

Draft Permit
August 2013

217/785-1705

CONSTRUCTION PERMIT

PERMITTEE

Owner

Ameren Energy Resources
Generating Company
1901 Chouteau Avenue
St. Louis, Missouri 63103

Attn: Steven Whitworth

Operator

FutureGen Industrial
Alliance, Incorporated
73 Central Park Plaza East
Jacksonville, Illinois 62650

Attn: Mark Williford

Application No.: 12020013

Applicant's Designation: FG2.0

Subject: FutureGen Project

Date Issued:

Location: 800 South Washington Street, Meredosia, Morgan County

I.D. No.: 137805AAA

Date Received: February 9, 2012

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and air pollution control equipment consisting of a coal-fired, oxy-combustion power plant as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions.

If you have any questions on this permit, please call Bob Smet at 217/785-9250 (TTD 217/782-9143).

Robert W. Bernoteit
Acting Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

RWB:RPS:psj

cc: Region 2
USEPA Region V

TABLE OF CONTENTS

	Page
FINDINGS	3
SECTION 1: SOURCE-WIDE CONDITIONS	4
1.1 Effect of Permit	
1.2 Permanent Shutdown of Boilers 1 through 6	
1.3 Emissions of Hazardous Air Pollutants (HAPs)	
1.4 General Requirements of the New Source Performance Standards (NSPS)	
1.5 Miscellaneous Ancillary Equipment	
1.6 Good Air Pollution Control Practices	
1.7 Compliance with Emission Standards and Emission Limits	
1.8 General Records for Monitoring Systems and Instrumentation	
1.9 Retention and Availability of Records	
1.10 Addresses for the Illinois EPA	
1.11 Authorization for Operation	
1.12 Standard Permit Conditions	
SECTION 2: UNIT-SPECIFIC CONDITIONS FOR PARTICULAR EMISSION UNITS	9
2.1 Oxy-Combustion Boiler	
2.2 Auxiliary Boiler	
2.3 New and Modified Coal Handling Operations	
2.4 Bulk Material Handling Operations	
2.5 Cooling Towers	
2.6 Roadways	
SECTION 3: GENERAL PERMIT CONDITIONS	43
3.1 General Requirements for Emission Testing	
3.2 General Requirements for "Logs" or Similar Records	
3.3 General Requirements for Records for Deviations	
3.4 General Requirements for Reporting of Deviations	
ATTACHMENTS	
1 Summary of Project Emissions	1-1
2 Standard Permit Conditions	2-1

FINDINGS

- 1a. Ameren Energy Resources Generating and the FutureGen Industrial Alliance have requested a construction permit for the FutureGen 2.0 project, a full-scale coal-fired oxy-combustion power plant at the Meredosia Energy Center, the existing electric power plant in Meredosia. The project will include construction of a coal-fired oxy-combustion boiler, auxiliary boiler, three cooling towers and other ancillary operations and modification of existing coal handling operations and other ancillary operations at the source. The new plant will replace the existing boilers at the existing Meredosia Energy Center.
- b. The plant will be designed to separate carbon dioxide (CO₂) from the flue gas of the oxy-combustion boiler to be sequestered geologically. Sequestration would occur at a separate facility that would be located about 30 miles east of Meredosia.
2. Meredosia is located in Morgan County, which is designated attainment for all criteria air pollutants.
3. This project is not subject to the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21. This is because this project will not be accompanied by significant net increases in emissions of PSD pollutants, considering the past actual emissions of the existing Meredosia Energy Center. (See Attachment 1, Table 1B.) For this purpose, emissions from the sequestration facility have also been considered because this facility is considered to be a support facility for this new oxy-combustion power plant under the PSD rules.
4. After reviewing the application, the Illinois EPA has determined that this project is being designed to comply with applicable state and federal emission standards and requirements.
5. A copy of the application, the project summary prepared by the Illinois EPA, and a draft of this permit were placed in a public repository near the source, and the public was given notice and an opportunity to examine this material and to participate in a public hearing and to submit comments on these matters.

SECTION 1: SOURCE-WIDE CONDITIONS

1.1 Effect of Permit

- a. This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.
- b. In particular, this permit does not relieve the Permittee from the responsibility to carry out practices during the construction and operation of the plant, such as application of water sprays to unpaved traffic areas, as necessary to prevent an air pollution nuisance from fugitive dust, as prohibited by 35 IAC 201.141.

1.2 Permanent Shutdown of Boilers 1 through 6

Upon initial startup of the oxy-combustion boiler, Boilers 1 through 6 at the Meredosia Energy Center shall be permanently shut down.

Note: This permit is issued based on this project not being a major modification subject to PSD because it will be accompanied by contemporaneous decreases in emissions such that the increases or net increases in emissions of PSD pollutants are not significant, as further described in Attachment 1, Tables 1A and 1B.

1.3 Emissions of Hazardous Air Pollutants (HAPs)

- a. This permit is issued based on this plant not being a major source of hazardous air pollutants (HAPs), for purposes of applicability of 40 CFR 63 to this project. That is, the emissions of individual HAPs will each be less than 10 tons per year and the total emissions of HAPs will be less than 25 tons per year so that the plant is not subject to the provisions of 40 CFR Part 63 that are applicable to major sources of HAPs.
- b. The Permittee shall keep records of the annual emissions of HAPs from the plant to demonstrate that the plant is not a major source of emissions of HAPs. These records shall be compiled on at least an annual basis.

1.4 General Requirements of the New Source Performance Standards (NSPS)

- a. New Source Performance Standards (NSPS), 40 CFR Part 60, will apply to certain new emission units that are part of the proposed project, including the oxy-combustion boiler (40 CFR 60 Subpart Da), the auxiliary boiler (40 CFR 60 Subpart Dc) and the new coal handling operations (40 CFR 60 Subpart Y).
- b. The Permittee shall at all times, maintain and operate the boilers and other emission units that are subject to the NSPS, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

- c. For the boilers and other emission units that are subject to NSPS, the Permittee shall fulfill applicable notification requirements of the NSPS, 40 CFR 60.7(a), including:
 - i. Written notification of commencement of construction, no later than 30 days after such date. [40 CFR 60.7(a)(1)]
 - ii. Written notification of the actual date of initial startup, within 15 days after such date. [40 CFR 60.7(a)(3)]
- d. i. For the boilers and other emission units that are subject to NSPS, the Permittee shall fulfill applicable performance testing requirements of the NSPS, including 40 CFR 60.8(a), (c) and (d).
 - ii. For each performance evaluation conducted to demonstrate compliance with the NSPS, in addition to submitting a test report to the Illinois EPA, the Permittee shall electronically submit the test data to USEPA or, for opacity performance tests, mail a summary copy to the USEPA as required by the NSPS (e.g., 40 CFR 60.258(d)).
- e. As this permit addresses emission standards and requirements of the NSPS, the applicable provisions of the NSPS, 40 CFR Part 60, as adopted by USEPA, shall govern in the event of any inconsistency or conflict between the terms of this permit and the provisions of the NSPS.

1.5 Miscellaneous Ancillary Equipment

- a. This permit is issued based on negligible emissions of VOM from storage tanks at the plant, including storage tanks for diesel fuel. For this purpose, VOM emissions from each tank shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- b. i. Ancillary equipment shall comply with all applicable emission standards and control requirements of the applicable NSPS, 40 CFR Part 60.
 - ii. Ancillary equipment shall comply with all applicable emission standards and control requirements of the applicable state emission regulations at Title 35, Subtitle B, Chapter I, Subchapter c.
 - iii. For ancillary equipment, the Permittee shall fulfill applicable requirements of applicable regulations, including provisions for testing, monitoring, recordkeeping, notification and reporting.

1.6 Good Air Pollution Control Practice

- a. The Permittee shall operate and maintain all emission units at this plant, including associated air pollution control

equipment, in a manner consistent with good air pollution control practice for minimizing emissions.

- b. The Permittee shall operate and maintain required monitoring devices and instrumentation in accordance with good monitoring practices, following the manufacturer's recommended operating and maintenance procedures or such other procedures as otherwise necessary to assure reliable operation of such devices.

1.7 Compliance with Emission Standards and Emission Limits

- a. The emission limits set by this permit apply at all times unless otherwise specified in a particular provision of this permit.
- b.
 - i. Unless otherwise provided by the applicable rule, the emission standards for particulate matter that are addressed in the conditions of this permit only restrict filterable particulate, as would be measured by USEPA Method 5 or other appropriate USEPA Test Methods.
 - ii. Unless otherwise provided by applicable provisions of this permit, emissions limits for PM10 and PM2.5 set by this permit address both filterable and condensable particulate.
- c. Emission limits set by this permit in lbs/million Btu (lbs/mmBtu) shall apply based on the higher heating value (HHV) of the fuel.
- d. When emission testing is conducted, compliance with hourly limits set by this permit shall be determined from the average of the test results, commonly three runs, each nominally one hour in duration.
- e.
 - i. Except as provided below or unless otherwise specified in a particular provision, compliance with annual limits established by this permit shall be determined from a rolling total of 12 months of data, i.e., from the sum of the data for the current month and data for the preceding 11 months (12 month total), and shall consider all emissions, including emissions during startup, shutdown, and malfunction and breakdown.
 - ii. For the first year (12 months) of operation, compliance shall be determined for a cumulative total of monthly data, i.e. from the sum of the data for the current month and data for all preceding months.

1.8 General Records for Monitoring Systems and Instrumentation

- a. The Permittee shall keep records of the data measured by required monitoring systems and instrumentation. Unless otherwise provided in a particular condition of this permit, the following requirements shall apply to such recordkeeping:

- i. For required monitoring systems, data shall be automatically recorded by a central data system, dedicated data logging system, chart recorder or other data recording device. If an electronic data logging system is used, the recorded data shall be the hourly average value of the particular parameter for each hour.
 - ii. For required instrumentation, the measured data shall be recorded manually at least once per day, unless otherwise specified, with data and time both recorded, for periods when the associated emission unit(s) are in service, provided however if data from an instrument is recorded automatically, the above provisions for recording of data from monitoring systems shall apply and manual recording of data is not required.
- b. The Permittee shall keep records for the operation, calibration maintenance and repair of required monitoring systems and instrumentation. These operating records shall, at a minimum, identify the date and duration of any time when a required monitoring instrument or device was not in operation, with explanation; the performance of manual quality control and quality assurance procedures for the system; and maintenance and repair activities performed for the system.
 - c. The Permittee shall maintain a file containing a copy of the specifications for each required monitoring device or instrument and the recommended operating and maintenance procedures for the device as provided in writing by its manufacturer, which information shall be kept until a monitoring device or instrument is replaced.

1.9 Retention and Availability of Records

- a. The Permittee shall retain all records and logs required by this permit for at least five years from the date of entry (unless a longer retention period is specified by a particular provision), keep the records at a location at the plant that is readily accessible to the Illinois EPA or USEPA, and make records available for inspection and copying by the Illinois EPA or USEPA upon reasonable request.
- b. The Permittee shall retrieve and print on paper during normal plant 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 plant inspection.

1.10 Addresses for the Illinois EPA

- a. Any required reports and notifications required by this permit shall be sent to the Illinois EPA Air Compliance Section in Springfield.

- b. A copy of all required reports and notifications shall also be sent to the Illinois EPA's Regional Field Office for Central Illinois.

1.11 Authorization for Operation

This oxy-combustion power plant may be operated pursuant to this permit until a Clean Air Act Permit Program (CAAPP) permit is issued for the source that addresses this project provided that the initial performance testing required by the NSPS and NESHAP for the oxy-combustion boiler is completed in a timely manner and a timely application for modification of the CAAPP permit for this source is submitted to address this project in accordance with Section 39.5(5)(x) of the Act. This condition supersedes Standard Condition 6.

1.12 Standard Permit Conditions

Standard conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply to this project, unless superseded by other conditions in the permit. (Refer to Attachment 2.)

SECTION 2: UNIT-SPECIFIC CONDITIONS FOR PARTICULAR EMISSION UNITS

SECTION 2.1: UNIT-SPECIFIC CONDITIONS FOR THE OXY-COMBUSTION BOILER

2.1.1 Description

The affected boiler for the purpose of these unit-specific conditions is the new oxy-combustion boiler and its control train and the associated Compression Purification Unit (CPU). The control train for the boiler will include a circulating dry scrubber (for SO₂) and a baghouse (for PM). The CPU will be preceded by a polishing scrubber and include another baghouse to prepare the gas for CO₂ separation in the CPU. These devices will act to further control SO₂ and PM emissions of the boiler.

This boiler will have two modes of normal operation, air firing and oxy-combustion. Startup of this boiler will begin on oil using air for combustion like a typical coal-fired boiler. The oil-fired igniters will maintain stable combustion until the boiler can sustain firing of coal. Emissions will occur through the boiler stack. Startup on air will continue until stable operation is achieved with air. The boiler can then transition to the oxy-combustion mode. The oxygen stream from the Air Separation Unit and recycled flue gas will then be substituted for air beginning the transition to oxy-combustion. At this point, the flue gas from the boiler can begin to be processed in the CPU and emissions will occur through the CPU stack. The CO₂ stream from the CPU can then begin to be sequestered when it meets the specifications for sequestration. In the event of an upset in the operation of the boiler or an outage or upset in the CO₂ pipeline or the sequestration facility, the boiler can transition back into air firing mode.

2.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Oxy-Combustion Utility Boiler	Pulverized Coal-Fired Boiler, with Supplemental Oil	Low-NOx Burners, Advanced Combustion Management System, Circulating Dry Scrubber and Baghouse
	Compression Purification Unit, with Polishing Scrubber and Polishing Baghouse	

2.1.3-1 Applicable Federal Emission Standards

- a. The affected boiler is subject to the New Source Performance Standard (NSPS) for Electric Utility Steam Generating Units, 40 CFR 60 Subpart Da, and the general Provisions of the NSPS, 40 CFR 60 Subpart A. The emissions from the affected boiler shall not exceed the following standards, pursuant to the NSPS on and after the date the applicable performance test required to be conducted under 40 CFR 60.8 is or should be completed.
 - i. SO₂: 1.0 lbs/MWh gross energy output or, alternatively, overall 97 percent reduction, on a 30-day rolling average, pursuant to 40 CFR 60.43Da(1)(1)(i) or (iii).

- ii. A. NO_x (expressed as NO₂): 0.70 lb/MWh of gross energy output, on a 30-day rolling average, pursuant to 40 CFR 60.44Da(g)(1)(i); or alternatively,
 - B. NO_x (expressed as NO₂) plus CO: 1.1 lbs/MWh gross energy output, on a 30-day rolling average, pursuant to 40 CFR 60.45Da(b)(1)(i).
 - iii. PM: 0.09 lb/MWh of gross energy output pursuant to 40 CFR 60.42Da(e)(1)(i)(A). During periods of startup and shutdown, the Permittee shall meet the work practice standards of 40 CFR 63 Subpart UUUUU, pursuant to 40 CFR 60.42Da(e)(2).
 - iv. Opacity: 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent opacity, unless the Permittee conducts continuous emissions monitoring for PM according to the requirements of this NSPS, as provided for by 40 CFR 60.42Da(b).
- b. The affected boiler is an "electrical generating unit" (EGU) that is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) from Coal and Oil-Fired Electric Utility Steam Generating Units, 40 CFR 63 Subpart UUUUU and related provisions in 40 CFR 63 Subpart A (see 40 CFR 63.10040 and Table 9 of 40 CFR 63 Subpart UUUUU for applicable provisions).
- i. At all times, except for periods that meet the definitions of startup and shutdown in 40 CFR 63.10042, the emissions from the affected boiler shall not exceed the following standards pursuant to the NESHAP, 40 CFR 63.9991, on and after the date the applicable performance test required to be conducted under 40 CFR 63.7 is or should be completed. Compliance with these limitations shall be demonstrated in accordance with the applicable provisions of this NESHAP, including 40 CFR 63.10000, 63.10005 and 63.10011.
 - A. Particulate HAP:
 - PM (Filterable): 0.090 lb/MWh of gross electric output, on a 30-day rolling average basis; or
 - Total non-mercury HAP Metals: 0.06 lb/GWh; or
 - Individual non-mercury HAP Metals: Limits set in 40 CFR 63 Subpart UUUUU, Table 1.
 - B. Acid Gas:
 - Hydrogen chloride (HCl): 0.010 lb/MWh, or
 - SO₂: 1.0 lb/MWh
 - C. Mercury:

For coal that is not low rank coal, 0.003 lb/GWh,
For low rank coals, 0.04 lb/GWh.

- ii. For startup of the affected boiler, the Permittee must comply with applicable requirements of this NESHAP, including the following requirements pursuant to 40 CFR 63.9991 and 63.10000 and Table 3 of 40 CFR 63 Subpart UUUUU.
 - A. Operate all continuous monitoring systems (CMS) during startup.
 - B. For startup of a unit, the Permittee must use clean fuels, either natural gas or distillate oil or a combination of clean fuels for ignition.
 - C. Once the Permittee converts to firing coal, the Permittee must engage all of the applicable control technologies for the coal-boiler except the dry scrubber.
 - D. The Permittee must start the dry scrubber appropriately to comply with relevant standards applicable during normal operation.
 - E. The Permittee must keep records during periods of startup.
 - F. The Permittee must provide reports concerning activities and periods of startup, as specified in 40 CFR 63.10011(g) and 63.10021(h) and (i).
- iii. For shutdown of the affected boiler, the Permittee must comply with applicable requirements of this NESHAP, including the following requirements pursuant to 40 CFR 63.9991 and 63.10000 and Table 3 of the 40 CFR 63 Subpart UUUUU.
 - A. The Permittee must operate all CMS during shutdown.
 - B. During shutdown, the Permittee must operate all applicable control technologies for the coal-boiler while firing coal.
 - C. The Permittee must keep records during periods of shutdown.
 - D. The Permittee must provide reports concerning activities and periods of shutdown, as specified in 40 CFR 63.10011(g) and 40 CFR 63.10021(h) and (i).
- c. Under Title IV of the Clean Air Act, Acid Deposition Control, and 40 CFR 76.7(a)(2), the NO_x emissions of the affected boiler are subject to an annual average limit of 0.46 lb/mmBtu.

2.1.3-2 Applicable State Emission Standards

- a. Pursuant to 35 IAC 212.122(a), the emission of smoke or other particulate matter from the affected boiler shall not have opacity greater than 20 percent, 6-minute average, except as provided for by 35 IAC 212.122(b) or 35 IAC Part 201 Subpart I.
- b. Pursuant to 35 IAC 212.204 and 212.206, no person shall cause or allow the emission of PM into the atmosphere from the affected boiler to exceed 0.15 kg of particulate matter per MW-hour of actual heat input (0.1 lbs/mmBtu) in any one hour period.
- c.
 - i. Pursuant to 35 IAC 214.182, the total emissions of SO₂ into the atmosphere in any one hour period from the affected boiler shall not exceed the emission rate determined by the equation in 35 IAC 214.183(a).
 - ii. Pursuant to 35 IAC 214.121, the sulfur content of fuel oil fired in the affected boiler shall not exceed 0.15 lb/mmBtu.
- d. Pursuant to 35 IAC 216.121, when operating in air firing mode, the CO emissions into the atmosphere from the affected boiler shall not exceed 200 ppm, corrected to 50 percent excess air.
- e. Pursuant to 35 IAC 217.706, the NO_x emissions of the affected boiler shall not exceed 0.25 lbs/mmBtu of actual heat input during each ozone control period, based on a control period average for that unit (May 1 - September 30).
- f. Pursuant to 35 IAC 225.230(a)(1), the emissions of mercury from the affected boiler shall comply with one of the following standards on a rolling 12-month basis:
 - i. An emissions standard of 0.0080 lb/GWh gross electrical output; or
 - ii. A minimum 90 percent reduction of input mercury.

2.1.4 Non-Applicability Provisions

- a. For emissions of CO, the affected boiler is not subject to 35 IAC 216.121 during oxy-combustion firing mode.
- b.
 - i. For emissions of NO_x, the affected boiler is not subject to 35 IAC Part 217 Subpart M. This is because the affected boiler does not meet the applicability criteria in 35 IAC 217.150, i.e., the affected boiler is not located in an area in which these rules may apply.
 - ii. For emissions of NO_x, the Permittee is not eligible to comply with 35 IAC 217.706 in 35 IAC Part 217 Subpart V for the affected boiler by NO_x averaging. This is because the affected boiler does not meet the eligibility criteria

for 35 IAC 217.708, i.e., the affected boiler is a new unit and is not listed in 35 IAC Part 217, Appendix F.

- c. For emissions of mercury, the affected boiler is not eligible to comply with 35 IAC Part 225 by means of the multi-pollutant standard under 35 IAC 225.233. This is because the affected boiler is a "new boiler" and does not meet the eligibility criteria in 35 IAC 225.233(a)(2)(A).

2.1.5 Operational Requirements

- a. Pursuant to the NESHAP, 40 CFR 63.9991 and Table 4 of 40 CFR 63 Subpart UUUUU, if the Permittee elects to use a continuous particulate monitoring system (CPMS) to demonstrate compliance with the NESHAP for PM, the Permittee shall maintain the 30-boiler operating day rolling average PM (CPMS) output determined in accordance with the requirements of 40 CFR 63.10023(b)(2) at or below the highest 1-hour average measured during the most recent performance test run demonstrating compliance with the emissions limit(s) of 40 CFR 63 Subpart UUUUU for filterable PM, total non-mercury HAP metals or individual non-mercury HAP metals.
- b.
 - i. Pursuant to the NESHAP, 40 CFR 63.9991 and Table 3 of 40 CFR 63 Subpart UUUUU, the Permittee shall conduct a tune-up of the burner(s) and combustion controls of the affected boiler at least each 36 calendar months, or each 48 calendar months if neural network combustion optimization software is employed, as specified in 40 CFR 63.10021(e).
 - ii. Subsequent tune-ups shall be conducted as specified in 40 CFR 63.10006.

2.1.6 Operational and Emission Limits

- a. The heat input to the affected boiler from fuel shall not exceed 14,500,000 mmBtu/year.
- b. The emissions of the affected boiler shall not exceed the following limits:

Pollutant	Limits	
	Pounds/Hour ^a	Tons/Year
NOx	--- ^b	1,691.7
SO ₂	--- ^b	322.4
PM	7.45	32.6
PM ₁₀ /PM _{2.5}	14.72	64.5
VOM	2.65	11.6
CO	110	481.8
Sulfuric Acid Mist	1.70/2.97 ^c	10.5
Lead	0.034	0.15
Fluorides	0.63	2.8
CO ₂	--- ^b	1,448,759

GHG (as CO ₂ e)	331,947	1,453,928
Individual HAP	---	2.8
Total HAP	---	19.86

Notes:

- a. Limits apply as three-hour averages, except for the limit for CO₂e, which applies as an annual average, rolled monthly.
- b. Short-term emission limits are not set because continuous monitoring is required for this pollutant.
- c. The limits of 1.70 and 2.97 pounds/hour apply for oxy-combustion mode and other modes of operation, respectively.

2.1.7 Emission Testing

a. NSPS Testing

For the affected boiler, for emissions of pollutants that are subject to the NSPS (PM, SO₂, NO_x and, if applicable, CO), the Permittee shall fulfill applicable requirements for performance testing in the NSPS, 40 CFR 60.8 and 60.50Da, using the methods and procedures specified by the NSPS.

Note: It is expected that the Permittee will need to obtain approval from USEPA for use of alternative test methods, as provided for by 40 CFR 60.8(b). This is because established methods were not designed for testing of oxy-combustion boilers.

b. NESHAP Testing

For the affected boiler, the Permittee shall also fulfill applicable requirements of the NESHAP, 40 CFR 63.10006, for emissions testing, using the methods and procedures specified by the NESHAP (see 40 CFR 63.10007).

Note: It is expected that the Permittee will need to obtain approval from USEPA for use of alternative test methods, as provided for by 40 CFR 63.7(e) and (f).

c. Other Emission Testing

i. The Permittee shall conduct emissions testing for the affected boiler for filterable PM₁₀ and PM_{2.5}, condensable PM, carbon monoxide, methane and nitrous oxide as specified below, provided, however, that:

- A. If the Permittee considers all PM emissions to be emissions of filterable PM₁₀ and PM_{2.5}, testing for emissions of filterable PM₁₀ and PM_{2.5} need not be

performed unless specifically requested by the Illinois EPA.

- B. As an alternative to testing for CO, the Permittee may provide emission data for CO that is derived from monitored CO data collected by a CEMS.
 - C. As an alternative to testing for emissions of methane and nitrous oxide, the Permittee may provide data for these pollutants in accordance with 40 CFR Part 98.
- ii. The timing of this testing shall be as follows:
- A. Within one year (365 days) after achieving the maximum production rate at which the affected boiler will be operated, the Permittee shall have initial emission tests conducted while the affected boiler is operating at representative operating conditions.
 - B. Thereafter, the Permittee shall perform emission tests as provided below as requested by the Illinois EPA within 90 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.
- iii. The following methods and procedures shall be used for this testing, unless other methods adopted by or being developed by USEPA or other alternative test methods are approved by the Illinois EPA.
- | | |
|---|-------------|
| Filterable PM ₁₀ & PM _{2.5} | Method 201A |
| Condensable PM | Method 202 |
| Carbon Monoxide | Method 10 |
| Methane and Nitrous Oxide | Method 320 |
- iv. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with Condition 3.1. In addition to other required information, if test runs that are longer than one-hour in duration are planned, the expected duration of the runs and the reason for extended runs shall be explained.
- v. In addition to other information required in a test report, test reports shall include detailed information on the operating conditions of the affected boiler during testing, including:
- A. Representative analys(es) of the coal being fired in the affected boiler;
 - B. Firing rate (mmBtu/hour);
 - C. Significant operating parameters of the affected boiler and the control train;

- D. Opacity of the exhaust from the affected boiler, 6-minute averages and 1-hour averages; and
- E. Turbine/Generator output rate (MW_e gross).

2.1.8 Fuel Sampling and Analysis

If the Permittee is complying with the removal standard for mercury in 35 IAC 225.230(a)(1), the Permittee shall conduct sampling and analysis of the coal supply to the affected boiler for mercury content in accordance with the requirements of 35 IAC Part 225.265.

2.1.9-1 Emissions Monitoring for SO₂ and NO_x

- a. The Permittee shall install, calibrate, maintain, and operate continuous emissions monitoring systems (CEMS) for the SO₂ and NO_x emissions of the affected boiler. These CEMS shall be operated in accordance with the applicable requirements of the NSPS, 40 CFR 60.13 and 60.49Da, the federal Acid Rain Program and Title IV provisions, 40 CFR Part 75, and the CAIR NO_x and SO₂ Trading Programs, 40 CFR 96 Subpart H (See also 35 IAC 217.710(a), 225.310(c), 225.410(c) and 225.510(c)).

Note: It is expected that the Permittee will need to obtain approval from USEPA for use of alternative monitoring methods, for this monitoring and other monitoring addressed by Conditions 2.1.9-2 through 2.1.9-8, as provided for by 40 CFR 60.13(i), 40 CFR 75 Subpart E, and 40 CFR 96.75. As USEPA approves any such alternative monitoring, it would substitute for the monitoring requirements identified in this permit.

- b. Pursuant to 40 CFR 60.49Da(s), the Permittee shall prepare and submit to the Illinois EPA for approval a unit-specific monitoring plan for the SO₂ and NO_x monitoring systems and other emission monitoring systems on the affected boiler required by the NSPS, at least 45 days before commencing certification testing of these monitoring systems. The Permittee shall operate and maintain the monitoring systems in accordance with this plan.

2.1.9-2 Monitoring for PM

- a. Pursuant to 40 CFR 60.49Da(t), because the Permittee is demonstrating compliance with the output-based emission limits under 40 CFR 60.42Da, for the affected boiler, the Permittee shall either:
 - i. Install, certify, operate, and maintain a CEMS for measuring PM emissions according to the requirements of 40 CFR 60.49Da(v); or
 - ii. Install, calibrate, operate, and maintain a PM CPMS according to the requirements for new facilities specified in 40 CFR 63 Subpart UUUU.

Note: If the Permittee were demonstrating compliance with the input-based emissions limit in 40 CFR 60.42Da, it could conduct monitoring for PM emissions according to the requirements of 40 CFR 60.49Da(v).

- b. Pursuant to 40 CFR 63.10010, the Permittee shall install, certify, operate, and maintain the CEMS or CPMS for PM emissions of the affected boiler as specified in 40 CFR 63.10010.

2.1.9-3 Emissions Monitoring for CO

Pursuant to 40 CFR 60.49Da(u), for the affected boiler, if the Permittee elects to comply with the alternative NSPS standard for NOx plus CO, the Permittee shall install, certify, operate, and maintain a CEMS for CO emissions as specified in 40 CFR 60.49Da (u)(1) through (4).

2.1.9-4 Emissions Monitoring for Mercury

- a.
 - i. Pursuant to NESHAP, 40 CFR 63.10000(c)(1)(vi), for the affected boiler, the Permittee shall install, certify, operate, and maintain a CEMS or sorbent trap monitoring system for mercury as specified in 40 CFR 60 Subpart UUUUU, Appendix A.
 - ii. Pursuant to 35 IAC 225.240, for this monitoring, the Permittee shall also comply with applicable requirements of 35 IAC 225.240, 225.250, 225.260 225.270 and 225.290.
- b. The Permittee shall fulfill other applicable requirements of 35 IAC 225.261 and 225.263 for the affected boiler.

2.1.9-5 Emissions Monitoring for HCl and HF or SO₂

Based upon the emission standard(s) with which the Permittee elects to comply, the Permittee shall fulfill all applicable requirements of the NESHAP, 40 CFR 63 Subpart UUUUU, for monitoring of HCl and HF emissions or monitoring of SO₂ emissions of the affected boiler, including requirements in either 40 CFR 63.10010(e) or (f), respectively, and 40 CFR 63.10020.

2.1.9-6 Emissions Monitoring for CO₂

Pursuant to 40 CFR 60.49Da(a) for the affected boiler, the Permittee shall install, certify, operate and maintain a CEMS for CO₂ emissions. This CEMS shall be operated in accordance with applicable requirements of 40 CFR 75, including 40 CFR 75.10(a)(3).

2.1.9-7 Monitoring for Stack Flow Rate

- a.
 - i. Pursuant to 40 CFR 60.49Da(l), for the affected boiler, the Permittee, as the owner or operator of an affected facility demonstrating compliance with an output-based standard, shall install, certify, operate, and maintain a continuous flow monitoring system meeting the

requirements of Performance Specification 6 of Appendix B of 40 CFR Part 60 and the calibration drift (CD) assessment, relative accuracy test audit (RATA), and reporting provisions of procedure 1 of Appendix F of 40 CFR Part 60, and record the output of the system, for measuring the volumetric flow rate of exhaust gases discharged to the atmosphere; or

- ii. Alternatively, pursuant to 40 CFR 60.49Da(m), the Permittee may use data from a continuous flow monitoring system certified according to the requirements of 40 CFR 75.20(c) and Appendix A to 40 CFR Part 75 and continuing to meet the applicable quality control and quality assurance requirements of 40 CFR 75.21 and Appendix B to Part 75. Flow rate data reported to meet the requirements of 40 CFR 60.51Da shall not include substitute data values derived from the missing data procedures in Subpart D of 40 CFR Part 75, nor shall the data have been bias adjusted according to the procedures of 40 CFR Part 75.

2.1.9-8 Opacity Monitoring

Pursuant to 40 CFR 60.49Da(a), if the affected boiler is subject to the opacity standard of the NSPS, 40 CFR 60.42Da(b), the Permittee shall monitor the opacity of emissions discharged from the affected boiler to the atmosphere with a continuous opacity monitoring system in accordance with the applicable requirements of the NSPS, including 40 CFR 60.49Da(a).

Note: Pursuant to 40 CFR 60.42Da(b), the affected boiler would not be subject to the opacity standard of the NSPS if the Permittee operates a CEMS for PM emissions. (See also Conditions 2.1.3-1(a)(iv) and 2.1.9-2(a)(i).)

2.1.10 Recordkeeping

- a. The Permittee shall maintain the following records for the affected boiler:
 - i. Records of all information needed to demonstrate compliance with the NSPS, including performance tests, opacity observations, monitoring data, fuel analysis, and calculations, consistent with the requirements of 40 CFR 60.7(f) and 60.52Da.
 - ii. Records of all information needed to demonstrate compliance with the NESHAP, including performance tests, monitoring data, fuel analysis, and calculations, consistent with the requirements of 40 CFR 63.10, 63.10032, 63.10033 and Table 8 of the NESHAP.
 - iii. Pursuant to 35 IAC 217.712, records of NO_x emissions during the ozone control period, as required by 40 CFR Part 75 including, but not limited to, 40 CFR 75.54(b) and (d).

- iv. Records of all information required by applicable recordkeeping provisions of 35 IAC Part 225, Subpart B.
- b. The Permittee shall maintain the following records with respect to operation and maintenance of the affected boiler and associated control equipment:
- i. Fuel consumption, in tons and mmBtu, operating hours and number of startups for the affected boiler, on a monthly and annual basis.
 - ii. Daily records of electricity generation.
 - iii. An operating log for the affected boiler that, at a minimum, shall address:
 - A. Each startup of the boiler, including the date and time, and description.
 - B. Each shutdown of the boiler, including the date and time, and description.
 - C. For normal operation, the mode of operation of the boiler, i.e., oxy-combustion or air-firing.
 - D. Each malfunction or breakdown of the affected boiler that significantly impaired emission performance, including a description of the event, corrective actions taken, and preventative actions taken to address similar events.
 - iv. Inspection, maintenance and repair log(s) for the affected boiler and associated control system that, at a minimum, shall identify dates and nature of activities performed related to components that may affect emissions; the reason for such activities, i.e., whether planned or initiated due to a specific event or condition; and any failure to carry out the established maintenance procedures, with explanation.
- c. For the affected boiler, the Permittee shall maintain records of the following items related to emissions:
- i. Daily emissions of NO_x, SO₂, CO₂ and CO, if monitoring is conducted, based on CEMS data.
 - ii. Emissions of NO_x, CO₂, and SO₂, recorded hourly in units of lbs/mmBtu, lbs/hour or tons/hour, which shall be calculated based on the pollutant concentration according to the applicable procedures pursuant to 40 CFR Part 75.
 - iii. Total daily, monthly and annual emissions of NO_x, CO, PM and SO₂.
 - iv. Total monthly and annual emissions of VOM and CO₂e.

- d. The Permittee shall keep records for opacity determinations for the affected boiler made in accordance with Method 9 that it makes or that are made on its behest.
- e. The Permittee shall record the information specified by Condition 3.3 for any period during which the affected boiler deviated from an applicable emission standard, emission limit or other requirement.
- f. The Permittee shall maintain records of the amount of CO₂ from the affected boiler that is sequestered (tons/month).

2.1.11 Notification and Reporting

- a. For the affected boiler, the Permittee shall fulfill all applicable notification and reporting requirements in the NSPS, 40 CFR 60.7(c) and 60.51Da.
- b. For the affected boiler, the Permittee shall fulfill all applicable notification and reporting requirements in the NESHAP, including 40 CFR 63.9, 63.10, 63.10030 and 63.10031.
- c.
 - i. Either as part of the periodic NSPS report or accompanying such report, the Permittee shall report to the Illinois EPA any and all emissions and opacity measurements for the affected boiler that are in excess of the applicable standards or limits set by this permit. These reports shall provide for each such incident, the pollutant emission rate, the date and duration of the incident, and whether it occurred during startup, malfunction, breakdown or shutdown. If an incident did not occur during startup, the corrective actions and actions taken to prevent or minimize future reoccurrences shall also be reported.
 - ii. These reports shall also be submitted for each occurrence of excess emissions from the affected boiler due to malfunction or breakdown, as addressed by the records required by Condition 2.1.10(e), when corrective actions did not promptly restore acceptable emission levels and the shutdown of the affected boiler was not then immediately initiated but was deferred. This report shall include a copy of the relevant records and additional explanation by the Permittee.
- d. The Permittee, as the owner or operator of an electricity generating unit (EGU) subject to the requirements of 35 IAC Part 217 Subpart V, shall comply with the following reporting requirements for the affected boiler, pursuant to 35 IAC 217.712:
 - i. Comply with the 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).

- ii. Submit the certification statement specified by 35 IAC 217.712(c), signed by a responsible official.
 - iii. By November 30 of each year, submit to the Illinois EPA a report that demonstrates each EGU has not exceeded a NOx emission rate of 0.25 lbs/mmBtu during the ozone control period.
 - iv. Keep and maintain, for 5 years, all records and data necessary to demonstrate compliance with the requirements, and upon request make such records and data available to Illinois EPA and USEPA representatives for inspection and copying during working hours.
 - v. Submit copies of any records and data required by 35 IAC 217.712 to the Illinois EPA within 30 days after receipt of a written request by the Illinois EPA.
- e. The Permittee shall fulfill the applicable notification and reporting requirements of 35 IAC Part 225 Subpart B.
- f. The Permittee shall notify the Illinois EPA of deviations from applicable requirements for the affected boiler as follows. These notifications shall include the information specified by Condition 3.4.
- i. Deviations from applicable emission standards or work practices of the NSPS, NESHAP, 35 IAC Part 217 Subpart V, or 35 IAC Part 225 shall be reported in the compliance reports required by these rules.
 - ii. Other deviations from applicable requirements shall be reported in a quarterly report.

SECTION 2.2: UNIT-SPECIFIC CONDITIONS FOR THE AUXILIARY BOILER

2.2.1 Description

The affected boiler for the purpose of these unit-specific conditions is the distillate oil-fired auxiliary boiler that will supply steam to support the operation of the plant. Unlike the oxy-combustion boiler, the steam from this auxiliary boiler will not be sent to the steam turbine generator to produce electricity for sale to the grid.

2.2.2 List of Emission Units

Emission Unit	Description	Control Measures
Auxiliary Boiler	Distillate oil-fired boiler	Low-NOx Combustion

2.2.3-1 Applicable Federal Emission Standards

- a. i. The affected boiler is an affected facility under the federal NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subpart Dc. For the affected boiler, the Permittee must comply with applicable requirements of this NSPS and applicable requirements of 40 CFR 60 Subpart A, General Provisions.
- ii. Pursuant to the NSPS, 40 CFR 60.43c(c), opacity from the affected boiler shall not exceed 20 percent, as measured on a six minute average, except for one six-minute period per hour of not more than 27 percent opacity. As provided by 40 CFR 60.43c(d), this limit applies at all times except during periods of startup, shutdown, or malfunction, as defined at 40 CFR 60.2. However, exceedances during such periods shall be reported as deviations.
- iii. A. Pursuant to the NSPS, 40 CFR 60.42c(d), the sulfur content of the fuel oil burned in the affected boiler shall not be greater than 0.5 percent by weight (30-day rolling average). This limit applies at all times, including periods of startup, shutdown and malfunction.
- B. Pursuant to 40 CFR 60.42c(h), compliance with the SO₂ emission limit or the fuel oil sulfur limit may be determined based on a certification from the fuel supplier as provided by 40 CFR 60.48c(f).
- b. i. The affected boiler is an affected facility under the federal NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63 Subpart JJJJJJ. For the boiler, the Permittee must comply with applicable requirements of this NESHAP, including the following. The Permittee must comply with applicable requirements of 40 CFR 63 Subpart A, General Provisions, (see 40 CFR 63.11235 and Table 8 of 40 CFR 63 Subpart JJJJJJ for specific applicable general provisions).

- ii. Pursuant to 40 CFR 63.11205(a), at all times the Permittee must operate and maintain the affected boiler, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require further efforts to reduce emissions if levels required by this standard have been achieved.
- iii. Pursuant to 40 CFR 63.11210(f), the Permittee shall complete biennial or 5-year tune-ups of the affected boiler, as applicable, as specified in 40 CFR 63.11223 beginning no later than 25 months or 61 months, respectively, after the initial startup of the affected boiler.

2.2.3-2 Applicable State Emission Standards

- a. Pursuant to 35 IAC, Chapter B, Subchapter c, emissions from the affected boiler shall not exceed the following standards, which apply on an hourly basis:

Pollutant	Standard	Limit
PM	35 IAC 212.206	0.10 lb/mmBtu
SO ₂	35 IAC 214.122(b)(2)	0.3 lb/mmBtu
CO	35 IAC 216.121	200 ppm, @50% excess air

- b. Pursuant to 35 IAC 212.123(a), the emission of smoke or other particulate matter from the affected boiler shall not have an opacity greater than 30 percent, 6-minute average, except as provided by 35 IAC 212.123(b) or Part 201 Subpart I.

2.2.4 Non-Applicability Provisions

- a.
 - i. This permit does not address the standards of the NSPS for PM and SO₂ emissions because the affected boiler is not subject to such standards as low-sulfur oil that meets the criteria in 40 CFR 60.43c(e)(4) and 63.11210(e) must be used in the affected boiler. (See Condition 2.2.5(b).)
 - ii. As provided by the NSPS, 40 CFR 60.47c(c), the Permittee is not required to operate a continuous opacity monitor for the affected boiler pursuant to the NSPS. This is because the fuel oil burned in the boiler will have a sulfur content of no more than 0.5 percent by weight, the boiler will not use post-combustion technology to reduce SO₂ or PM emissions, and the applicable procedures in 40 CFR 60.48c(f) will be followed.
- b. For emissions of NO_x, the affected boiler is not subject to 35 IAC Part 217 Subpart E. This is because the source is not located in one of the designated areas listed in 35 IAC 217.150(a)(1)(A).
- c. The affected boiler is not subject to the provisions of Title IV of the federal Clean Air Act (Acid Program) because the

boiler does not qualify as a utility unit or an electrical generating unit for the purpose of these provisions.

2.2.5 Operational Requirements, Work Practices and Production Limits

- a. The nominal rated heat input capacity of the affected boiler shall not exceed 95 mmBtu/hour.
- b. The fuel fired in the affected boiler shall meet the specifications in 40 CFR 60.43c(e)(4) and 63.11210(e).
- c. Pursuant to 40 CFR 63.11223 and Table 2 of 40 CFR 63 Subpart JJJJJJ, the Permittee shall conduct biannually tune-ups of the affected boiler as specified in 40 CFR 63.11223.
- d. The steam from the affected boiler shall not be used to produce electricity for commercial sale.

2.2.6 Emission Limits

The emissions of the affected boiler shall not exceed the following limits.

Pollutant	Limit	
	Pounds/Hour	Tons/Year
NOx	9.5	41.6
CO	3.5	15.4
PM	2.9	12.5
PM ₁₀ /PM _{2.5}	3.8	16.6
VOM	0.4	1.66
SO ₂	---	0.62
GHG, as CO ₂ e	15,542	68,075
Total HAP	---	0.14

2.2.7-1 Performance Tests Pursuant to the NSPS

- a. The Permittee shall conduct an initial performance test related to the SO₂ emissions of the affected boiler pursuant to 40 CFR 60.44c(g) (fuel sampling and analysis) or 40 CFR 60.44c(h) (fuel supplier certification).
- b. Pursuant to 40 CFR 60.47c(a), if the Permittee elects not to use a continuous opacity monitoring system (COMS) (see Condition 2.2.8-2(a)), the Permittee shall conduct a performance test using USEPA Method 9 and the procedures in 40 CFR 60.11 to demonstrate compliance with the applicable opacity limit in 40 CFR 60.43c within 180 days after initial startup of the affected unit. The Permittee shall follow appropriate procedures of the NSPS for this performance test, including notification and reporting in accordance with 40 CFR 60.8.

2.2.7-2 Emission Testing Requirements

- a. The Permittee shall have emissions testing performed for the affected boiler as follows at its expense by a qualified testing service under representative operating conditions:
 - i. Within one year after initial startup of the oxy-combustion boiler, the Permittee shall have tests conducted for emissions of NOx and CO.
 - ii. Thereafter, the Permittee shall have tests conducted as requested by the Illinois EPA within 90 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.
- b. USEPA test methods and procedures, including the following test methods shall be used for this testing unless use of other methods adopted or endorsed by USEPA or being developed by USEPA are approved by the Illinois EPA.

Nitrogen Oxide	Method 19
Carbon Monoxide	Method 10

- c. i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 3.1.
- ii. In addition to other information required in a test report, these test reports shall include detailed information on the operating conditions of an affected boiler during testing, including:
 - A. Fuel consumption;
 - B. Firing rate (mmBtu/hour) and other significant operating parameters of the affected boiler;
 - C. Opacity of the exhaust, 6-minute averages, as determined by USEPA Method 9 or by continuous opacity monitoring.

2.2.8-1 Fuel Sampling

If the Permittee does not demonstrate compliance with the requirements for the sulfur content of fuel oil by supplier certification in accordance with 40 CFR 60.48c(e)(11) and 60.48c(f)(1), the Permittee shall conduct sampling and analysis of the oil supply for the affected boiler in accordance with 40 CFR 60.46c(d).

2.2.8-2 Opacity Monitoring

Pursuant to 40 CFR 60.47c, for the affected boiler, the Permittee shall comply with the requirements of the NSPS for monitoring of opacity by either:

- a. Installing, calibrating, maintaining and operating a continuous opacity monitoring system in accordance with 40 CFR 60.47c(a) and (b); or
- b. Conducting performance tests for opacity by USEPA Method 9 in accordance with 40 CFR 60.47c(a) (initial testing) and 40 CFR 60.47c(a)(1), (a)(2) or (a)(3), as applicable (subsequent periodic testing) and either:
 - i. Operating according to a written site-specific monitoring plan approved by the Illinois EPA that addresses operating parameters for the affected boiler are indicative of compliance with the opacity standard, in accordance with 40 CFR 60.47c(f)(3); or
 - ii. Calibrating, maintaining and operating a continuous PM CEMS in accordance with 40 CFR 60.47c(d).

2.2.9 Recordkeeping Requirements

- a. The Permittee shall keep the applicable records required by the NSPS, 40 CFR 60 Subpart Dc, for the affected boiler, including:
 - i. Records of oil supplier certification used to demonstrate compliance with the NSPS SO₂ standard in Condition 2.2.3-1(a)(iii), including the information described under 40 CFR 60.48c(f)(1).
 - ii. Records of the amount of each fuel combusted during each calendar month, pursuant to 40 CFR 60.48c(g).
- b. The Permittee shall keep the applicable records required by the NESHAP, 40 CFR 63 Subpart JJJJJJ, for the affected boiler, including records as required to demonstrate continuous compliance with the work practice and management practice standards of 40 CFR 63.11223, pursuant to 40 CFR 63.11225(c).
- c. The Permittee shall maintain a file with the maximum design heat input capacity of the affected boiler, in mmBtu/hour, with supporting documentation.
- d. The Permittee shall maintain an operating log or other records for the affected boiler that, at a minimum, shall include the information specified by Condition 3.2(a) and the following information:
 - i. Information for each startup and shutdown, including date, time and duration, as required by 40 CFR 60.7(c).
 - ii. Information for any incident in which the operation of the affected boiler continued during malfunction or breakdown, including: date, time, and duration; a description of the incident; whether emissions exceeded or may have exceeded any applicable standard; a description of the corrective actions taken to reduce emissions and the duration of the incident; and a

description of the preventative actions taken, as addressed by 40 CFR 60.7(b).

- e. The Permittee shall keep inspection, maintenance, and repair logs for the affected boiler that include the information specified by Condition 3.2(b).
- f. The Permittee shall record the information specified by Condition 3.3 for any period during which the affected boiler deviated from an applicable emission standard, emission limit or other requirement.
- g. The Permittee shall maintain the following records related to emissions from the affected boiler:
 - i. A file containing calculations for the maximum hourly emission rates (lbs/hour), with supporting documentation.
 - ii. Records of other data, not addressed above, used or relied upon by the Permittee to determine emissions.
 - iii. Records of emissions of NO_x, CO, PM/PM₁₀/PM_{2.5}, VOM, SO₂, and GHG (tons/month and tons/year) with supporting calculations.
- h. The Permittee shall keep records for opacity determinations for the affected boiler made in accordance with Method 9 that it makes or that are made on its behest.

2.2.10 Notification and Reporting Requirements

- a. For the affected boiler, the Permittee shall provide all notifications and reports required by the NSPS, including:
 - i. The date construction of the affected boiler commenced, postmarked no later than 30 days after such date, pursuant to 40 CFR 60.7(a)(1).
 - ii. Notification of the actual date of initial startup of the affected boiler, postmarked within 15 days after such date, pursuant to 40 CFR 60.7(a)(3) and 60.48c(a), which shall include information on the design heat input capacity and expected annual capacity factor of the boiler pursuant to 60.48c(a).
 - iii. Reports for exceedances of the NSPS opacity standard, pursuant to 40 CFR 60.48c(c).
 - iv. Reports related to the sulfur content of the fuel oil used in the affected boiler, pursuant to 40 CFR 60.48c(d) and (e).
- b. For the affected boiler, the Permittee shall provide all notifications and reports required by the NESHAP, including:

- i. Pursuant to 40 CFR 63.11222(b), the Permittee must report each instance in which the affected boiler did not meet each emission limit and operating limit in Tables 1 and 3 of the NESHAP, 40 CFR 63 Subpart JJJJJJ, that applies. These instances are deviations from the emission limits in this NESHAP. These deviations must be reported according to the requirements in 40 CFR 63.11225.
 - ii. Pursuant to 40 CFR 63.11214(b), the Permittee shall submit a signed statement in the Notification of Compliance Status report that indicates that the performance tune-up under 40 CFR 63.11223(b) was conducted on the affected boiler.
- c. The Permittee shall notify the Illinois EPA of deviations from applicable requirements for the affected boilers as follows. These notifications shall include the information specified by Condition 3.4.
 - i. Deviations from applicable emission standards or work practices of the NSPS or NESHAP, shall be reported in the compliance reports required by these rules.
 - ii. Other deviations from applicable requirements shall be reported in the quarterly report.

SECTION 2.3: UNIT-SPECIFIC CONDITIONS FOR NEW AND MODIFIED COAL HANDLING

2.3.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are the new and modified emission units at the source that will handle coal for the oxy-combustion boiler.

With this project, the amount of coal handled by the existing coal handling operations at the source will decrease due to the shutdown of the existing coal-fired boilers. Coal will continue to be received by barge and truck. Therefore requirements for existing coal-handling operations, which are unchanged and are addressed by existing permits, are not addressed in this permit.

2.3.2 Listing of Emission Units and Air Pollution Control Equipment

Unit	Description	Control Measures
Modified Emission Unit		
Existing Conveyor	Extended to connect to new conveyor	Enclosure/Baghouse
New Emission Units		
New Conveyor	Transfers coal to bin for boiler	Baghouse
Coal Bin	Holds coal supply to boiler	Baghouse

2.3.3-1 Applicable Federal Emission Standards for Coal Handling Operations

- a. The affected units are "affected facilities" subject to the NSPS for Coal Preparation Plants, 40 CFR Part 60 Subpart Y and the General Provisions of the NSPS, 40 CFR 60 Subpart A.
- b. Pursuant to the NSPS, the Permittee shall meet the following opacity and emission limits for the affected units:
 - i. The gases discharged from the affected units shall not exhibit 10 percent opacity or greater. [40 CFR 60.254(b)(1)]
 - ii. The emissions into the atmosphere from the mechanical vents on the affected units shall not contain particulate matter in excess of 0.023 gram/dscm (0.010 grain/dscf). [40 CFR 60.254(b)(2)]
- c. At all times, the Permittee shall maintain and operate the affected units, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.3.3-2 Applicable State Emission Standards

- a. Pursuant to 35 IAC 212.123(a), the emission of smoke or other PM from affected units shall not have an opacity greater than 30 percent, 6-minute average, except as provided by 35 IAC 212.123(b) or 35 IAC Part 201 Subpart I. Compliance with this

limit shall be determined in accordance with 35 IAC 212.109, including use of USEPA Method 9.

- b. With respect to emissions of fugitive PM, affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

2.3.4 Non-Applicability Provisions

- a. This permit is issued based on the affected units not being subject to 35 IAC 212.321 pursuant to 35 IAC 212.323, which provides that 35 IAC 212.321 shall not apply to emission units, such as stock piles, to which, because of the disperse nature of such emission units, such rules cannot reasonably be applied.
- b. This permit is issued based on the affected units not being subject to the requirements of the NSPS, 40 CFR 60.256(b) and (c), for operational monitoring because the potential PM emissions of each unit are less than 25 Mg (28 tons) per year, as provided by 40 CFR 60.256(b)(1).

2.3.5 Operating Requirements

- a. The Permittee shall implement and maintain control measures for the affected units that minimize visible emissions of PM and provide assurance of compliance with the applicable limits and standards in Conditions 2.3.3-1 and 2.3.3-2.
- b. The affected units, including associated control equipment shall be operated and maintained in accordance with good air pollution control practices to minimize emissions.

2.3.6 Emission Limits

The emissions of the affected units, in total, shall not exceed 7.5 and 3.5 tons/year of PM and PM₁₀, respectively.

2.3.7 Performance Testing for PM Emissions and Opacity

- a.
 - i. For the affected units, for PM emissions and opacity, the Permittee shall fulfill applicable requirements in the NSPS, 40 CFR 60.8 and 60.255(b) for initial performance testing using the methods and procedures specified by the NSPS.
 - ii. With the report for these performance tests, the Permittee shall notify the Illinois EPA of the approach that it intends to subsequently follow for periodic performance testing or compliance monitoring under the NSPS for PM emissions and opacity.

- b. Following the initial performance tests, as addressed above, the Permittee shall conduct subsequent performance tests or demonstrate compliance with the NSPS as follows. The Permittee shall notify the Illinois EPA within 30 days if it decides to change its approach to ongoing testing or compliance.
 - i. Subsequent performance tests for PM emissions shall be conducted according to the requirements of 40 CFR 60.255(b)(1)(i) through (iii), as applicable, or the Permittee shall comply with the requirements of 40 CFR 60.255(d), (e) or (f).
 - ii. Subsequent performance tests for opacity shall be conducted according to the applicable requirements of 40 CFR 60.255(b)(2)(i) through (iii) or the Permittee shall comply with 40 CFR 60.255(f) or (g).

2.3.8 Recordkeeping

- a. For the affected units, the Permittee shall keep the applicable records required by the NSPS, 40 CFR 60 Subpart Y, including maintaining a logbook that includes the applicable information specified by 40 CFR 60.258(a).
- b. The Permittee shall maintain file(s), which shall be kept current, that contain the design PM emission rates, in pounds/hour and tons/year, from each affected unit, with supporting documentation and calculations.
- c. The Permittee shall keep records for the total amount of material handled by the affected units, as measured at a point before the oxy-combustion boiler (tons/month and tons/year).
- d. The Permittee shall record the information specified by Condition 3.3 for any period during which an affected unit deviated from an applicable emission standard, emission limit or other requirement.
- e. The Permittee shall maintain the following records for the emissions of the affected units:
 - i. A file containing the standard emission factors used by the Permittee to determine PM emissions from the units, with supporting documentation.
 - ii. Records of PM and PM₁₀ emissions (tons/month and tons/year), with supporting calculations.
- f. The Permittee shall keep records for opacity determinations for the affected units made in accordance with Method 9 that it makes or that are made on its behest.

2.3.9 Reporting Requirements

- a. For the affected units, the Permittee shall provide all notifications and reports required by the NSPS, including

reports of excess emissions in accordance with 40 CFR 60.258(b).

- b. The Permittee shall promptly notify the Illinois EPA of deviations from permit requirements for the affected units, as follows. These notifications shall include the information specified by Condition 3.4.
 - i. The Permittee shall notify the Illinois EPA within 30 days of deviations that continue for more than 24 hours.
 - ii. The Permittee shall report other deviations with the quarterly compliance reports required for the oxy-combustion boiler.

SECTION 2.4: UNIT-SPECIFIC CONDITIONS FOR BULK MATERIAL HANDLING OPERATIONS

2.4.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are the new emission units at the plant that will handle bulk materials other than fuel that are involved with the operation of the plant. Hydrated lime and Trona (mineral sodium carbonate) are received, handled and stored as a raw material for the scrubbers on the oxy-combustion boiler. Fly ash and dry residue from the baghouses and the dry scrubber on the boiler are also handled, temporarily stored, and loaded out from the plant by truck.

2.4.2 Listing of Emission Units and Air Pollution Control Equipment

Unit	Description	Control Measures
Lime System	Handling of Hydrated Lime	Baghouse
Trona System	Handling of Trona	Baghouse
Ash System	Handling of Ash and Residue	Baghouse/Wetting

2.4.3 Applicable State Emission Standards

- a. Pursuant to 35 IAC 212.123(a), the emission of smoke or other PM from affected units shall not have an opacity greater than 30 percent, 6-minute average except as provided by 35 IAC 212.123(b) or 35 IAC Part 201 Subpart I. Compliance with this limit shall be determined in accordance with 35 IAC 212.109, including use of USEPA Method 9.
- b. With respect to emissions of fugitive PM, affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.
- c. The affected units shall comply with the applicable limit of 35 IAC 212.321, which rule limits emissions based on the process weight rate of emission units and allows a minimum emission rate of 0.55 lb/hour for any individual unit.

2.4.4 Non-Applicability Provisions

This permit is issued based on the affected units that handle nonmetallic minerals as defined by 40 CFR 60.671 not being subject to the NSPS for Nonmetallic Mineral Processing Plants, 40 CFR 60 Subpart 000, as these materials are not ground or crushed at the plant.

2.4.5 Operating Requirements

The control devices on the affected units shall be designed to emit no more than 0.02 grains/dry standard cubic foot (gr/dscf).

2.4.6 Emission Limits

The emissions of PM and PM₁₀ from the affected units, in total, shall each not exceed 5.7 tons/year.

2.4.7 Emission Testing

- a. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM emissions at the stacks or vents of affected units, as specified in such request, measured during representative operating conditions, as set forth below.
- b.
 - i. Testing shall be conducted using appropriate USEPA Methods, including either Method 5 or 17.
 - ii. Compliance may be determined from the average of three valid test runs, subject to the limitations and conditions contained in 35 IAC Part 283.
- c. For this testing, the Permittee shall fulfill requirements in Condition 3.1. In addition, the test report shall indicate whether visible emission were present during testing and, if present, include representative data for the opacity or emissions, as determined by USEPA Method 9, for the period of testing.

2.4.8 Inspections

- a.
 - i. The Permittee shall conduct inspections of affected units while they are in operation for the specific purpose of verifying that the control measures for the affected units are being properly operated and maintained. These inspections shall be conducted by supervisory or management personnel or shall be overseen by such personnel. The inspections of the units that handle dry fly ash (i.e., fly ash to which water has not been introduced) shall be conducted at least weekly and the inspections of other units shall be conducted at least monthly, provided however, inspections are not required during weeks or months when the oxy-combustion boiler is not in service.
 - ii. These inspections shall include observation for the presence of visible emissions from buildings in which affected units are located, which observations shall generally be performed in accordance with USEPA Method 22 except that the duration of observations shall only be one minute.
- b. The Permittee shall perform detailed inspections of the filter control devices for affected units while the affected units are out of service. These inspections shall be conducted at least every 24 months.

2.4.9 Recordkeeping

- a. For the affected units, the Permittee shall maintain file(s), which shall be kept current, that contain:
 - i. The maximum operating capacity of the units or group of related units (tons/hour).
 - ii. The design PM emission rates, in pounds/hour and tons/year, from the units, either individually or grouped by related units, with supporting calculations and documentation. The sum of these annual rates shall not exceed the totals in Condition 2.4.6.
 - iii. A demonstration that the units comply with 35 IAC 212.321 at the maximum process weight rate at which they will be operated (tons/hour), with supporting documentation for the emission factors and the efficiency or performance of control devices being relied upon by the Permittee.
- b. For the affected units, the Permittee shall keep records for the amount of material received by or loaded out from the plant by category or type of material (tons/month and tons/year).
- c.
 - i. The Permittee shall keep inspection and maintenance log(s) or other records for the control measures associated with the affected units, including control devices and buildings and enclosures, which include the information specified by Condition 3.2(b).
 - ii. These records shall include the following information for the inspections required by Condition 2.4.8(a):
 - A. Date and time the inspection was performed and name(s) of inspection personnel.
 - B. The observed condition of the control measures for each affected unit.
 - C. A description of any maintenance or repairs associated with established control measures that are recommended as a result of the inspection.
 - D. A summary of the observed implementation or status of control measures.
 - iii. These records shall include the following information for the inspections of control devices required by Condition 2.4.8(b):
 - A. Date and time the inspection was performed and name(s) of inspection personnel.
 - B. The observed condition of the control device.
 - C. A summary of any maintenance or repairs that is recommended as a result of the inspection.

- D. A summary of the observed condition of the device as related to its ability to reliably and effectively control PM emissions.
- d. The Permittee shall record the information specified by Condition 3.3 for any period during which an affected unit deviated from an applicable emission standard, emission limit or other requirement.
- e. The Permittee shall maintain the following records for the emissions of the affected units:
 - i. A file containing the standard emission factors used by the Permittee to determine PM emissions from the units, with supporting documentation.
 - ii. Records of PM emissions based on operating data for the unit(s) and appropriate emission factors, with supporting documentation and calculations.
- f. The Permittee shall keep records for opacity determinations for the affected unit made in accordance with Method 9 that it makes or that are made on its behest.

2.4.10 Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA of deviations from permit requirements for the affected units, as follows. These notifications shall include the information specified by Condition 3.4.
 - i. The Permittee shall notify the Illinois EPA within 30 days of deviations that continue for more than 24 hours.
 - ii. The Permittee shall notify the Illinois EPA of other deviations with the quarterly reports required for the oxy-combustion boiler.

SECTION 2.5 UNIT-SPECIFIC CONDITIONS FOR THE COOLING TOWERS

2.5.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are the main cooling tower at the source, which will be rebuilt, and two new cooling towers, which will supply the cooling water now needed by the plant.

The cooling towers are sources of particulate emissions because of mineral material present in the water supply for the towers. This material is emitted to the atmosphere with water droplets that escape from the cooling tower or completely evaporate. These particulate emissions are controlled by the drift eliminators on the towers, which collect water droplets entrained in the air passing through the tower.

2.5.2 List of Emission Units and Air Pollution Control Equipment

Unit	Description	Control Measures
DCCPS Cooling Tower	New cooling tower serving the Direct Contact Cooler Polishing Scrubber (DCCPS)	Drift Eliminator
ASU/CPU Cooling Tower	New cooling tower serving the Air Separation Unit and Compression Purification Unit	Drift Eliminator
Main Cooling Tower	Rebuilt cooling tower serving the Steam Turbine Generator	Drift Eliminators

2.5.3 Applicable Emission Standards

- a. Pursuant to 35 IAC 212.123(a), the emission of smoke or other PM from each affected unit shall not have opacity greater than 30 percent, 6-minute average, except as provided by 35 IAC 212.123(b) and 35 IAC Part 201 Subpart I. Compliance with this limit shall be determined in accordance with 35 IAC 212.109, including use of USEPA Method 9.
- b. Each affected unit shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.
- c. The emissions of PM from each affected unit shall comply with the applicable limit pursuant to 35 IAC 212.321.

2.5.4 Non-Applicability Provisions

This permit is issued based on the affected units not being subject to the NESHAP for Industrial Process Cooling Towers (40 CFR 63 Subpart Q) because chromium-based water treatment chemicals will not be used.

2.5.5 Operating Requirements

- a. Chromium-based water treatment chemicals, as defined in 40 CFR 63.401, shall not be used in the affected units.
- b.
 - i. Only non-VOM additives shall be used in the affected units.
 - ii. Plant process wastewater shall not be introduced into cooling water for the Main Cooling Tower, other than through unintentional leaks, which shall promptly be repaired.
- c. The Permittee shall operate and maintain the affected units, including the drift eliminators, in a manner consistent with good air pollution control practices for minimizing emissions. For this purpose, the Permittee shall operate and maintain the affected units in accordance with written procedures, which procedures shall be kept current.

2.5.6 Emission Limits

The emissions of the affected units, in total, shall not exceed 4.6 and 4.4 tons/year of PM and PM₁₀, respectively, as determined by appropriate emission factors and calculations.

2.5.7 Sampling and Analysis of Cooling Water

- a. The Permittee shall sample and analyze the water being circulated in each affected unit for total dissolved solids content on at least a quarterly basis. Measurements of the total dissolved solids content in the wastewater discharge associated with an affected unit, as required by a National Pollution Discharge Elimination System permit, may be used to satisfy this requirement if the effluent has not been diluted or otherwise treated in a manner that would significantly reduce its total dissolved solids content.
- b. Upon written request by the Illinois EPA, the Permittee shall promptly have the water circulating in an affected unit sampled and analyzed for the presence of hexavalent chromium in accordance with the procedures of 40 CFR 63.404(a) and (b).
- c. The Permittee shall keep records for this sampling and analysis activity, including documentation for sampling and analysis as well as the resulting data that is collected.

2.5.8 Records

- a. The Permittee shall keep a file that contains the following information for each affected unit:
 - i. The design loss specification for the drift eliminators installed in the unit.

- ii. The supplier's recommended procedures for inspection and maintenance of the drift eliminators.
 - iii. The operating factors, if any, used to determine the amount of water circulated in the unit and the PM and PM₁₀ emissions from the unit, with supporting documentation.
 - iv. Copies of the Material Safety Data Sheets or other comparable information from the suppliers of the various water treatment chemicals that are added to the water circulated in the units.
- b. The Permittee shall keep the records for the amount of water circulated in each affected unit (gallons/month). As an alternative to direct data for water flow, these records may contain other relevant operating data for a unit (e.g., water flow to the unit) from which the amount of water circulated in the unit may be reasonably determined.
 - c. The Permittee shall maintain an operating log or other similar records for the affected units that include the information specified in Condition 3.2(a).
 - d. The Permittee shall keep inspection and maintenance logs or other records for the affected units, including the drift eliminators in the units, which shall include the information specified in Condition 3.2(b).
 - e. The Permittee shall record the information specified by Condition 3.3 for any period during which an affected unit deviated from an applicable emission standard, emission limit or other requirement.
 - f. The Permittee shall maintain records for the PM and PM₁₀ emissions of the affected units (tons/month and tons/year), with supporting calculations.

2.5.9 Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA of deviations of an affected unit with permit requirements, as follows. These notifications shall include the information specified by Condition 3.4.
 - i. If a cooling tower is damaged so there is a deviation from an applicable requirement that is not repaired or otherwise corrected within 48 operating hours, the Permittee shall notify the Illinois EPA as soon as possible during normal working hours, but no later than seven days after the event occurred.
 - ii. All other deviations shall be reported in a quarterly report, which reports shall be submitted with the periodic compliance reports required for the oxy-combustion boiler.

SECTION 2.6: UNIT-SPECIFIC CONDITIONS FOR ROADWAYS

2.6.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are roadways and parking areas at the source, which emit fugitive particulate due to vehicle traffic and windblown dust. As part of this project, certain existing roads will be paved so that in the future, the principle roadways at the source will all be paved.

2.6.2 Applicable State Emission Standards

- a. Pursuant to 35 IAC 212.123(a), the emission of smoke or other PM from the affected units shall not have an opacity greater than 30 percent, except as provided by 35 IAC 212.124. Compliance with this limit shall be determined in accordance with 35 IAC 212.104, including use of USEPA Method 9.
- b. Pursuant to 35 IAC 212.301, emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

2.6.3 Operating Requirements

- a. If compliance with the requirements in Conditions 2.6.2 and 2.6.4 necessitates more than implementation of normal housekeeping practices to reduce PM emissions from the affected units, the Permittee shall treat the affected units (e.g., flushing or vacuuming) or carry out other practices for affected units as necessary to assure compliance in accordance with a written operating program that it prepares.
 - i. This program, if required, shall include the following at a minimum:
 - A. Maps or diagrams with the location of affected units, descriptions of the units (length, width and surface material) and volume and nature of expected vehicle traffic.
 - B. Descriptions of the various practices that are implemented for the various affected units to reduce PM emissions of the affected units, including: type of treatment; normal frequency of treatment; for use of dust suppressant, type and concentration of suppressant; the expected effectiveness of the practice(s) in reducing PM emissions, with supporting documentation; the circumstances in which particular practice(s) would not be implemented (e.g., recent precipitation or freezing temperatures); and circumstances in which additional or alternative measures would be implemented (extended hot weather).

- ii. The program shall be prepared and maintained by the Permittee as follows, so the program is kept current:
 - A. An initial program shall be submitted to the Illinois EPA within 30 days of the date that it is determined that such a program is needed.
 - B. Revisions to the program initiated by the Permittee shall be submitted to the Illinois EPA within ten days of the date that the revision takes effect.
 - C. A revised operating program shall be submitted to the Illinois EPA for review within 90 days of a request from the Illinois EPA for revision to address observed deficiencies in control of PM emissions of affected unit(s).
- b. The handling of material collected from the affected units by sweeping or vacuuming trucks shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods to control PM emissions.

2.6.4 Emission Limits

The emissions of PM and PM₁₀ from the affected units, in total, shall not exceed 9.6 and 1.9 tons/year, respectively. Compliance with these limits shall be determined from the amount and nature of vehicle traffic associated with the operation of the plant, specific operating information for affected units and information for the operating program, using a credible emission estimation methodology as developed by USEPA or other recognized authority.

2.6.5 Inspections

- a. The Permittee shall conduct inspections of affected units on at least a quarterly basis for the specific purpose of verifying that normal housekeeping practices are being properly implemented, or if applicable, that the operating program required by Condition 2.6.3(a) for the affected units is being implemented. These inspections shall be conducted by supervisory or management personnel or shall be overseen by such personnel.
- b. The Permittee shall keep records for these inspections, which shall include the following information, at a minimum:
 - i. Date and time the inspection was performed and the name(s) and position(s) of inspection personnel.
 - ii. The observed condition of the control practices for the affected units.
 - iii. A description of any changes to control practices that are recommended as a result of the inspection.

- iv. A summary of the observed implementation or status of the operating program.
- v. If the inspection was not performed by supervisory or management personnel, the name(s) and position(s) of the supervisory or management personnel who oversaw the inspection.

2.6.6 Records

- a. The Permittee shall keep a file that contains:
 - i. The conversion factors used by the Permittee to determine the nature and amount of vehicle traffic associated with the affected units based on the amounts of various materials handled and the PM and PM₁₀ emissions of the affected units, with supporting documentation.
 - ii. The design PM and PM₁₀ emission rates, in tons/year, from the plant considering maximum amounts of vehicle traffic needed to support the operation of the plant, with supporting calculations and documentation.
- b. If the Permittee must implement an operating program pursuant to Condition 2.6.3(a), the Permittee shall maintain records documenting implementation of the operating program, including:
 - i. For each treatment of an affected unit or units that is not automated, identification of the affected unit(s) and the date, time and type of treatment.
 - ii. Records for incidents when the standard practices in the operating program were not implemented and for incidents when additional treatments or control practices were implemented due to particular circumstances, including description, date, explanation, and expected duration of such circumstances.
- c. The Permittee shall maintain records of the PM and PM₁₀ emissions of the affected units (tons/month and tons/year), with supporting calculations.

2.6.7 Notification and Reporting Requirements

The Permittee shall notify the Illinois EPA of deviations of permit requirements for the affected units in a quarterly report, which report shall be submitted with the periodic compliance reports required for the oxy-combustion boiler. These notifications shall include the information specified by Condition 3.4.

SECTION 3: GENERAL PERMIT CONDITIONS

3.1 General Requirements for Emission Testing

- a. At least 60 days prior to the actual date of initial emission testing required by this permit, 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 at a minimum:
 - i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions, e.g., operating rate and control device operating conditions, under which testing shall be performed including a discussion of why these conditions will be representative and the means by which the operating parameters will be determined.
 - iii. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations.
 - iv. The test method(s) that will be used, with the specific analysis method if the method can be used with different analysis methods.
- b.
 - i. The Permittee shall notify the Illinois EPA prior to performing emissions testing required by this permit to enable the Illinois EPA to observe the tests. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date, and identify the testing that will be performed. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of testing. Notwithstanding applicable rules, 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 testing.
 - ii. This notification shall also identify the parties that will be performing testing and the set or sets of operating conditions under which testing will be performed.
- c. Three copies of the Final Reports for emission tests shall be forwarded to the Illinois EPA within 30 days after the test results are compiled and finalized but not later than 90 days after the date of testing. At a minimum, the Final Report for testing shall contain the following. Copies of emission test reports shall be retained for at least five years after the date that an emission test is superseded by a more recent test.
 - i. A tabular summary of results which includes:
 - Process rates (e.g., fuel usage rate or firing rate)

- Measured emission rates for different pollutants tested
 - Emission factor, calculated using the average test results in the terms of the applicable limits, for example, in units of lbs pollutant emitted per mmmBtu
 - Compliance demonstrated - Yes/No.
- ii. Description of test method(s) and procedures, including a description of sampling points, sampling train, analysis equipment, and test schedule.
- iii. Detailed description of test conditions, including:
- Pertinent process information (e.g., the usage and type of fuel or raw material and the firing or operating rate.)
 - Control equipment information (i.e., monitored data and other relevant operating parameters during testing).
- iv. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

3.2 General Requirements for "Logs" or Similar Records

- a. Operating logs or other similar records required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:
- i. Information identifying periods when an emission unit or group of related emission units was not in service.
 - ii. For periods when a unit or group of related units is in service and operating normally, relevant process and control system information to generally confirm normal operation.
 - iii. For periods when a unit or group of related units is in service and is not operating normally, identification of each such period, with detailed information describing the operation of the unit(s), the potential consequences for additional emissions from the unit(s), the potential of any excess emissions from the affected unit(s), the actions taken to restore normal operation, and any actions taken to prevent similar events in the future.
 - iv. Other information as may be appropriate to show that the emission unit or group of related emission units is operated in accordance with good air pollution control practices.
- b. Inspection, maintenance and repair logs or other similar information required by this permit shall, at a minimum,

include the following information related to the emission units and associated control system:

- i. Identification of equipment, with date, time, responsible employee and type of activity.
 - ii. For inspections, a description of the inspection, findings, and any recommended actions, with reason.
 - iii. For maintenance and repair activity, a description of actions taken, reason for action (e.g., preventative measure or corrective action as a result of inspection), probable cause for requiring maintenance or repair if not routine or preventative, and the condition of equipment following completion of the activity.
 - iv. Other information as may be appropriate to show that the emission unit or group of related emission units is maintained in accordance with good air pollution control practices, including prompt repair of defects that interfere with effective control of emissions.
- c. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be available for inspection and copying by the Illinois EPA upon request. Any record retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of an on-site inspection. The logs required by this permit may be part of a larger database maintained by the Permittee provided that the information that is required to be kept is readily accessible.

3.3 General Requirements for Records for Deviations

- a. Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, records for deviations from applicable requirements shall include at least the following information: the date, time and estimated duration of the deviation; a description of the deviation; the manner in which the deviation was identified, if not readily apparent; the probable cause for deviation, if known, including a description of any equipment malfunction or breakdown associated with the deviation; information on the magnitude of the deviation, including actual emissions or performance in terms of the applicable standard if measured or readily estimated; confirmation that standard procedures were followed or a description of any event-specific corrective actions taken; and a description of any preventative measures taken to prevent future occurrences, if appropriate.

3.4 General Requirements for Reporting of Deviations

- a. The Permittee shall include the following information in records and reports for deviations:
 - i. Identity of the deviation, with date, time, duration and description.
 - ii. Describe the effect of the deviation on compliance, with an estimate of the excess emissions that accompanied the deviation, if any.
 - iii. Describe the probable cause of the deviation and any corrective actions or preventive measures taken.
- b. Unless otherwise specified in a particular condition of this permit, if deviation(s) from requirements of this permit occurs during a calendar quarter, a report shall be submitted no later than 45 days after the end of the quarter. This report shall also provide a listing of all deviations for which earlier reporting was required, but need not include copies of the previously submitted information.
- c. For the purpose of determining whether a deviation must be reported prior to a periodic compliance report, a deviation shall be considered to continue even if operation of an emission unit is interrupted if the deviation is still present when operation of the unit is resumed.

ATTACHMENT 1: SUMMARY OF PROJECT EMISSIONS

Table 1A: Summary of Project Emissions (Tons/Year)

Emission Unit(s)	NOx	CO	VOM	SO ₂	PM	PM ₁₀ / PM _{2.5} ^a	GHG (as CO ₂ e)	Acid Mist	Lead	Fluorides	Indiv.HAP/ Total HAPS
Meredosia Energy Center (New and Modified Units) ^b											
Oxy-Combustion Boiler	1,691.7	481.8	11.6	322.4	32.6	64.5	1,453,928	10.5	0.15	2.8	4.5/19.86
Auxiliary Boiler	41.6	15.4	1.7	0.6	12.5	16.6	68,075	-	0.004	-	-/0.14
New & Modified Coal Handling	-	-	-	-	7.5	3.5	-	-	-	-	-
Other Material Handling	-	-	-	-	5.7	5.7	-	-	-	-	-
Cooling Towers	-	-	-	-	4.6	4.4	-	-	-	-	-
Roadways	-	-	-	-	9.6	1.9	-	-	-	-	-
Sub-Total:	1733.3	497.2	13.3	323.0	72.5	96.6	1,522,003	10.5	0.154	2.8	4.5/20
Sequestration Facility ^c	1.1	0.4	0.4	-	0.4	0.4	500	-	-	-	-
Total	1734.4	497.6	13.7	323.0	72.9	97.0	1,522,503	10.5	0.154	2.8	4.5/20
Significance Threshold:	40	100	40	40	25	15/10	75,000	7	0.6	3.0	-
Greater Than Significant?	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	-

Notes:

- a. PM₁₀ and PM_{2.5} emissions include condensable particulate, as well as filterable particulate.
- b. This summary does not consider existing coal handling operations at the Meredosia Energy Center. With this project, there will be a reduction in the amount of coal that is handled by these existing operations, with an accompanying reduction in the PM emissions of these operations.
- c. Even though the sequestration facility will have negligible or minimal emissions of different pollutants, this facility is being addressed as part of the permitting of this new oxy-combustion power plant. This is because the sequestration facility is considered a support facility for this new power plant under the PSD rules. In this regard, a separate air pollution control construction permit has been issued to the FutureGen Industrial Alliance for an engine-generator to provide emergency power for the buildings at the sequestration facility (Construction Permit No. 12020051).

Table 1B: Analysis of Net Changes in Emissions (Tons/Year)

	NOx	CO	SO ₂	PM	PM ₁₀ /PM _{2.5}	GHG (as CO ₂ e)	Acid Mist
Project Potential Emissions	1734.4	497.6	323.0	72.9	97.0	1,522,503	10.50
Contemporaneous Increases and Decreases in Emissions ^a							
Increases							
Emergency Engine-Generator ^b	32	39.4	0.4	1.9	0.8/0.8	2280	-
Decreases							
Shut Down of Existing Boilers ^c	-2813	-1369	-9541	-310	-310/-186	-1,937,858	-3.58
Existing Main Cooling Tower	-	-	-	-3	-3/-3	-	-
Subtotal	-2781	-1329.6	-9540.6	-311.1	-312.2/-188.2	-1,935,578	-3.58
Net Emission Change ^d	-1047.6	-832.0	-9217.6	-238.2	-215.2/-91.2	-413,075	6.92
Significance Threshold:	40	100	40	25	15/10	75,000	7.00
Greater Than Significant?	No	No	No	No	No	No	No

Notes:

- a. This netting analysis is based on the contemporaneous time period for this project beginning in July 2009, which is five years before July 2014, when the application indicates that construction on the new oxy-combustion boiler would commence.
- b. Emergency diesel engine-generator installed at the Meredosia Energy Center pursuant to Construction Permit 08100029.
- c. The contemporaneous decreases in emissions are the actual emissions from the existing boilers that are being permanently shut down (Meredosia Boilers 1 through 6). The project would also be accompanied by decreases in emissions of VOM, estimated at 374 tons/year, and decreases in emissions of lead and fluorides, which were not quantified in the application.
- d. The change in emissions is the difference between the past emissions and the future emissions. As shown, Ameren's application indicates that there will not be a significant increase for any PSD pollutant.

ATTACHMENT 2: STANDARD PERMIT CONDITIONS

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

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

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

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.
2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Illinois EPA and a supplemental written permit issued.
4. The Permittee shall allow any duly authorized agent of the Illinois EPA upon the presentation of credentials, at reasonable times:
 - a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,
 - b. To have access to and to copy any records required to be kept under the terms and conditions of this permit,
 - c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,
 - d. To obtain and remove samples of any discharge or emissions of pollutants, and
 - e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:
 - a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;
 - b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
 - c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
 - d. Does not take into consideration or attest to the structural stability of any units or parts of the project; and
 - e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
- 6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.
- b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.
7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit.
 - a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed, or
 - b. Upon finding that any standard or special conditions have been violated, or
 - c. Upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.