC 217.710(c)(2)]:

0.7 lbs/mmBtu - Natural gas

1.2 lbs/mmBtu - Fuel oil

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the source owner or operator shall maintain records of the following items for the affected turbine(s) to demonstrate compliance with Conditions 5.6.1, 7.2.3, 7.2.5, and 7.2.6, pursuant to Section 39.5(7)(b) of the Act:

- a. The owner or operator of an affected turbine subject to the requirements of 35 IAC 217 Subpart V (Condition 7.2.3(e)) shall:
 - i. Comply with the recordkeeping and reporting requirements of 40 CFR 75 applicable to NO_x emissions during the ozone control period, including, but not limited to, 40 CFR 75.54(b) and (d) [35 IAC 217.712(a)].
 - ii. Notwithstanding 35 IAC 217.712(a) above, the owner or operator of a combustion turbine for which heat input and NO_x emissions are determined pursuant to 35 IAC 217.710(c) (Condition 7.2.8(c)(iii)) shall comply with the following recordkeeping and reporting requirements [35 IAC 217.712(b)]:
 - A. Maintain records of the heat input and NO_x emissions of the turbine as determined in accordance with 35 IAC 217.710(c), and records of metered fuel use or operating hours used to determine heat input [35 IAC 217.712(b)(1)].
- b. The source owner or operator shall maintain records of the following items:
 - i. The sulfur content of the fuel oil used to fire the turbines as determined in accordance with Condition 7.2.8(b).
 - ii. A copy of the Final Report(s) for emission testing conducted pursuant to Condition 7.2.7.
 - iii. Copies of opacity determinations taken for the source by qualified observer(s) when using USEPA Method 9.

- iv. Records documenting its periodic review of its operating procedures as required by Condition 7.2.5(a).
- v. Information for the formal observations of opacity conducted pursuant to Condition 7.2.8(a). For each occasion on which observations are made, these records shall include the date, time, identity of the observer, a description of the various observations that were made, whether or not the affected engine was running properly, and whether or not corrective action is necessary and was subsequently initiated.
- c. A maintenance and repair log for the affected turbine, listing each activity performed with date.
- d. The sulfur content of the fuels fired in the affected turbine.
- e. Fuel consumption for the affected turbine for each type of fuel, 1,000 gallon/month and 1,000 gallon/year.
- f. Reserved for Future Use
- g. Operating hours for the affected turbine, hr/month and hr/year.
- h. Heat content of the fuel being fired in the affected turbine.
- i. Emissions of each pollutant from the affected turbine, including emissions from startups, with supporting calculations including documentation on the validity of the emission factors used, ton/month and ton/year.
- j. The source owner or operator shall maintain records that identify:
 - i. Any periods during which a continuous monitoring system was not operational, with explanation.
 - ii. Any day in which emission and/or opacity exceeded an applicable standard or limit.
- k. The source owner or operator shall keep records of good operating practices for each turbine.
- ~~l. The source owner or operator shall maintain the following records related to each shutdown of the turbines:
 - ~~i. The following information for each shutdown of a turbine:
 - ~~A. Date and time of shutdown.~~~~~~

~~B. A description of the shutdown, if written operating procedures are not followed during the shutdown or significant problems occur during the shutdown, including detailed explanation.~~

~~ii. The following information for the turbines when above normal opacity has been observed by source personnel:~~

~~A. Name of observer, position and reason for being at site.~~

~~B. Date and duration of above normal opacity, including affected turbine, start time and time normal operation was achieved.~~

~~C. If normal operation was not achieved within 30 minutes, an explanation why startup could not be achieved within this time.~~

~~D. A detailed description of the startup, including reason for operation.~~

~~E. An explanation why established startup procedures could not be performed, if not performed.~~

~~F. The nature of opacity following the end of startup or 30 minutes of operation, whichever occurs first, and duration of operation until achievement of normal opacity or shutdown.~~

~~G. Whether an exceedance of Condition 7.2.3(b), i.e., 30 percent opacity, may have occurred during startup, with explanation if qualified observer was on site.~~

~~m. Records for Startup~~

~~The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected turbine subject to Condition 7.2.3(b), which at a minimum shall include:~~

~~i. The following information for each startup of the affected turbine(s):~~

~~A. Date and duration of the startup, i.e., start time and time normal operation achieved.~~

~~B. If normal operation was not achieved within 30 minutes, an explanation why startup could not be achieved within this time.~~

- ~~C. A detailed description of the startup, including reason for operation and whether the procedures 7.2.3(f) were performed.~~
- ~~D. An explanation why the procedures of 7.2.3(f) and other established startup procedures could not be performed, if not performed.~~
- ~~E. Whether exceedance of Condition 5.3.2 and 7.2.3(b) may have occurred during startup. If an exceedance may have occurred, an explanation of the nature of opacity, i.e., severity and duration, during the startup and the nature of opacity at the conclusion of startup.~~
- ~~F. Whether operating personnel for the turbines or air environmental staff are on site during startup.~~
- ~~ii. A maintenance and repair log for each affected turbine, listing each activity performed with date.~~

n. Records for Malfunctions and Breakdowns

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected turbine subject to Condition 7.2.3(g) during malfunctions and breakdown, which as a minimum, shall include:

- i. Date and duration of malfunction or breakdown.
- ii. A detailed explanation of the malfunction or breakdown.
- iii. An explanation why the affected turbine continued to operate in accordance with Condition 7.2.3(g).
- iv. The measures used to reduce the quantity of emissions and the duration of the event.
- v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.
- vi. The amount of release above typical emissions during malfunction/breakdown.

7.2.10 Reporting Requirements

a. Reporting of Deviations

The source owner or operator shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected turbine with the permit requirements as follows,

pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- i. Emissions from the affected turbine in excess of the limits specified in Condition 7.2.3 within 30 days of such occurrence.
 - ii. Operation of the affected turbine in excess of the limits specified in Condition 7.2.5 within 30 days of such occurrence.
- b. In conjunction with the Annual Emission Report required by 35 IAC Part 254, the source owner or operator shall provide the operating hours for each affected turbine, the total number of startups, the total fuel consumption during the preceding calendar year.
- c. i. Annually report the heat input and NO_x emissions of the turbine as determined in accordance with 35 IAC 217.710(c) (Condition 7.2.8(c)(iii)), for each ozone control period, by November 30 of each year [35 IAC 217.712(b)(2)].
- ii. Pursuant to 35 IAC 217.712(c) and (d), no later than November 30 of each year, the source owner or operator shall submit a report to the Illinois EPA that demonstrates that the affected turbine has complied with Condition 7.2.3(e). These reports shall be accompanied by a certification statement signed by a responsible official for the source owner or operator as specified by 35 IAC 217.712(c).

d. ~~Reporting of Startups~~

~~The source owner or operator shall submit semi-annual startup reports to the Illinois EPA pursuant to Sections 39.5(7)(a) and (f) of the Act. These reports shall be submitted along with the semi-annual reports required by Condition 7.2.10(c)(ii) and shall include the following information for startups of the affected turbine during the reporting period:~~

- ~~i. A list of the startups of the affected turbine, including the date, duration and description of each startup, accompanied by a copy of the records pursuant to Condition 7.2.9(i) for each startup for which such records were required.~~
- ~~ii. If there have been no startups of an affected turbine during the reporting period, this shall be stated in the report.~~

e. Reporting of Malfunctions and Breakdowns

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected turbine subject to Condition 7.2.3(g) during malfunction or breakdown:

- i. 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 three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.
 - B. Upon achievement of compliance, the Permittee shall give a written follow-up notice within 15 days to the Illinois EPA, Air Compliance Unit and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the affected turbines was necessary, 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 or when the affected turbine was taken out of service.
 - C. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, 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 or the affected turbine will be taken out of service.
- ii. In accordance with the due dates in Condition 8.6.1, the Permittee shall submit semi-annual malfunction and breakdown reports to the Illinois EPA pursuant to Sections 39.5(7)(a) and (f) of the Act. These reports may be submitted along with other semi-annual reports and shall include the following information for malfunctions and breakdowns of the affected turbine during the reporting period:
 - A. A listing of malfunctions and breakdowns, in chronological order, that includes:

- I. The date, time, and duration of each incident.
- II. The identity of the affected operation(s) involved in the incident.
- B. Dates of the notices and reports of Conditions 7.2.10(f) (i).
- C. Any supplement information the Permittee wishes to provide to the notices and reports of Conditions 7.2.10(f) (i).
- D. The aggregate duration of all incidents during the reporting period.
- E. If there have been no such incidents during the reporting period, this shall be stated in the report.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected turbines.

7.2.12 Compliance Procedures

- a. Compliance with the PM emission limitations of Conditions 7.2.3(b) is addressed by the requirements of Condition 7.2.5, and the records required in Condition 7.2.9, and the reports required in Condition 7.2.10.
- b. Compliance with the SO₂ emission limitations of Conditions 7.2.3(c) is addressed by the requirements of Condition 7.2.5, and the records required in Condition 7.2.9, and the reports required in Condition 7.2.10.
- c.
 - i. Compliance with the NO_x emission limitations of Conditions 7.2.3(d) is addressed by the requirements of Condition 7.2.5, the testing requirements of 7.2.7, the monitoring requirements of 7.2.8, the records required in Condition 7.2.9, and the reports required in Condition 7.2.10(a).
 - ii. Notwithstanding 35 IAC 217.710(a), Condition 7.2.8(d), the owner or operator of a gas-fired peaking unit or oil-fired peaking unit as defined in 40 CFR 72.2 may determine NO_x emissions in accordance with the emissions estimation protocol of 40 CFR 75, Subpart E [35 IAC 217.710(b)].
 - iii. Notwithstanding 35 IAC 217.710(a), Condition 7.2.8(d), the owner or operator of a combustion turbine that operates less than 350 hour per ozone

control period may determine the heat input and NO_x emissions of the turbine as follows [35 IAC 217.710(c)]:

- A. Heat input shall be determined from the metered fuel usage to the turbine or the calculated heat input determined as the product of the turbine's maximum hourly heat input and hours of operation as recorded by operating instrumentation on the turbine [35 IAC 217.710(c)(1)].
- B. NO_x emissions shall be determined as the product of the heat input, as determined above, and the appropriate default NO_x emission factors below [35 IAC 217.710(c)(2)]:
 - 0.7 lbs/mmBtu - Natural gas
 - 1.2 lbs/mmBtu - Fuel oil

7.3 Turbines CT03-CT05 (Subject to NSPS - 40 CFR Subpart GG)

7.3.1 Description

The turbines are process emission unit used to generate electricity. The turbines are natural gas fired. The turbines are equipped, operated, and maintained with low NO_x combustor systems to control NO_x emissions. The turbines were constructed pursuant to Construction Permit 03120068.

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
CT03 and CT04	Nominal 212 MWe Natural Gas Fired Turbine, each	CT03 (May 28, 2005), CT04 (May 24, 2005)	Dry Low NO _x Combustors
CT05	Nominal 135 MWe Natural Gas Fired Turbine	September 29, 2005	Dry Low NO _x Combustors

7.3.3 Applicable Provisions and Regulations

- a. The "affected turbines" for the purpose of these unit-specific conditions, are turbines described in Conditions 7.3.1 and 7.3.2.
- b. Pursuant to 35 IAC 212.123,
 - i. 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.
 - ii. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 1000 ft radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
- c. Pursuant to 35 IAC 214.301, 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 turbine is subject to the NSPS for Stationary Gas Turbines, 40 CFR 60 Subparts A and GG, because the heat input at peak load is equal to or greater than 10.7 gigajoules per hour (10 mmBtu/hr), based on the lower heating value of the fuel fired and the affected turbine commenced construction, modification, or reconstruction after October 3, 1977. The Illinois EPA administers the NSPS for subject sources in Illinois pursuant to a delegation agreement with the USEPA.

i. Standard for Nitrogen Oxides:

Pursuant to 40 CFR 60.332(b), electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with the provisions of 40 CFR 60.332(a)(1). Pursuant to 40 CFR 60.332(a)(1), no owner or operator of an affected turbine shall cause to be discharged into the atmosphere from such gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

Where:

STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen calculated from the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NO _x percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04 (N)
$0.1 < N \leq 0.25$	$0.04 + 0.0067(N - 0.1)$
$N > 0.25$	0.005

Where:

N = The nitrogen content of the fuel (percent by weight) determined in accordance with Condition 7.3.8(b).

ii. Standard for Sulfur Dioxide:

Pursuant to 40 CFR 60.333, on and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of 40 CFR 60 Subpart GG shall comply with one or the other of the following conditions:

No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis, pursuant to 40 CFR 60.333(a).

No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw), pursuant to 40 CFR 60.333(b).

- e. i. No owner or operator shall cause or allow the emissions of NO_x into the atmosphere from the affected turbine to exceed 0.25 lbs/mmBtu of actual heat input during each ozone control period from May 1 through September 30, based on a ozone control period average, for that unit [35 IAC 217.706(a)].
- ii. Notwithstanding the above emission limitation of 35 IAC 217.706(a), the affected turbine subject to a more stringent NO_x emission limitation pursuant to any State or federal statute, including the Act, the Clean Air Act, or any regulations promulgated thereunder, shall comply with both the requirements of 35 IAC 217 Subpart V and that more stringent emission limitation [35 IAC 217.706(b)].

f. Startup Provisions

~~Subject to the following terms and conditions, the Permittee is authorized to operate the affected turbines in violation of the applicable standards in Condition 7.3.3(b) and the hourly limits in Condition 7.3.6 during startup. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its 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 each affected turbine(s) in accordance with written procedures prepared by the Permittee and maintained at the facility, in the control room for the each affected turbine(s), that are specifically developed to minimize emissions from startups and that include, at a minimum, the following measures:
 - A. The Permittee shall conduct startup of an affected turbine in accordance with the manufacturer's written instructions or other written instructions prepared by the source owner or operator and maintained on site.
 - B. The Permittee shall take the following measures to minimize emissions resulting from startups, the duration of startups, and minimize the frequency of startups:
 - I. Operating in accordance with the manufacturer's written operating and startup procedures, including a pre-check of the unit, or other written procedures developed and maintained by the source owner or operator so as to minimize the duration of startups and the emissions associated with startups. These procedures should allow for review of operating parameters of the unit during startup, or shutdown as necessary to make adjustments to reduce or eliminate excess emissions.
 - II. Maintaining units in accordance with written procedures developed and maintained by the source owner or operator so as to minimize the duration of startups and the frequency of startups. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in operation, and when the unit is shut down.
 - III. The procedures described above shall be reviewed at least annually to make necessary adjustments and shall be made

available to the Illinois EPA upon request.

~~iv. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Condition 7.3.9(m) and 7.3.10(e).~~

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.

g. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of an affected turbine in violation of the applicable standards in Condition 7.3.3(b) and the hourly emission limits in Condition 7.3.6 in the event of a malfunction or breakdown of the affected turbines. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent risk of injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

i. This authorization only allows such continued operation as necessary to provide essential service or prevent risk of 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 as soon as practical repair the turbine, remove the affected turbine from service, or undertake other action so that excess emissions cease.

iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.3.9(n) and 7.3.10(f). 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. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the affected turbines out of service.

- iv. Following notification to the Illinois EPA 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, pursuant to 35 IAC 201.263.
- 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.

7.3.4 Non-Applicability of Regulations of Concern

- a. The affected turbines are not subject to the New Source Performance Standards (NSPS) for Stationary Combustion Turbines, 40 CFR Part 60, Subpart KKKK, because the affected turbines did not commence construction, modification, or reconstruction after February 18, 2005 pursuant to 40 CFR 60.4305(a), and are therefore subject to 40 CFR Part 60, Subpart GG for Stationary Gas Turbines.

Note: To qualify for this non-applicability, the Permittee has certified that the turbines have not been modified or reconstructed after February 18, 2005.

- b. The affected turbines are not subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR Part 63, Subpart YYYY, because the affected turbines are not located at a major source of HAP emissions, pursuant to 40 CFR 63.6085.
- c. The affected turbines are not subject to 35 IAC 212.321 or 212.322, due to the unique nature of such units, a process weight rate can not be set so that such rules can not reasonably be applied, pursuant to 35 IAC 212.323.
- d. The affected turbines are not subject to 35 IAC 217.141 or 35 IAC 216.121 because the affected turbines are not fuel combustion units, as defined by 35 IAC 211.2470.

- e. The affected turbines are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources:
 - i. For NO_x and SO₂, because:
 - A. The affected turbines are subject to a NSPS proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).
 - B. The affected turbines are subject to Acid Rain Program requirements, pursuant to 40 CFR 64.2(b)(1)(iii).
 - C. The affected turbines are subject to an emission limitation or standard for which this CAAPP permit specifies a continuous compliance determination method, pursuant to 40 CFR 64.2(b)(1)(vi).
 - ii. For PM, VOM, and CO because the affected turbines do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.3.5 Control Requirements and Work Practices

- a. i. At all times, including periods of startup, shutdown, and malfunction, the source owner or operator shall, to the extent practicable, maintain and operate any affected turbine in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or the USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source [40 CFR 60.11(d)].
- ii. The source owner or operator shall operate the affected turbines in accordance with written operating procedures that shall include at a minimum the following measures:
 - A. Review of operating parameters of the unit during startup or shutdown as necessary for the proper operation of the affected turbine with appropriate adjustments to reduce emissions.
 - B. Implementation of inspection and repair procedures for a affected turbine prior to attempting startup following repeated trips.

- iii. The source owner or operator shall maintain the affected turbines in accordance with written procedures that shall include at a minimum the following measures:
 - ~~A. Unless specified on a more frequent basis by manufacturer's written instructions, an inspection of emissions related components shall be completed quarterly. Inspections shall be conducted in accordance with manufacturer's written instructions.~~
 - B. Repair and routine replacement of emissions-related components.
- iv. The above procedures may incorporate the manufacturer's written instruction for operation and maintenance of the affected turbines and associated control systems. The source owner or operator shall review these procedures at least every two years and shall revise or enhance them if necessary to be consistent with good air pollution control practice based on the actual operating experience and performance of the source.
- b. i. The Permittee shall manage the operation of the affected turbines to minimize multiple startups of a turbine in a single day, unless the turbine is tripped off during startup, and to provide adequate time for normal startup of the turbines, except for "quick starts" that are due to requests for immediate delivery of power, as would result from unexpected loss of a transmission line or other generating capacity.
- ii. Except during startup or shutdown of a affected turbine or for the purpose of emission testing, the Permittee shall not operate turbines below 75 percent load, or load at which emission testing conducted in accordance with Condition 7.3.7 has demonstrated compliance with the applicable hourly emission limits in Conditions 7.3.6.
- c. i. The only fuel fired in the affected turbines shall be natural gas.
- ii. The Permittee shall not fire more than 5,500 million standard cubic feet of natural gas per year (mmscf/yr) total, in the affected turbines. Compliance with this limit shall be determined from a running total of 12 months of data.
- iii. Each affected turbine shall be equipped, operated, and maintained with dry low NO_x combustors to control

NO_x emissions. (Dry low NO_x operation of the burners may be supplemented with small amounts of water to further control emissions of NO_x.)

7.3.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected turbines are subject to the following:

- a. Hourly emissions from affected turbine CT03 and CT04 each shall not exceed the following limitations except during startup and malfunction or breakdown:

NO _x		CO		VOM	PM/PM ₁₀	SO ₂
<u>Lb/Hr</u>	<u>Lb/mmBtu</u>	<u>Lb/Hr</u>	<u>Lb/mmBtu</u>	<u>Lb/Hr</u>	<u>Lb/Hr</u>	<u>Lb/Hr</u>
120.0	0.057*	49.0	0.023*	3.3	10.4	1.3

* Based on Higher Heating Value (HHV) of the Fuel.

For NO_x, for which continuous monitoring is performed, the compliance time period is 24 hours or the portion of each calendar day that a turbine operates. For the other pollutants, the compliance time period is three hours (three test).

- b. Hourly emissions from affected turbine CT05 shall not exceed the following limitations except during startup and malfunction or breakdown:

NO _x		CO		VOM	PM/PM ₁₀	SO ₂
<u>Lb/Hr</u>	<u>Lb/mmBtu</u>	<u>Lb/Hr</u>	<u>Lb/mmBtu</u>	<u>Lb/Hr</u>	<u>Lb/Hr</u>	<u>Lb/Hr</u>
83.0	0.054*	69.0	0.045*	3.0	10.4	0.9

* Based on Higher Heating Value (HHV) of the Fuel.

NO_x, for which continuous monitoring is performed, the compliance time period is 24 hours or the portion of each calendar day that a turbine operates. For the other pollutants, the compliance time period is three hours (three test).

- c. The total annual emissions from the affected turbines shall not exceed the following limitations. Compliance with these limitations shall be determined as a running total of 12 months of emission data.

NO _x	CO	VOM	PM/PM ₁₀	SO ₂
<u>Tons/Yr</u>	<u>Tons/Yr</u>	<u>Tons/Yr</u>	<u>Tons/Yr</u>	<u>Tons/Yr</u>
172.4	96.1	14.6	5.0	5.0

- d. For purpose of determining compliance with the limitations in Condition 7.3.6(c):

- i. Emissions of NO_x shall be determined by continuous emission monitoring in accordance with Condition 7.3.8.
- ii. Emissions shall be determined from emission factors developed from testing in accordance with Condition 7.3.7 (CO, VOM and PM/PM₁₀) and analysis of fuel sulfur content or standard factors (SO₂), unless emission monitoring is performed for a pollutant.
- iii. A. Notwithstanding the above, for affected turbines CT03 and CT04 for CO and VOM, unless an alternative factor is established or emissions monitoring is performed, emissions of CO and VOM from turbine CT03 and CT04 during an hour that includes a startup shall be presumed to be 1,800 and 2,600 percent respectively of the limits in Condition 7.3.6(a), i.e. CO and VOM emissions during an hour with a startup shall be presumed to be 882 lb/hr and 85.8 lb/hr, respectively.
- B. Notwithstanding the above, for affected turbine CT05 for CO and VOM, unless an alternative factor is established or emissions monitoring is performed, emissions of CO and VOM from turbine CT05 during an hour that includes a startup shall be presumed to be 625 and 1,100 percent respectively of the limits in Condition 7.3.6(b)
- C. Any alternative factor for emissions during startup of a turbine shall be based on representative emission testing conducted with USEPA Reference Test Methods. (Refer to Condition 7.3.7)
- e. 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].
- f. The above limitations were established in Permit 03120068, pursuant to PSD. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for PSD [T1].

7.3.7 Testing Requirements

- a. The nitrogen oxides (NO_x) emissions, and the oxygen (O₂) concentration and opacity of exhaust shall be measured for the affected turbines at the source owner or operator's

expense by an independent testing service approved by the Illinois EPA as follows to determine compliance with applicable emission limits:

- i. Within 120 days after a written request from the Illinois EPA, for such pollutants listed above as specified by the request.
 - ii. Any extension to these time periods that may be provided at its discretion by the Illinois EPA shall not alter the source owner or operator's obligation to perform emission testing for purposes of the NSPS in a timely manner as specified by 40 CFR 60.8.
- b. The following methods and procedures shall be used for testing of emissions:
- i. The USEPA Reference Test Methods shall be used including the following:

Opacity	USEPA Method 9
Nitrogen Oxides	USEPA Method 20
 - ii. A. Pursuant to 40 CFR 60.335(b), the owner or operator shall determine compliance with the applicable nitrogen oxides emission limitation in 40 CFR 60.332 and shall meet the performance test requirements of 40 CFR 60.8 as follows:

For each run of the performance test, the mean nitrogen oxides emission concentration (NO_{x_0}) corrected to 15 percent O_2 shall be corrected to ISO standard conditions using the following equation. Notwithstanding this requirement, use of the ISO correction equation is optional for: Lean premix stationary combustion turbines; units used in association with heat recovery steam generators (HRSG) equipped with duct burners; and units equipped with add-on emission control devices, pursuant to 40 CFR 60.335(b)(1):

$$NO_x = (NO_{x_0}) (P_r/P_o)^{0.5} e^{19(H_o-0.00633)} \\ (288^\circ K/T_a)^{1.53}$$

Where:

NO_x = emission concentration of NO_x at 15 percent O_2 and ISO standard ambient conditions, ppm by volume, dry basis

NO_{x_0} = mean observed NO_x concentration, ppm by volume, dry basis, at 15 percent O_2

- P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg
- P_o = observed combustor inlet absolute pressure at test, mm Hg
- H_o = observed humidity of ambient air, g H_2O /g air
- e = transcendental constant, 2.718
- T_a = ambient temperature, °K

The 3-run performance test required by 40 CFR 60.8 must be performed within ± 5 percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 percent of peak load, or at the highest achievable load point if 90-to-100 percent of peak load cannot be physically achieved in practice. If the turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel. Notwithstanding these requirements, performance testing is not required for any emergency fuel (as defined in 40 CFR 60.331), pursuant to 40 CFR 60.335(b)(2).

If water or steam injection is used to control NO_x with no additional post-combustion NO_x control and the owner or operator chooses to monitor the steam or water to fuel ratio in accordance with 40 CFR 60.334(a), then that monitoring system must be operated concurrently with each EPA Method 20, ASTM D6522-00 (incorporated by reference, see 40 CFR 60.17), or EPA Method 7E run and shall be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable 40 CFR 60.332 NO_x emission limit, pursuant to 40 CFR 60.335(b)(4).

If the owner or operator elects to install a CEMS, the performance evaluation of the CEMS may either be conducted separately (as described in 40 CFR 63.335(b)(7)) or as part of the initial performance test of the affected unit, pursuant to 40 CFR 60.335(b)(6).

Pursuant to 40 CFR 60.335(b)(7), if the owner or operator elects to install and certify a NO_x

CEMS under 40 CFR 60.334(e), then the initial performance test required under 40 CFR 60.8 may be done in the following alternative manner:

Perform a minimum of 9 reference method runs, with a minimum time per run of 21 minutes, at a single load level, between 90 and 100 percent of peak (or the highest physically achievable) load, pursuant to 40 CFR 60.335(b)(7)(i).

Use the test data both to demonstrate compliance with the applicable NO_x emission limit under 40 CFR 60.332 and to provide the required reference method data for the RATA of the CEMS described under 40 CFR 60.334(b), pursuant to 40 CFR 60.335(b)(7)(ii).

The requirement to test at three additional load levels is waived, pursuant to 40 CFR 60.335(b)(7)(iii).

If the owner or operator elects under 40 CFR 60.334(f) to monitor combustion parameters or parameters indicative of proper operation of NO_x emission controls, the appropriate parameters shall be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in 40 CFR 60.334(g), pursuant to 40 CFR 60.335(b)(8).

Pursuant to 40 CFR 60.335(b)(10), if the owner or operator is required under 40 CFR 60.334(i)(1) or (3) to periodically determine the sulfur content of the fuel combusted in the turbine, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using:

For gaseous fuels, ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01 (all of which are incorporated by reference, see 40 CFR 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Administrator, pursuant to 40 CFR 60.335(b)(10)(ii).

The fuel analyses required under 40 CFR 63.335(b)(9) and (b)(10) may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency, pursuant to 40 CFR 60.335(b)(11).

- B. Pursuant to 40 CFR 60.335(c), the owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

Instead of using the equation in 40 CFR 63.335(b)(1), manufacturers may develop ambient condition correction factors to adjust the nitrogen oxides emission level measured by the performance test as provided in 40 CFR 60.8 to ISO standard day conditions, pursuant to 40 CFR 60.335(c)(1).

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include as a minimum:
- i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing shall be performed including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the turbine will be tracked and recorded.
 - iii. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations; the test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods. The source owner or operator may also propose a plan for testing across the normal operating range of the affected turbines.
- d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Illinois EPA may, at its discretion, accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it

- interferes with the Illinois EPA's ability to observe the testing.
- e. The Final Report for these tests shall be submitted to the Illinois EPA within 60 days after the date of the tests. The Final Report shall include as a minimum:
 - i. A summary of results.
 - ii. General information.
 - iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment and test schedule.
 - iv. Detailed description of test conditions, including:
 - A. Fuel consumption (standard ft³).
 - B. Firing rate (million Btu/hr).
 - C. Turbine/Generator output rate (MW).
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - f.
 - i. Upon written request by the Illinois EPA, the source owner or operator shall have the opacity of the exhaust from the affected turbine(s) tested during representative operating conditions as determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below, pursuant to Section 39.5(7)(d) of the Act.
 - ii. Such testing shall be conducted for specific turbine(s) within 90 calendar days of the request, or on the date turbine(s) next operates, or on the date agreed upon by the Illinois EPA, whichever is later.
 - iii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 10.0 percent.
 - iv. The source owner or operator shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).

- v. The source owner or operator shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- vi. The source owner or operator shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.
- vii. The source owner or operator shall submit a written report for this testing within 30 days of the date of testing. This report shall include:
 - A. Date and time of testing.
 - B. Name and employer of qualified observer.
 - C. Copy of current certification.
 - D. Description of observation conditions.
 - E. Description of turbine operating conditions.
 - F. Raw data.
 - G. Opacity determinations.
 - H. Conclusions.

7.3.8 Monitoring Requirements

- a. i. If an affected turbine is routinely operated or exercised to confirm that the turbine will operate when needed, the operation and opacity of the affected turbine shall be formally observed by operating personnel for the affected turbine or a member of source owner or operator's environmental staff on a regular basis to assure that the affected turbine is operating properly, which observations shall be made at least every six months.
- ii. If an affected turbine is not routinely operated or exercised, i.e., the time interval between operation of an affected turbine is typically greater than six months, the operation and opacity of the affected turbine shall be formally observed as provided above each time the source owner or operator carries out a scheduled exercise of the affected turbine.
- ~~iii. The source owner or operator shall also conduct formal observations of operation and opacity of an affected turbine upon written request by the Illinois EPA. With the agreement of the Illinois EPA, the source owner or operator may schedule these~~

~~observations to take place during periods when it would otherwise be operating the affected turbine.~~

Note: The formal observation required above is not intended to be a USEPA Test Method 9 opacity test, nor does the observation require a USEPA Test Method 9 certified observer. It is intended to be performed by personnel familiar with the operation of the affected turbine who would be able to make a determination based from the observed opacity as to whether or not the affected turbine was running properly, and subsequently initiate a corrective action if necessary.

- b. The affected turbine shall comply with the applicable monitoring requirements of 40 CFR 60.334(h), below. Monitoring of fuel nitrogen content shall not be required while the facility does not claim an allowance for fuel-bound nitrogen. Monitoring for sulfur content in fuel is not required while natural gas is the only fuel fired in the affected turbine and the requirements of 40 CFR 60.334(h)3(i) or (ii) are met.

Pursuant to 40 CFR 60.334(h), the owner or operator of any stationary gas turbine subject to the provisions of this subpart:

Shall monitor the total sulfur content of the fuel being fired in the turbine, except as provided in 40 CFR 60.335(h)(3). The sulfur content of the fuel must be determined using total sulfur methods described in 40 CFR 60.335(b)(10). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084-82, 94, D5504-01, D6228-98, or Gas Processors Association Standard 2377-86 (all of which are incorporated by reference-see 40 CFR 60.17), which measure the major sulfur compounds may be used, pursuant to 40 CFR 60.334(h)(1); and

Shall monitor the nitrogen content of the fuel combusted in the turbine, if the owner or operator claims an allowance for fuel bound nitrogen (i.e., if an F-value greater than zero is being or will be used by the owner or operator to calculate STD in 40 CFR 60.332). The nitrogen content of the fuel shall be determined using methods described in 40 CFR 60.335(b)(9) or an approved alternative, pursuant to 40 CFR 60.334(h)(2).

Pursuant to 40 CFR 60.334(h)(3), notwithstanding the provisions of 40 CFR 60.335(h)(1), the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG

requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration:

The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less, pursuant to 40 CFR 60.334(3)(i); or

Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required, pursuant to 40 CFR 60.334(h)(3)(ii).

c. Reserved for Future Use

- d. i. The owner or operator of an affected turbine subject to 35 IAC 217 Subpart V (Condition 7.3.3(e)) shall install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS) for NO_x that meet the requirements of 40 CFR 75, Subpart B [35 IAC 217.710(a)].
- ii. Notwithstanding 35 IAC 217.710(a) above, the owner or operator of a gas-fired peaking unit or oil-fired peaking unit as defined in 40 CFR 72.2 may determine NO_x emissions in accordance with the emissions estimation protocol of 40 CFR 75, Subpart E [35 IAC 217.710(b)].
- iii. Notwithstanding 35 IAC 217.710(a) above, the owner or operator of a combustion turbine that operates less than 350 hour per ozone control period may determine the heat input and NO_x emissions of the turbine as follows [35 IAC 217.710(c)]:
- A. Heat input shall be determined from the metered fuel usage to the turbine or the calculated heat input determined as the product of the turbine's maximum hourly heat input and hours of operation as recorded by operating instrumentation on the turbine [35 IAC 217.710(c)(1)].
- B. NO_x emissions shall be determined as the product of the heat input, as determined above, and the appropriate default NO_x emission factors below [35 IAC 217.710(c)(2)]:
- 0.7 lbs/mmBtu - Natural gas
1.2 lbs/mmBtu - Fuel oil

- e. i. The affected turbine shall be equipped, operated, and maintained with a continuous monitoring system to monitor and record the fuel consumption being fired.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the source owner or operator shall maintain records of the following items for the affected turbine(s) to demonstrate compliance with Conditions 5.6.1, 7.3.3, 7.3.5, and 7.3.6, pursuant to Section 39.5(7)(b) of the Act:

- a. The owner or operator of an affected turbine subject to the requirements of 35 IAC 217 Subpart V (Condition 7.3.3(e)) shall:
 - i. Comply with the recordkeeping and reporting requirements of 40 CFR 75 applicable to NO_x emissions during the ozone control period, including, but not limited to, 40 CFR 75.54(b) and (d) [35 IAC 217.712(a)].
 - ii. Notwithstanding 35 IAC 217.712(a) above, the owner or operator of a combustion turbine for which heat input and NO_x emissions are determined pursuant to 35 IAC 217.710(c) (Condition 7.3.8(d)(iii)) shall comply with the following recordkeeping and reporting requirements [35 IAC 217.712(b)]:
 - A. Maintain records of the heat input and NO_x emissions of the turbine as determined in accordance with 35 IAC 217.710(c), and records of metered fuel use or operating hours used to determine heat input [35 IAC 217.712(b)(1)].
- b. The source owner or operator shall maintain records of the following items:
 - i. The sulfur content of the natural gas used to fire the turbines as determined in accordance with Condition 7.3.8(b).
 - ii. A copy of the Final Report(s) for emission testing conducted pursuant to Condition 7.3.7.
 - iii. Copies of opacity determinations taken for the source by qualified observer(s) when using USEPA Method 9.
 - iv. Records documenting its periodic review of its operating procedures as required by Condition 7.3.5(a).

- v. Information for the formal observations of opacity conducted pursuant to Condition 7.3.8(a). For each occasion on which observations are made, these records shall include the date, time, identity of the observer, a description of the various observations that were made, whether or not the affected engine was running properly, and whether or not corrective action is necessary and was subsequently initiated.
- c. A maintenance and repair log for the affected turbine, listing each activity performed with date.
- d. Reserved for Future Use
- e. Fuel consumption for the affected turbine, scf/month and scf/year.
- f. Reserved for Future Use
- g. Operating hours for the affected turbine, hr/month and hr/year.
- h. Heat content of the fuel being fired in the affected turbine.
- i. Emissions of each pollutant from the affected turbine, including emissions from startups, with supporting calculations including documentation on the validity of the emission factors used, ton/month and ton/year.
- j. The source owner or operator shall maintain records that identify:
 - i. Any periods during which a continuous monitoring system was not operational, with explanation.
 - ~~ii. Any period when the affected turbine was in operation during which ice fog was deemed to be a traffic hazard, the ambient conditions existing during the periods, the date and time the water injection system was deactivated, and the date and time the system was reactivated.~~
 - iii. Any day in which emission and/or opacity exceeded an applicable standard or limit.
- k. The source owner or operator shall keep records of good operating practices for each turbine.
- ~~l. The source owner or operator shall maintain the following records related to each shutdown of the turbines:
 - ~~i. The following information for each shutdown of a turbine:~~~~

~~A. Date and time of shutdown.~~

~~B. A description of the shutdown, if written operating procedures are not followed during the shutdown or significant problems occur during the shutdown, including detailed explanation.~~

~~ii. The following information for the turbines when above normal opacity has been observed by source personnel:~~

~~A. Name of observer, position and reason for being at site.~~

~~B. Date and duration of above normal opacity, including affected turbine, start time and time normal operation was achieved.~~

~~C. If normal operation was not achieved within 30 minutes, an explanation why startup could not be achieved within this time.~~

~~D. A detailed description of the startup, including reason for operation.~~

~~E. An explanation why established startup procedures could not be performed, if not performed.~~

~~F. The nature of opacity following the end of startup or 30 minutes of operation, whichever occurs first, and duration of operation until achievement of normal opacity or shutdown.~~

~~C. Whether an exceedance of Condition 7.3.3(b), i.e., 30 percent opacity, may have occurred during startup, with explanation if qualified observer was on site.~~

~~m. Records for Startup~~

~~The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected turbine subject to Condition 7.3.3(b), which at a minimum shall include:~~

~~i. The following information for each startup of the affected turbine(s):~~

~~A. Date and duration of the startup, i.e., start time and time normal operation achieved.~~

- ~~B. If normal operation was not achieved within 30 minutes, an explanation why startup could not be achieved within this time.~~
 - ~~C. A detailed description of the startup, including reason for operation and whether the procedures 7.3.3(f) were performed.~~
 - ~~D. An explanation why the procedures of 7.3.3(f) and other established startup procedures could not be performed, if not performed.~~
 - ~~E. Whether exceedance of Condition 5.3.2 and 7.3.3(b) may have occurred during startup. If an exceedance may have occurred, an explanation of the nature of opacity, i.e., severity and duration, during the startup and the nature of opacity at the conclusion of startup.~~
 - ~~F. Whether operating personnel for the turbines or air environmental staff are on site during startup.~~
- ~~ii. A maintenance and repair log for each affected turbine, listing each activity performed with date.~~

n. Records for Malfunctions and Breakdowns

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected turbine subject to Condition 7.3.3(g) during malfunctions and breakdown, which as a minimum, shall include:

- i. Date and duration of malfunction or breakdown.
- ii. A detailed explanation of the malfunction or breakdown.
- iii. An explanation why the affected turbine continued to operate in accordance with Condition 7.3.3(g).
- iv. The measures used to reduce the quantity of emissions and the duration of the event.
- v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.
- vi. The amount of release above typical emissions during malfunction/breakdown.

7.3.10 Reporting Requirements

a. Reporting of Deviations

The source owner or operator shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected turbine with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- i. Emissions from the affected turbine in excess of the limits specified in Conditions 7.3.3 and 7.3.6 within 30 days of such occurrence.
 - ii. Operation of the affected turbine in excess of the limits specified in Conditions 7.3.5 and 7.3.6 within 30 days of such occurrence.
- b. In conjunction with the Annual Emission Report required by 35 IAC Part 254, the source owner or operator shall provide the operating hours for each affected turbine, the total number of startups, the total fuel consumption during the preceding calendar year.
- c. Pursuant to 40 CFR 60.7(c) and 40 CFR 60.334(j), a report shall be submitted on a semi-annual basis. This report shall contain information on excess emissions and monitoring system downtime reports in accordance with 40 CFR 60.7(c) and 40 CFR 60.334(j).
- d.
 - i. Annually report the heat input and NO_x emissions of the turbine as determined in accordance with 35 IAC 217.710(c) (Condition 7.3.8(c)(iii)), for each ozone control period, by November 30 of each year [35 IAC 217.712(b)(2)].
 - ii. Pursuant to 35 IAC 217.712(c) and (d), no later than November 30 of each year, the source owner or operator shall submit a report to the Illinois EPA that demonstrates that the affected turbine has complied with Condition 7.3.3(e). These reports shall be accompanied by a certification statement signed by a responsible official for the source owner or operator as specified by 35 IAC 217.712(c).

~~e. Reporting of Startups~~

~~The source owner or operator shall submit semi-annual startup reports to the Illinois EPA pursuant to Sections 39.5(7)(a) and (f) of the Act. These reports shall be submitted along with the semi-annual reports required by Condition 7.3.10(f)(ii) and shall include the following~~

~~information for startups of the affected turbine during the reporting period.~~

~~i. A list of the startups of the affected turbine, including the date, duration and description of each startup, accompanied by a copy of the records pursuant to Condition 7.3.9(i) for each startup for which such records were required.~~

~~ii. If there have been no startups of an affected turbine during the reporting period, this shall be stated in the report.~~

f. Reporting of Malfunctions and Breakdowns

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected turbine subject to Condition 7.3.3(g) during malfunction or breakdown:

- i. 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 three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.
- B. Upon achievement of compliance, the Permittee shall give a written follow-up notice within 15 days to the Illinois EPA, Air Compliance Unit and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the affected turbines was necessary, 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 or when the affected turbine was taken out of service.
- C. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, 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 or the affected turbine will be taken out of service.

- ii. In accordance with the due dates in Condition 8.6.1, the Permittee shall submit semi-annual malfunction and breakdown reports to the Illinois EPA pursuant to Sections 39.5(7)(a) and (f) of the Act. These reports may be submitted along with other semi-annual reports and shall include the following information for malfunctions and breakdowns of the affected turbine during the reporting period:
 - A. A listing of malfunctions and breakdowns, in chronological order, that includes:
 - I. The date, time, and duration of each incident.
 - II. The identity of the affected operation(s) involved in the incident.
 - B. Dates of the notices and reports of Conditions 7.3.10(f)(i).
 - C. Any supplement information the Permittee wishes to provide to the notices and reports of Conditions 7.3.10(f)(i).
 - D. The aggregate duration of all incidents during the reporting period.
 - E. If there have been no such incidents during the reporting period, this shall be stated in the report.

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected turbines.

7.3.12 Compliance Procedures

- a. Compliance with the PM emission limitations of Conditions 7.3.3(b) is addressed by the requirements of Condition 7.3.5, and the records required in Condition 7.3.9, and the reports required in Condition 7.3.10.
- b. Compliance with the SO₂ emission limitations of Conditions 7.3.3(c) is addressed by the requirements of Condition 7.3.5, and the records required in Condition 7.3.9, and the reports required in Condition 7.3.10.
- c. i. Compliance with the NO_x emission limitations of Conditions 7.3.3(d)(i) is addressed by the requirements of Condition 7.3.5, the testing

requirements of 7.3.7, the monitoring requirements of 7.3.8, and the records required in Condition 7.3.9, and the reports required in Condition 7.3.10(a).

- ii. Compliance with the SO₂ emission limitations of Conditions 7.3.3(d)(ii) is addressed by the requirements of Condition 7.3.5, the records required in Condition 7.3.9, and the reports required in Condition 7.3.10(a).
- d. i. Compliance with the NO_x emission limitations of Conditions 7.3.3(e) is addressed by the requirements of Condition 7.3.5, the testing requirements of 7.3.7, the monitoring requirements of 7.3.8, the records required in Condition 7.3.9, and the reports required in Condition 7.3.10(a).
- ii. Notwithstanding 35 IAC 217.710(a), Condition 7.3.8(d), the owner or operator of a gas-fired peaking unit or oil-fired peaking unit as defined in 40 CFR 72.2 may determine NO_x emissions in accordance with the emissions estimation protocol of 40 CFR 75, Subpart E [35 IAC 217.710(b)].
- iii. Notwithstanding 35 IAC 217.710(a), Condition 7.3.8(d), the owner or operator of a combustion turbine that operates less than 350 hour per ozone control period may determine the heat input and NO_x emissions of the turbine as follows [35 IAC 217.710(c)]:
 - A. Heat input shall be determined from the metered fuel usage to the turbine or the calculated heat input determined as the product of the turbine's maximum hourly heat input and hours of operation as recorded by operating instrumentation on the turbine [35 IAC 217.710(c)(1)].
 - B. NO_x emissions shall be determined as the product of the heat input, as determined above, and the appropriate default NO_x emission factors below [35 IAC 217.710(c)(2)]:
 - 0.7 lbs/mmBtu - Natural gas
 - 1.2 lbs/mmBtu - Fuel oil

~~7.4 Engines (Subject to NESHAP 40 CFR 63 Subpart ZZZZ)~~~~7.4.1 Description~~

~~The diesel engines are process emission units used to provide backup power generation and to drive a fire pump.~~

~~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
Fire Pump	Diesel Fire Pump	2002	None
Emergency Generator	Emergency Diesel Generator	2002	None

~~7.4.3 Applicable Provisions and Regulations~~

- ~~a. The "affected diesel engines" for the purpose of these unit-specific conditions, are diesel engines described in Conditions 7.4.1 and 7.4.2.~~
- ~~b. Pursuant to 35 IAC 212.123,~~
- ~~i. 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.~~
- ~~ii. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 1000 ft radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.~~
- ~~c. Pursuant to 35 IAC 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.~~

~~7.4.4 Non Applicability of Regulations of Concern~~

- ~~a. The affected diesel engines are not subject to the New Source Performance Standards (NSPS) for Compression Ignition Internal Combustion Engines, 40 CFR Part 60,~~

~~Subpart IIII, because the Permittee did not commence construction (date that construction commences is the date the engine is ordered by the Permittee) of the affected diesel engines after July 11, 2005 where the affected diesel engines are:~~

- ~~i. Manufactured after April 1, 2006 and are not fire pump engines, pursuant to 40 CFR 60.4200(a)(2)(i).~~
- ~~ii. Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006, pursuant to 40 CFR 60.4200(a)(2)(ii).~~

~~Note: To qualify for this non-applicability, the Permittee has certified that the diesel engines have not modified or reconstructed their diesel engines after July 11, 2005.~~

- ~~b. The affected diesel engines are excluded from certain requirements of the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart ZZZZ, because the affected diesel engines are existing compression ignition (CI) stationary RICE, pursuant to 40 CFR 63.6590(b)(3), and do not have to meet the requirements of that Subpart or Subpart A, additionally no initial notification is necessary. Requirements necessary to maintain the exclusion, and therefore compliance with that Part, are found within this Section. Specifically, those requirements are not becoming an affected source pursuant to 40 CFR 63.6590.~~
- ~~c. The affected diesel engines (used as diesel generators) are not subject to the Acid Rain Program, 40 CFR 72, because the affected diesel engines are non utility units, as defined by 40 CFR 72.6(b)(8). Pursuant to 40 CFR 72.2, "utility unit" is defined as a unit owned or operated by a utility that serves a generator in any State that produces electricity for sale.~~
- ~~d. The affected diesel engines are not subject to 35 IAC 212.321 or 212.322, due to the unique nature of such units, a process weight rate can not be set so that such rules can not reasonably be applied, pursuant to 35 IAC 212.323.~~
- ~~e. The affected diesel engines are not subject to 35 IAC 216.121 because the affected diesel engines are not fuel combustion units, as defined by 35 IAC 211.2470.~~
- ~~f. i. The affected diesel engines are not subject to 35 IAC Part 217, Subpart Q: Stationary Reciprocating Internal Combustion Engines and Turbines, because the affected diesel engines are not stationary reciprocating internal combustion engines listed in Appendix C of that Part, pursuant to 35 IAC 217.386.~~

~~ii. The affected diesel engines are not subject to 35 IAC 217.141 because the affected diesel engines are not fuel combustion units, as defined by 35 IAC 211.2470.~~

~~g. The affected diesel engines are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected diesel engines does not use an add on control device to achieve compliance with an emission limitation or standard.~~

~~7.4.5 Control Requirements and Work Practices~~

~~a. The Permittee shall follow good operating practices for the affected engines, including periodic inspection, routine maintenance and prompt repair of defects.~~

~~b. Distillate fuel oil shall be the only fuel fired in the affected diesel engines.~~

~~c. The Illinois EPA shall be allowed to sample all fuels stored at the source.~~

~~7.4.6 Production and Emission Limitations~~

~~Production and emission limitations are not set for the affected diesel engines. However, there are source wide production and emission limitations set forth in Condition 5.6.~~

~~7.4.7 Testing Requirements~~

~~a. i. Upon written request by the Illinois EPA, the Permittee shall have the opacity of the exhaust from the affected diesel engine(s) tested during representative operating conditions as determined by a qualified observer in accordance with USEPA Test Method 9, as further specified below, pursuant to Section 39.5(7)(d) of the Act.~~

~~ii. Such testing shall be conducted for specific diesel engine(s) within 70 calendar days of the request, or on the date diesel engine(s) next operates, or on the date agreed upon by the Illinois EPA, whichever is later.~~

~~iii. The duration of opacity observations for each test shall be at least 30 minutes (five 6 minute averages) unless the average opacities for the first 12 minutes of observations (two six minute averages) are both less than 10.0 percent.~~

~~iv. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness~~

~~testing. This notification shall include the name and employer of the qualified observer(s).~~

~~v. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.~~

~~vi. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.~~

~~vii. The Permittee shall submit a written report for this testing within 15 days of the date of testing. This report shall include:~~

~~A. Date and time of testing.~~

~~B. Name and employer of qualified observer.~~

~~C. Copy of current certification.~~

~~D. Description of observation conditions.~~

~~E. Description of diesel engine operating conditions.~~

~~F. Raw data.~~

~~G. Opacity determinations.~~

~~H. Conclusions.~~

~~b. i. In the event that the fuel oil supplier is unable to provide the sulfur content of the fuel oil supply for the affected diesel engines, the Permittee shall have the sulfur content of the oil supply to the affected diesel engines, in lbs/mmBtu, determined from an analysis of representative sample of the oil supply, as follows, pursuant to Section 39.5(7)(d) of the Act:~~

~~A. From a sample taken no later than 90 days after first operating the affected diesel engines pursuant to this permit, provided, however, that if such sample is taken following operation of the affected diesel engines, the sample shall be taken prior to adding more oil to the storage tank.~~

~~B. From a sample taken no later than 30 days after acceptance of a shipment of fuel whose sulfur content would not meet Condition 7.4.3(e) based upon supplier data, provided however, that if the affected diesel engines are operated following acceptance of such a shipment, the~~

~~sample shall be taken prior to adding a subsequent shipment of oil to the relevant storage tank.~~

~~C. From a sample taken no later than 30 days after a request for such a sample is made by the Illinois EPA, provided, however, that such sample shall be taken prior to adding more oil to the relevant storage tank.~~

~~ii. Sampling and analysis, including that which forms the basis for the suppliers' data, shall be conducted using methods that would be acceptable under the federal New Source Performance Standards for Stationary Gas Turbines, 40 CFR 60.335(b)(2) and (c) or the federal Acid Rain Program, 40 CFR 75, Appendix D, Optional SO₂ Emissions Data Protocol for Gas Fired and Oil Fired Units e.g., ASTM D4057-88 and ASTM D129-91.~~

~~Note: Condition 7.4.7(b)(ii) is for fuel testing methodology only, and is in no way intended to subject the source to those provisions.~~

7.4.8 Monitoring Requirements

~~a. i. If an affected diesel engine is routinely operated or exercised to confirm that the affected diesel engine will operate when needed, the operation and opacity of the affected diesel engine shall be formally observed by operating personnel for the affected diesel engine or a member of Permittee's environmental staff on a regular basis to assure that the affected diesel engine is operating properly, which observations shall be made at least every six months.~~

~~ii. If an affected diesel engine is not routinely operated or exercised, i.e., the time interval between operation of an affected diesel engine is typically greater than six months, the operation and opacity of the affected diesel engine shall be formally observed as provided above each time the Permittee carries out a scheduled exercise of the affected diesel engine.~~

~~iii. The Permittee shall also conduct formal observations of operation and opacity of an affected diesel engine upon written request by the Illinois EPA. With the agreement of the Illinois EPA, the Permittee may schedule these observations to take place during periods when it would otherwise be operating the affected diesel engine.~~

~~Note: The "formally observation" required above is not intended to be a USEPA Test Method 9 opacity test, nor does the observation require a USEPA Test Method 9 certified observer. It is intended to be performed by personnel familiar with the operation of the affected diesel engines who would be able to make a determination based from the affected diesel engines who would be able to make a determination based from the observed opacity as to whether of not the affected diesel engine was running properly, and subsequently initiate a corrective action if necessary.~~

7.4.9 Recordkeeping Requirements

~~In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for each affected diesel engine to demonstrate compliance with Conditions 5.6.1 and 7.4.3, pursuant to Section 39.5(7)(b) of the Act:~~

- ~~a. i. An operating log for each affected diesel engine, which shall include the following information:~~
 - ~~A. Information for each time the affected diesel engine is operated, with date, time, duration, and purpose (i.e., exercise or power service). Monthly and annual records of hours of operation of each engine and total hours of operation.~~
 - ~~B. Information for the observations conducted pursuant to Condition 7.4.8(a) or 7.4.7(a), with date, time, personnel, and findings.~~
 - ~~I. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for an affected diesel engine that it conducts or that are conducted on its behalf by individuals who are qualified to make such observations for Condition 7.4.7(a). For each occasion on which such observations are made, these records shall include the identity of the observer, a description of the various observations that were made, the observed opacity, and copies of the raw data sheets for the observations.~~
 - ~~II. The Permittee shall keep records for all formal observations of opacity conducted pursuant to Condition 7.4.8(a). For each occasion on which observations are made, these records shall include the date, time, identity of the observer, a description of the various observations~~

~~that were made, whether or not the affected diesel engine was running properly, and whether or not corrective action is necessary and was subsequently initiated.~~

~~C. Information identifying any deviation from Condition 7.4.5(b).~~

~~ii. A maintenance and repair log for each affected diesel engine and associated equipment, listing activities performed with date.~~

~~iii. The Permittee shall keep records of good operating practices for each affected diesel engine, as defined in Condition 7.4.5(a).~~

~~b. Fuel usage for the affected diesel engines:~~

~~i. Total usage of fuel oil for the affected diesel engines, gallons/month and gallons/year.~~

~~e. The following records related to the sulfur content of the oil fuel supply and SO₂ emissions of the affected diesel engines:~~

~~i. Records for each shipment of fuel for the affected diesel engines, including date, supplier, quantity (in gallons), sulfur content, and whether the SO₂ emissions from the burning of such fuel would meet the standard in Condition 7.4.3(e).~~

~~ii. The Permittee shall maintain records of the sulfur content of the fuel oil supply to the affected diesel engines, based on the weighted average of material in the storage tank, or the sulfur content of the supply shall be assumed to be the highest sulfur content in any shipment in the tank.~~

~~d. Emissions from each affected diesel engine (i.e., NO_x, CO, SO₂, VOM, and PM) in tons/month and tons/year with supporting calculations and data as required by Condition 7.4.9.~~

7.4.10 Reporting Requirements

~~a. Reporting of Deviations~~

~~The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected diesel engines with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.~~

- ~~i. Emissions of opacity, SO₂, from the affected diesel engines in excess of the limits specified in Conditions 7.4.3 within 30 days of such occurrence.~~
- ~~ii. Operation of the affected diesel engines in noncompliance with the requirements specified in Condition 7.4.5 within 30 days of such occurrence.~~

~~7.4.11 Operational Flexibility/Anticipated Operating Scenarios~~

~~Operational flexibility is not set for the affected diesel engines.~~

~~7.4.12 Compliance Procedures~~

- ~~a. Compliance with the PM emission limitations of Conditions 7.4.3(b) is addressed by the requirements of Condition 7.4.5(a), the testing requirements in Condition 7.4.7(a), the monitoring requirements of Condition 7.4.8(a), the records required in Condition 7.4.9(a), and the reports required in Condition 7.4.10(a).~~
- ~~b. i. Compliance with the SO₂ emission limitation of Condition 7.4.3(e) (i) is addressed by the requirements of Condition 7.4.5, the testing requirements in Condition 7.4.7(b), and the records and reports required in Conditions 7.4.9(b) and (c) and 7.4.10(a).~~
- ~~ii. For this purpose, complete conversion of sulfur into SO₂ shall be assumed, e.g., SO₂ emissions in lb/mmBtu are twice the sulfur content of the fuel supply, in lb/mmBtu, using the following equation:~~

$$\text{SO}_2 \text{ ppm} = \frac{\text{Fuel sulfur content (lb/mmBtu)} \times 2 \times 1/64 \times 385.2 \times 1,000,000}{\text{Engine exhaust rate factor (sef/mmBtu)}}$$

~~Note: Stoichiometric combustion of distillate oil with the maximum available sulfur content, i.e., 1.0 percent, would result in an SO₂ concentration in the exhaust that is well below the 2000 ppm limit in Condition 7.4.3(e) (i), i.e., only about 500 ppm, based on 10,320 sef/mmBtu, the F-factor for oil in USEPA's Reference Method 19.~~

~~Note: Separate records are not being required for Condition 7.4.3(e) (ii) because stoichiometric combustion of oil to emit 0.3 lb SO₂ per million Btu (so as to exactly comply with Condition 7.4.3(e) (ii)) would result in an SO₂ concentration in the exhaust of only about 160 ppm based on the F-factor for oil in USEPA's Reference Method 19, which is well below the 2000 ppm limit in Condition 7.4.3(e) (ii).~~

~~e. Compliance with the emission limits in Condition 5.6 are addressed by the records and reports required in Conditions 7.4.9 and 7.4.10 and the emission factors and formulas listed below if suitable manufacture's emission rate data is not available:~~

~~i. Emission factors for the affected diesel engines up to 600 horsepower:~~

<u>Pollutant</u>	<u>Emission Factors</u>	
	<u>(lb/mmBtu)</u>	<u>(lb/hp-hr)</u>
	<u>Fuel Input</u>	<u>Power Output</u>
—VOM	0.35	2.46×10^{-03}
—PM	0.31	2.20×10^{-03}
—SO₂	0.29	2.05×10^{-03}
—NO_x	4.41	0.031
—CO	0.95	6.68×10^{-03}

~~The heat content of distillate fuel oil shall be assumed to be 137,030 Btu/gal as per AP-42.~~

~~Emissions = Distillate Fuel Oil Usage x Heat Content of Fuel Oil x Emission Factor~~

~~The emission factors are for Gasoline And Diesel Industrial Engines from AP-42 Section 3.3 (dated 10/96).~~

~~ii. Emission factors for the affected engines greater than 600 horsepower:~~

<u>Pollutant</u>	<u>Emission Factors</u>	
	<u>(lb/mmBtu)</u>	<u>(lb/hp-hr)</u>
	<u>Fuel Input</u>	<u>Power Output</u>
—VOM	0.09	7.05×10^{-04}
—PM	0.1	0.0007
—SO₂	$1.01 \times S_{F0}$	$8.09 \times 10^{-03} \times S1$
—NO_x	3.2	0.024
—CO	0.85	5.5×10^{-03}

~~Where S_{F0} represents the percent sulfur in the fuel oil. S1 = % sulfur in fuel oil. The heat content of distillate fuel oil shall be assumed to be 137,030 Btu/gal as per AP-42.~~

~~Emissions = Distillate Fuel Oil Usage x Heat Content of Fuel Oil x Emission Factor~~

~~The emission factors are for Large Stationary Diesel And All Stationary Dual-fuel Engines from AP-42 Section 3.4 (dated 10/96).~~

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 January 30, 2009 (the date of issuance of the proposed permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is an affected source under Title IV of the CAA and is subject to requirements pursuant to Title IV of the CAA as specified in Section 6.2. To the extent that the federal regulations promulgated under Title IV of the CAA, are inconsistent with the requirements of this permit, the federal regulations promulgated under Title IV of the CAA shall take precedence pursuant to Section 39.5(17)(j) of the Act.

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

Reports summarizing required monitoring as specified in the conditions of this permit shall be submitted to the Illinois EPA every six months as follows, 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	September 1
July - December	March 1

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 operating parameters for the source 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. 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)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. Illinois EPA - Air Quality Planning Section

Illinois Environmental Protection Agency
Bureau of Air
Air Quality Planning Section (MC 39)
P.O. Box 19276
Springfield, Illinois 62794-9276

iii. Illinois EPA - Air Regional Field Office

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

iv. USEPA Region 5 - Air Branch

USEPA (AR - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

- c. 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)
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.)

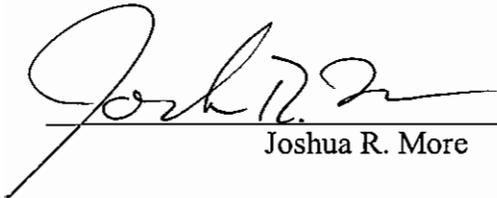
CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 23rd day of April, 2009, I have served electronically the attached **APPEARANCES OF RENEE CIPRIANO, and JOSHUA R. MORE and APPEAL OF CAAPP PERMIT**, upon the following person:

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

and by first class mail, postage affixed, upon the following persons:

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



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