Commonwealth of Kentucky Energy and Environment Cabinet Department for Environmental Protection Division for Air Quality 200 Fair Oaks Lane, 1st Floor Frankfort, Kentucky 40601 (502) 564-3999

Final

AIR QUALITY PERMIT

Issued under 401 KAR 52:020

815 Dix Dam Road

Permittee Name: Mailing Address:	Kentucky Utilities Company One Quality Street Lexington, KY 40507

Source Name:E.W. Brown Generating StationMailing Address:815 Dix Dam RoadHarrodsburg, KY 40330

Source Location:

Permit: Agency Interest: Activity: Review Type:

V-10-004 est: 3148 APE20090002, APE20100001 : Title V / Synthetic Minor, Construction / Operating 21-167-00001

Regional Office:

Source ID:

Frankfort Regional Office 200 Fair Oaks Lane, 3rd Floor Frankfort, KY 40601 (502) 564-3358 Mercer

County:

ApplicationComplete Date:October 4, 2010Issuance Date:February 15, 2011Revision Date:February 15, 2016

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John S. Lyons, Director Division for Air Quality

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	Permit type	Activity#	Complete Date	Issuance Date	Summary of Action
V-10-004	Title V	APE20090002, APE20100001	10/4/2010		Title V Renewal, Consent Decree Requirements, SCR for Emission Unit 3

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Division for Air Quality (Division) hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes (KRS) Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Energy and Environment Cabinet (Cabinet) or any other federal, state, or local agency.

Emission Units 1 - 3

Indirect Heat Exchangers

Emission Unit	Description	Construction Commenced	Maximum Continuous Rating	Fuel	Control Equipment
1	Pulverized coal- dry bottom- wall- fired indirect heat exchanger	May 1, 1957	1,260 MMBtu/hr	Coal, No. 2 Fuel Oil for startup and stabilization	ESP (installed 1973), Low NO _X burners (installed 1993), Wet FGD (installed 2010)
2	Pulverized coal- dry bottom- tangentially-fired indirect heat exchanger	June 1, 1963	1,733 MMBtu/hr	Coal, No. 2 Fuel Oil for startup and stabilization	ESP (installed 1976), Low NO _X burners (installed 1994), Wet FGD (installed 2010)
3	Pulverized coal- dry bottom- tangentially-fired indirect heat exchanger	July 19, 1971	5,300 MMBtu/hr	Coal, No. 2 Fuel Oil for startup and stabilization	ESP (installed 1976 and 1982), Low NO _X burners (installed 1992), Wet FGD (installed 2010), SCR (installation in 2012)

APPLICABLE REGULATIONS:

401 KAR 51:160, NO_X requirements for large utility and industrial boilers;

401 KAR 51:210, CAIR NO_X annual trading program (See Section K);

401 KAR 51:220, CAIR NO_X ozone season trading program (See Section K);

401 KAR 51:230, CAIR SO₂ trading program (See Section K);

401 KAR 52:060, *Acid rain permits*, incorporating the Federal Acid Rain provisions as codified in 40 CFR Parts 72 to 78 (see Section J);

401 KAR 61:015, Existing indirect heat exchangers;

40 CFR 64, Compliance Assurance Monitoring.

401 KAR 63:020, *Potentially hazardous matter or toxic substances* (State Only Requirement, see Section D);

ADDITIONAL REQUIREMENTS:

Consent Decree filed on March 17, 2009 in U.S. District Court for the Eastern District of Kentucky, Central Division, Lexington, *United States of America v. Kentucky Utilities Company*, Civil Action No. 5:07-CV-0075-KSF ("Consent Decree").

1. **Operating Limitations**:

(a) The total heat input to Emission Unit 3 shall be no greater than 5,300 MMBtu/hr. This is a permanent federally-enforceable limit [Consent Decree, Paragraph 92].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall calculate the hourly heat input rate using the hourly mass coal burned rate and weekly composite fuel sampling analysis data collected.

- (b) By no later than December 31, 2012, the permittee shall install an SCR for Emission Unit 3 [Consent Decree, Paragraph 5].
- (c) By no later than December 31, 2010, the permittee shall install an FGD on Emission Unit 3 [Consent Decree, Paragraph 19].

2. <u>Emission Limitations</u>:

(a) Emissions shall not exceed forty (40) percent opacity except:

- (1) A maximum of sixty (60) percent opacity shall be permissible for not more than one (1) six (6)-minute period in any sixty (60) consecutive minutes;
- (2) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

[401 KAR 61:015, Section 4(3)]

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use the performance tests required by Subsection 3(a) below.

(b) Particulate matter emissions shall not exceed the following limits based on a three-hour average:

Emission Unit	PM Emission Limit (lb/MMBtu)
1	0.254
2	0.162
3	0.254

[401 KAR 61:015, Section 4(1) and Section 4(4)]

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use the performance tests required by Subsection 3(b) and (c). For Emission Unit 3, compliance with the limit in Subsection 2(c) below shall constitute compliance with this limit.

(c) Beginning no later than December 31, 2010, and continuing thereafter, the permittee shall continuously operate the ESP for Emission Unit 3 to achieve a PM emission rate no greater than 0.030 lb/MMBtu. This is a permanent federally-enforceable limit. [Consent Decree, Paragraph 30]

Compliance Demonstration:

Compliance with this requirement shall be demonstrated by stack tests in accordance with Subsection 3(d). This is a permanent federally-enforceable limit. [Consent Decree, Paragraph 30]

(d) Sulfur dioxide emissions from each unit shall not exceed 5.15 lb/MMBtu based on a twenty-four-hour average [401 KAR 53:010 and 401 KAR 61:015, Section 5(1)].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use an SO_2 CEMS. Compliance with the 5.15 lb/MMBtu limit, based on a 24-hour average, assures compliance with the sulfur dioxide limit in 401 KAR 61:015.

(e) During calendar years 2009 and 2010 sulfur dioxide emissions from Emission Unit 3 shall not exceed 31,998 tons per calendar year [Consent Decree, Paragraph 21].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use an SO_2 CEMS in accordance with the reference methods in 40 CFR Part 75. The permittee shall not use SO_2 allowances to comply with this limit [Consent Decree, Paragraph 24].

(f) Beginning with calendar year 2011 and continuing annually on a calendar year basis, sulfur dioxide emissions from Emission Unit 3 shall not exceed 2,300 tons per calendar year. This is a permanent federally-enforceable limit. [Consent Decree, Paragraph 22]

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use an SO_2 CEMS in accordance with the reference methods in 40 CFR Part 75. The permittee shall not use SO_2 allowances to comply with this limit [Consent Decree, Paragraph 24].

(g) For Emission Unit 3, beginning no later than December 31, 2010, the permittee shall commence continuous operation of the FGD so as to achieve and thereafter maintain a **30-day Rolling Average Emission Rate** for SO₂ of no greater than 0.100 lb/MMBtu or a **30-day Rolling Average SO₂ Removal Efficiency** of not lower than 97%. This is a permanent federally-enforceable limit. [Consent Decree, Paragraph 20]

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use an SO_2 CEMS, in accordance with the reference methods in 40 CFR Part 75, upstream and downstream of the wet flue gas desulfurization system. The permittee may not use SO_2 allowances to comply with this limit [Consent Decree, Paragraph 24].

(h) During calendar years 2009 through 2012 nitrogen oxide emissions from Emission Unit 3 shall not exceed 4,072 tons per calendar year [Consent Decree, Paragraph 9].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use a NO_X CEMS in accordance with the reference methods in 40 CFR Part 75. The permittee shall not use NO_X allowances to comply with this limit.

(i) Beginning no later than December 31, 2012, emissions of nitrogen oxides from Emission Unit 3 shall not exceed 0.070 lb/MMBtu based on a **30-day Rolling Average Emission Rate**. If the dispatch of Emission Unit 3 requires operation of the unit at a load level that results in flue gas temperature so low that it becomes technically infeasible to continuously operate the SCR, despite best efforts by the permittee to do so, the nitrogen oxide emission rate shall not exceed 0.080 lb/MMBtu on a **30-day Rolling Average Emission Rate**. [Consent Decree, Paragraphs 6 and 7]

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall use a NO_X CEMS in accordance with the reference methods in 40 CFR Part 75. The permittee shall use SCR operational data, as required by Subsection 5(f), to demonstrate the use of the thirty (30)-day rolling average 0.080 lb/MMBtu limit. The permittee shall not use NO_X allowances to comply with this limit.

(j) After startup and initial performance testing of the SCR system for Emission Unit 3, as required by Subsection 3(e), combined emissions of sulfuric acid mist (SAM) from Emission Units 1 through 3 shall not exceed 473.1 tons per year based on a twelve (12)– month rolling total. This is a voluntary federally-enforceable limit to preclude 401 KAR 51:017.

Compliance Demonstration:

To demonstrate compliance with this limit the permittee shall determine monthly SAM emissions from Emission Units 1 through 3 and add the total to the previous eleven (11)-month SAM emissions total. The permittee shall maintain a log onsite of the twelve-month rolling total SAM emissions. Monthly SAM emissions shall be determined by:

(1) SAM emissions from fuel oil during startup:

$$SAM_{Fuel Oil} \left(\frac{tons}{month}\right) = \frac{Fuel Oil Usage\left(\frac{10^{3} gal}{month}\right) \times EF\left(\frac{lb}{10^{3} gal}\right)}{2000 \left(\frac{lb}{ton}\right)}$$

Where, EF = the most recent AP-42 emission factor, currently 5.7S lb/10³ gallons, where S is the monthly average weight percent of sulfur in the fuel oil.

(2) SAM emissions from burning coal:

(i) SAM emissions through FGD stack:

$$SAM_{FGD} = \frac{Heat \ Input_{FGD} \ \left(\frac{\text{MMBtu}}{\text{month}}\right) \times EF_{FGD} \left(\frac{\text{lb SO}_3}{\text{MMBtu}}\right)}{2000 \left(\frac{\text{lb}}{\text{ton}}\right)} \times 1.225 \ \left(\frac{\text{lb H}_2\text{SO}_4}{\text{lb SO}_3}\right)$$

Where, EF_{FGD} = the most recent SAM stack test emission factor in lb/MMBtu and *Heat Input_{FGD}* is the total monthly heat input from Emission Units 1-3 while exiting through the FGD stack. The stack test emission factor will be established according to the testing required by Subsection 3(e).

(ii) SAM emissions through bypass stack:

$$SAM_{Bypass} = \frac{Heat \ Input_{Bypass} \left(\frac{\text{MMBtu}}{\text{month}}\right) \times EF_{Bypass} \left(\frac{\text{lb SO}_3}{\text{MMBtu}}\right)}{2000 \left(\frac{\text{lb}}{\text{ton}}\right)} \times 1.225 \ \left(\frac{\text{lb H}_2 \text{SO}_4}{\text{lb SO}_3}\right)$$

Where, EF_{Bypass} = the most recent SAM stack test emission factor in lb/MMBtu and *Heat Input*_{Bypass} is the total monthly heat input from Emission Unit 2 while exiting through the bypass stack. The stack test emission factor will be established according to the testing required by Subsection 3(f).

3. <u>Testing Requirements</u>:

- (a) The permittee shall determine the opacity of emissions from the combined stack by Method 9 at least once every fourteen (14) operating days, or more frequently if requested by the Division or required by this permit [401 KAR 50:055].
- (b) For Emission Unit 1 and 2, the permittee shall conduct a performance test for particulate matter according to 40 CFR 60, Appendix A, Method 5, 5B, or 17, or an alternative method approved by EPA, within one year from final issuance of Permit V-10-004 and again during the third year of the permit. The performance test for Emission Unit 1 shall be conducted from the FGD stack. The performance test for Emission Unit 2 shall be conducted from the bypass stack. If any test results are within five (5) percent of the applicable limit (0.254 lb/MMBtu or greater for Emission Unit 1 and 0.154 lb/MMBtu for Emission Unit 2), then the permittee shall commence annual particulate matter performance tests (at least 180 days a part) for the applicable unit for the duration of this permit. [401 KAR 50:055]

- (c) At the time of the performance test for Emission Unit 2 required by Subsection 3(b), the permittee shall also determine the opacity trigger level that will be used as an indicator for particulate matter emissions. The opacity indicator level shall be established at a level that provides reasonable assurance that particulate matter emissions are in compliance when opacity is equal to or less than the trigger level. There may be short-term exceedances during the testing period required to establish the opacity trigger level and this testing will not be used to require annual testing as described above. These exceedances will not be considered noncompliance periods since the testing is required to establish a permit requirement. The Test Protocol form required by Section G(5)(a) shall detail the method to be used to establish the correlation between opacity and particulate matter. The test report shall detail the results of the correlation testing, including the opacity trigger level that is established. [40 CFR 64.6(c)]
- (d) For Emission Unit 3, the permittee shall conduct a stack test for PM on the common stack servicing this unit at least once each calendar year, with each stack test conducted at least six (6) months apart. The reference methods and procedures for determining compliance with the PM emission rates shall be those specified in 40 CFR 60, Appendix A, Method 5, 5B, or 17, or an alternative method requested by the permittee, and approved for use by EPA. Each test shall consist of three separate runs performed under representative operating conditions and not during periods of startup, shutdown, or malfunction. The sampling time for each run shall be at least 120 minutes and volume of each run shall be 1.70 dry standard cubic meters (sixty (60) dry standard cubic feet). The permittee shall calculate the PM emissions rates from the stack test results in accordance with 40 CFR 60.8(f). This is a permanent federally-enforceable testing requirement. [Consent Decree, Paragraph 32 and 401 KAR 50:055]
- (e) Within sixty (60) days after achieving the maximum production rate with the SCR for Emission Unit 3 but not later than 180 days after initial start-up of the SCR, the permittee shall conduct a performance test to determine SAM emissions from Emission Units 1 through 3 in accordance with 401 KAR 50:055, General compliance requirements. The performance test shall determine an emission factor for SAM emissions on a lb/MMBtu basis. After the initial performance test the permittee shall conduct annual performance tests (at least 180 days a part), operating under the conditions established for Subsection 4(n), to determine the SAM emission factor. [401 KAR 50:055]
- (f) During the initial SAM performance testing the permittee shall establish the control device operating parameters that will be used as an indicator of SAM emissions, according to Subsection 4(n). There may be short-term exceedances during the testing period required to establish the trigger levels. These exceedances will not be considered noncompliance periods since the testing is required to establish a permit requirement. The Test Protocol form required by Section G(5)(a) shall detail the method and monitoring to be used to establish the correlation, including any manufacturer established monitoring parameters (e.g. unit load, SCR temperature, WFGD inlet SO₂, etc.). The test report shall detail the results of the correlation testing, including the trigger levels to be used. [401 KAR 50:055 and 40 CFR 64.6(c)]

- (g) If a unit reports PM exceedances, opacity excursions, or SAM excursions, in accordance with Subsection 6(b), for 5% or more of a unit's operating hours during any calendar quarter, then the permittee shall conduct performance testing for PM or SAM emissions, as applicable, during the following calendar quarter while operating under representative conditions. PM emissions shall be determined according to 40 CFR 60, Appendix A, Method 5, 5B, or 17, or an alternative method approved by EPA, and the tests shall be conducted independently, with only the unit being tested in operation. The SAM emission factor shall be re-established according to the method in Subsection 3(e). This requirement may be waived if the permittee can demonstrate to the satisfaction of the Division that the cause of the exceedance has been indentified and corrected. [40 CFR 64.6]
- (h) During the PM performance tests for Emission Unit 2 required by Subsection 3(e), the permittee shall conduct a performance test to determine SAM emissions from Emission Unit 2 while using the bypass stack. The permittee shall determine SAM emissions by developing a correlation using the sulfur content of the fuel and SO₂ outlet emissions. The performance test shall establish an emission factor for SAM emissions on a lb/MMBtu basis.

4. <u>Specific Monitoring Requirements</u>:

- (a) Continuous emission monitoring systems (CEMS) shall be installed, calibrated, maintained, and operated for measuring opacity or particulate matter emissions, sulfur dioxide emissions, oxygen or carbon dioxide emissions and nitrogen oxide emissions. The continuous emission monitoring systems shall comply with 401 KAR 61:005, Section 3 and the applicable Performance Specification in 40 CFR 60, Appendix B or 40 CFR 75, Appendix A. [401 KAR 61:005, Section 3 and 401 KAR 52:020, Section 10]
- (b) When Emission Unit 2 is using the bypass stack, the permittee shall use a COMS to demonstrate compliance with the opacity limit. Excluding the startup, shutdown, and once per hour exemption periods, if any six-minute average opacity value exceeds the opacity standard, the permittee shall, as appropriate:
 - (1) Accept the readout from the COMS as an indicator of equipment performance and perform an inspection of the COMS and the control equipment and make any repairs, or;
 - (2) Within thirty (30) minutes after the COMS indicated exceedance of the opacity standard, the opacity shall be determined using Method 9 according to 40 CFR 60, Appendix A-4. If a Method 9 cannot be performed, the reason for not performing the test shall be documented.

[401 KAR 52:020, Section 10]

- (c) For each unit, the permittee shall sample and record the sulfur, ash, and heat content of the coal burned, as fired, on a daily basis. The daily grab samples shall be averaged to determine the weighted average value for each calendar week. Additionally, all sulfur data obtained in a calendar month shall be averaged to determine the weighted average sulfur content for each calendar month. [401 KAR 61:015, Section 6(3)]
- (d) The permittee shall determine the sulfur content of fuel oil used during startup for each unit and determine a monthly average based on fuel supplier certification or a fuel contract [401 KAR 52:020, Section 10].
- (e) The hourly rate of each fuel burned (coal and fuel oil), the average electrical output, and the minimum and maximum hourly generation rate for each unit shall be measured and recorded daily [401 KAR 61:015, Section 6(3)].
- (f) The Division may provide a temporary exemption from the monitoring and reporting requirements of 401 KAR 61:005, Section 3, for a continuous monitoring system during any period of monitoring system malfunction, provided that the permittee shows, to the Division's satisfaction, that the malfunction was unavoidable and is being repaired as expeditiously as practicable [401 KAR 61:005, Section 3(4)].
- (g) To demonstrate compliance with the sulfur dioxide emission limits, if any twenty-four (24)-hour average sulfur dioxide value exceeds the standard (excluding periods of startup and shutdown), the permittee shall, as appropriate, initiate an investigation of the cause of the exceedance and make any necessary repairs or take corrective actions as soon as practicable [401 KAR 52:020, Section 10].
- (h) The permittee shall monitor and record the date, time, and duration for each startup and shutdown event [401 KAR 52:020, Section 10].
- (i) The permittee shall monitor the SCR inlet temperature and record the hourly average temperature [401 KAR 52:020, Section 10].
- (j) The permittee shall monitor the wet FGD pump amps and pH and record the hourly averages [401 KAR 52:020, Section 10].
- (k) The permittee shall monitor and record the secondary voltage, secondary current and the spark rate for each section of each ESP and record the values once at least once every 8 hours [401 KAR 52:020, Section 10].
- (1) To assure compliance with the PM emission limits for Emission Units 1, 2, and 3 when using the common stack the permittee shall [40 CFR 64.6(c)]:
 - (1) Install, calibrate, maintain and operate a PM CEMS according to Performance Specification 11 in Appendix B to 40 CFR 60;

- (2) The PM CEMS data shall be continuously monitored and recorded to determine hourly average PM emissions. The hourly average PM emissions shall be used to determine the 24-hour block average PM emission rate; and
- (3) If any 24-hour block average PM emission rate exceeds the *PM Indicator* determined below, then the permittee shall initiate an investigation and take corrective action for each excursion and shall correct any revealed performance issues in the most expedient manner possible.

PM Indicator
$$\left(\frac{lb}{MMBtu}\right) = \frac{(13.335 \times H_1) + (11.698 \times H_2) + (6.625 \times H_3)}{(52.5 \times H_1) + (72.208 \times H_2) + (220.833 \times H_3)}$$

Where, H is the number of operating hours for each Emission Unit (1, 2, or 3) during each 24-hour block. The *PM Indicator* shall be determined to the nearest one thousandth (0.001) for each operating day.

- (m)To assure compliance with the PM emission limit for Emission Unit 2 when using the bypass stack the permittee shall:
 - (1) Calibrate, maintain and operate a COMS according to Performance Specification 1 in Appendix B to 40 CFR 60;
 - (2) COMS data shall be continuously monitored and recorded to determine a 6-minute average opacity when the bypass stack is in operation. The 6-minute average opacity values shall be averaged over a period of 3 hours;
 - (3) The opacity trigger level shall be determined during the correlation testing required by Subsection 3(b); and
 - (4) For each excursion of the 3-hour rolling average opacity trigger level the permittee shall initiate an investigation, take corrective action, and correct any revealed performance issues in the most expedient manner possible.

[40 CFR 64.6(c)]

- (n) To assure compliance with the SAM emission limit for Emission Units 1 through 3 when using the common FGD stack the permittee shall:
 - (1) Install, calibrate, and operate a metering system on the sorbent injection system between the sorbent storage silo and the sorbent injection point to determine the sorbent injection rate. The metering system shall be selected to have an accuracy of approximately \pm 10% of the target operating range. Additionally, equipment shall be installed, calibrated, and operated as required by the sorbent injection system manufacturer, to monitor the parameters (e.g. unit load, SCR temperature, FGD SO₂ inlet emissions) that will be used to calculate the uncontrolled SO₃ concentration.

- (2) Install, calibrate, and operate SO₂ CEMS, according to 40 CFR Part 75, at the inlet of the wet FGD and the outlet of the wet FGD stack to determine the average hourly SO₂ removal efficiency for Emission Units 1 through 3. The data shall be averaged to determine the average SO₂ removal efficiency for each operating hour of the day.
- (3) Continuously, once every fifteen (15) minutes, monitor and record the sorbent injection rate. The data shall be averaged to determine the average hourly rate for each operating hour of the day.
- (4) The indicator ranges shall be set during the performance test required by Subsection 3(e). An excursion shall be any hourly average that is outside the indicator range established during the performance test.
- (5) For each excursion, the permittee shall initiate an investigation, take corrective action, and correct any revealed performance issues in the most expedient manner possible.
- (6) The sorbent monitoring equipment and inlet and outlet SO_2 CEMS shall be periodically calibrated and inspected, according to manufacturer recommendations, and at least annually.

[40 CFR 64.6(c)]

5. <u>Specific Recordkeeping Requirements</u>:

- (a) For each unit, the permittee shall maintain records of the heat, sulfur and ash content of each fuel on a weekly basis and determine the average sulfur content of each fuel on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall maintain records of the amount and rate each fuel is burned, the average electrical output, and the minimum and maximum hourly generation rate on a daily basis for each unit [401 KAR 52:020, Section 10].
- (c) The permittee shall maintain records of the data collected by the continuous monitoring systems, including data necessary to convert monitoring data to the units of the applicable standard [401 KAR 52:020, Section 10 and 40 CFR 64.6(c)].
- (d) The permittee shall maintain records of the results of all compliance tests [401 KAR 52:020, Section 10].
- (e) For each startup and shutdown event, the permittee shall maintain records of the date, time, and duration for each startup and shutdown event. The permittee shall also maintain records of the type of startup event that occurs (cold, warm, hot, etc.). [401 KAR 52:020, Section 10].
- (f) The permittee shall maintain records of the SCR, ESP, and wet FGD operating parameters required to be monitored by Subsection 4(h), (i), and (j) [401 KAR 52:020, Section 10].

- (g) The permittee shall maintain records regarding the maintenance of the ESPs, wet FGD, and SCR [401 KAR 52:020, Section 10 and 40 CFR 64.6(c)].
- (h) The permittee shall maintain records of the number of operating hours Emission Unit 2 uses the bypass stack on a monthly basis and maintain a log onsite of the 12-month rolling total [40 CFR 64. 6(c)].
- (i) The permittee shall maintain records of the causes and corrective actions taken associated with any exceedance or excursion identified in Subsection 4(k), (l) and (m) [40 CFR 64. 6(c)].
- (j) If five (5) percent or more of a unit's operating hours in a calendar quarter report PM exceedances or SAM or opacity excursions, as applicable, in accordance with the compliance assurance monitoring in Subsection 4(l), (m), and (n), then the permittee shall develop and maintain a quality improvement plan (QIP) according to 40 CFR 64.8 [40 CFR 64. 6(c)].

6. <u>Specific Reporting Requirements</u>:

- (a) For each continuous monitoring system, the permittee shall submit, in writing to the cabinet, for every calendar quarter, a written report of excess emissions including the nature and cause of the excess emission, if known, as follows [401 KAR 61:005, Section 3(15), 40 CFR 64.6(c), and Consent Decree, Paragraph 36]:
 - (1) The averaging period used for data reporting shall correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the applicable pollutant and source category, and quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter;
 - (2) For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of six (6) minute averages of opacity greater than the opacity standard in the applicable stand for each hour of operation of the facility as follows:
 - (i) Average values may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four (4) equally spaced, instantaneous opacity measurements per minute;
 - (ii) All exempted time periods shall be considered before determining the excess average of opacity; and
 - (iii) If more than one (1) opacity standard applies, excess emission data shall be submitted in relation to all applicable standards.

- (3) For particulate matter measurements, the summary shall be based on twenty-four (24) -hour block averaging, twenty-four (24) -hour rolling averaging, and six (6) hour rolling averaging times. Excess emissions shall be reported based on a combined emission limit using the equation in Subsection 4(1)(3). The *PM Indicator* must be determined for each operating day. Excess emissions are not reported for a unit that did not operate during the time the excess emissions occurred.
- (4) For gaseous measurements, the summary shall consist of hourly averages expressed in the units of the applicable standard;
- (5) For the sorbent to SO_3 measurements, the summary shall be based on hourly averages expressed as a ratio;
- (6) For the SO₂ removal efficiency of the wet FGD, the summary shall be based on the hourly removal efficiency in percent;
- (7) Except for zero and span checks, the date and time of each period during which the continuous monitoring system was not operating, including proof of continuous monitoring system performance during system repairs and the nature of the repairs of adjustments;
- (8) If excess emissions have not occurred and the continuous monitoring systems have not been inoperative, repaired or adjusted, this information shall be included in the report; and
- (9) All data must be retained for five (5) years, but the source shall maintain a file <u>onsite</u> for a minimum of two (2) years from the date of collection of the data or submission to the cabinet of:
 - (i) All information reported in the quarterly summaries; and
 - (ii) All other data collected by the continuous monitoring systems, including data necessary to convert monitoring data to the units of the applicable standard.
- (b) The permittee shall submit quarterly reports for the following information regarding the compliance assurance monitoring for PM and SAM emissions in Subsection 4(l), (m), and (n):
 - (1) Number of exceedances or excursions;
 - (2) Duration of each exceedance or excursion;

ON POINTS EMISSION UNITS APPLICABLE

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SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- (3) Cause of each exceedance or excursion;
- (4) Corrective actions taken on each exceedance or excursion;
- (5) Number of monitoring equipment downtime incidents;
- (6) Cause of each monitoring equipment downtime incident; and
- (7) Description of actions taken to implement a quality improvement plan (according to the method in 40 CFR 64.8); and upon completion of the quality improvement plan, documentation that the plan was completed and reduced the likelihood of similar excursions or exceedances.

[40 CFR 64.9(a)]

- (c) The permittee shall report exceedances that occur as a result of startup on a semi-annual basis. The report shall include the type of start-up and whether or not the duration of the startup exceeded the manufacturer's recommendation or typical, historical durations, and if so, an explanation of why the startup exceeded recommended or typical durations. [401 KAR 52:020, Section 10]
- (d) The permittee shall report the SAM emissions twelve-month rolling totals on a semiannual basis according to Section F [401 KAR 52:020, Section 10].

7. <u>Specific Control Equipment Operating Conditions</u>:

- (a) The ESPs, wet FGD, and SCR shall be operated to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].
- (b) For Emission Unit 1 and 3, the permittee shall continuously operate each ESP to maximize PM emission reductions at all times when the unit is in operation, provided that such operation of the ESP is consistent with the technological limitations, manufacturer's specifications and good engineering and maintenance practices for the ESP. Except as required during correlation testing under 40 CFR 60, Appendix B, Performance Specification 11, and Quality Assurance Requirements under Appendix F, Procedure 2, the permittee shall, at a minimum:
 - (1) Fully energize each section of the ESP;
 - (2) Operate automatic controls systems on the ESP, including the plate-cleaning and discharge electrode cleaning systems, to maximum PM collection efficiency;
 - (3) Maintain power levels delivered to the ESP, consistent with manufacturer's specifications, the operational design of the unit, and good engineering practices; and

(4) Inspect the ESP for any openings or leakage in ESP casings, ductwork, and expansion joints, and make repairs to any section of the ESP needing repair during the next scheduled or unscheduled outage.

This is a permanent federally-enforceable operating requirement.

[Consent Decree, Paragraph 29 and 401 KAR 52:020, Section 10]

Compliance Demonstration:

To demonstrate compliance with these requirements the permittee shall meet the monitoring and recordkeeping requirements for each ESP in Subsections 4(k) and 5(f) and maintain records of all maintenance conducted on each ESP.

- (c) Beginning no later than December 31, 2010, the permittee shall continuously operate the wet FGD whenever Emission Unit 3 is in operation. This is a permanent federally-enforceable operating requirement. [Consent Decree, Paragraph 20]
- (d) The permittee shall continuously operate the existing low NO_X burners and over-fire air for Emission Unit 3. This is a permanent federally-enforceable operating requirement. [Consent Decree, Paragraph 8]
- (e) See Section E for further requirements.

Emission Units 7, 35-38

Fugitive Emissions

Emission Unit	Description	Construction Commenced	Maximum Operating Rate	Control Equipment
07-1	West Track Hopper	1970	820 tons/hr	Enclosures
07-2	Conveyor A-1	1970	820 tons/hr	Enclosures
07-3	Conveyor E	1970	820 tons/hr	Enclosures
07-4	Conveyor F	1970	820 tons/hr	Enclosures
07-5	Conveyor G	1970	820 tons/hr	Enclosures
07-6	Conveyor H	1970	820 tons/hr	Enclosures
35	Paved and Unpaved Roadways	1957	35,653 VMT/yr	Dust Suppression (Wet and/or Chemical)
36	Cooling Tower 1 (forced draft)	1957	4.08 MMgal/hr	Drift Eliminators
37	Cooling Tower 2 (forced draft)	1963	6.00 MMgal/hr	Drift Eliminators
38	Cooling Tower 3 (forced draft)	1971	10.37 MMgal/hr	Drift Eliminators

APPLICABLE REGULATIONS:

401 KAR 63:010, Fugitive emissions.

1. **Operating Limitations**:

- (a) No person shall cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished, or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, when applicable, but not be limited to the following:
 - (1) Use, where possible, of water or chemicals for control of dust in the demolition of existing building or structures, construction operations, the grading of roads or the clearing of land;
 - (2) Application and maintenance of asphalt, oil, water or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts;
 - (3) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or the use of water sprays or other measures to suppress the dust emissions during handling. Adequate containment methods shall be employed during sandblasting or other similar operations;
 - (4) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne;

- (5) The maintenance of paved roadways in a clean condition;
- (6) The prompt removal of earth or other material from a paved street which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water.

[401 KAR 63:010, Section 3(1)]

Compliance Demonstration:

The permittee shall demonstrate compliance with this requirement by meeting the requirements of Subsections 4 and 5 below.

(b) Discharge of visible fugitive dust emissions beyond the property line is prohibited [401 KAR 63:010, Section 3(2)].

Compliance Demonstration:

The owner or operator shall demonstrate compliance with this requirement by meeting the requirements of Subsections 4 and 5 below.

- 2. <u>Emission Limitations</u>: None
- 3. <u>Testing Requirements</u>: None

4. <u>Specific Monitoring Requirements</u>:

- (a) The permittee shall monitor actions taken (e.g. water usage for roads, enclosures are in good operating condition) to prevent the discharge of visible fugitive emissions beyond the property line for each unit on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall monitor the processing rate (tons, VMT, gallons/hr, etc.) for each unit on a monthly basis [401 KAR 52:020, Section 10].

5. <u>Specific Recordkeeping Requirements</u>:

- (a) The permittee shall maintain records of the actions taken to prevent the discharge of visible fugitive emissions beyond the property line on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall maintain records of the processing rate (tons, VMT, gallons/hr, etc.) for each unit on a monthly basis [401 KAR 52:020, Section 10].
- (c) Records regarding the maintenance and use of the air pollution control equipment shall be maintained [401 KAR 52:020, Section 10].
- 6. <u>Specific Reporting Requirements</u>: See Section F.

7. <u>Specific Control Equipment Operating Conditions</u>:

- (a) The air pollution control equipment for each emission unit shall be operated to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].
- (b) See Section E for further requirements.

Emission Unit 9

Fugitive Coal Handling Operations

Emission Unit	Description	Reconstruction Commenced	Maximum Operating Rate	Control Equipment
9-1	East Track Hopper	1993	820 tons/hr	Partially Underground
9-2	Conveyor A	1993	820 tons/hr	Enclosures
9-3	Conveyor B	1993	1,640 tons/hr	Enclosures
9-4	Conveyor C	1993	820 tons/hr	Enclosures
9-5	Conveyor J	1993	1,640 tons/hr	Enclosures
9-6	Coal Stockpile	1993	1,640 tons/hr	Dust Suppression (Wet and Compaction)

APPLICABLE REGULATIONS:

401 KAR 60:005, Standards of performance for new stationary sources, incorporating by reference 40 CFR 60, Subpart Y – Standards of Performance for Coal Preparation and Processing Plants.

1. **Operating Limitations**:

None

2. <u>Emission Limitations</u>:

The permittee shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal gases which exhibit 20 percent opacity or greater [40 CFR 60.254(a)].

Compliance demonstration:

The permittee shall use the results from the tests in Subsection 3.

3. <u>Testing Requirements</u>:

The permittee shall determine opacity on a quarterly basis using Method 9 of Appendix A-4 and as specified in 40 CFR 60.257(a)(1) through (3) [40 CFR 60.255].

4. Specific Monitoring Requirements:

- (a) The permittee shall monitor the coal received and processed on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall inspect the partial enclosure control equipment monthly and make necessary repairs to assure compliance [401 KAR 52:020, Section 10].

5. Specific Recordkeeping Requirements:

(a) The permittee shall maintain records of the amount coal received and processed on a monthly basis [401 KAR 52:020, Section 10].

- (b) The permittee shall maintain records regarding all maintenance of the control equipment for each unit [401 KAR 52:020, Section 10].
- (c) The permittee shall maintain a log onsite of opacity readings required by Subsection 3 [401 KAR 52:020, Section 10].

6. <u>Specific Reporting Requirements</u>:

- (a) Semiannually the permittee shall report all 6-minute average opacities that exceed the applicable standard [40 CFR 60.258(b)(3)].
- (b) Beginning July 1, 2011, within sixty (60) days after the date of completing each performance evaluation conducted to demonstrate compliance, the permittee shall successfully enter the data electronically into EPA's WebFIRE database. For performance tests that cannot be entered into WebFIRE (i.e., opacity performance tests), the permittee shall mail a summary copy to United States Environmental Protection Agency; Energy Strategies Group; 109 TW Alexander DR; mail code: D243-01; RTP, NC 27711. [40 CFR 60.258(d)]

(b) See Section F.

7. <u>Specific Control Equipment Operating Conditions</u>:

(a) Dust suppression shall be utilized to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].

(b) See Section E.

Emission Units 13 and 16

Coal Handling Operations

Emission Unit	Description	Construction Commenced	Maximum Operating Rate	Control Equipment
13-1	Traveling Tripper for Units 1 & 2 (Conveyor D)	1956	820 tons/hr	Cyclone
13-2	Upper Traveling Tripper for Unit 3 (Conveyor K-1)	1970	820 tons/hr	Fabric Filter
13-3	Lower Traveling Tripper for Unit 3 (Conveyor K)	1970	820 tons/hr	Fabric Filter
16	Coal Crushing: Four Crushers and Crusher House	1956	1,640 tons/hr	Wet Scrubber

APPLICABLE REGULATIONS:

401 KAR 61:020, Existing process operations.

1. **Operating Limitations**:

None

2. <u>Emission Limitations</u>:

(a) The permittee shall not emit any continuous emissions into the open air from a control device or stack which is equal to or greater than forty (40) percent opacity [401 KAR 61:020, Section 3(1)(a)].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall meet the monitoring requirements of Subsection 4 below.

(b) The permittee shall not permit the emission into the open air of particulate matter which is in excess of [55.0P^{0.11}-40] pounds per hour where P is the monthly average process weight rate in tons per hour [401 KAR 61:020, Section 3(2)(a)].

Compliance Demonstration:

Each unit is considered in compliance when the associated control equipment is in operation.

3. <u>Testing Requirements</u>:

The permittee shall perform a qualitative visual observation (lasting at least 6 minutes) of the opacity of emissions from each stack on a weekly basis and maintain a log of the observations. If visible emissions are observed, then the permittee shall determine the opacity of emissions by Method 9 as detailed in 40 CFR 60, Appendix A-4 and initiate an inspection of the control equipment for any necessary repairs. [401 KAR 52:020, Section 10]

4. Specific Monitoring Requirements:

The permittee shall monitor the operating rate and hours of operation for each unit on a monthly basis [401 KAR 52:020, Section 10].

5. Specific Recordkeeping Requirements:

- (a) The permittee shall maintain records of coal processed and hours of operation for each unit on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall maintain records regarding all maintenance of the control equipment for each unit [401 KAR 52:020, Section 10].

6. <u>Specific Reporting Requirements</u>:

See Section F.

7. <u>Specific Control Equipment Operating Conditions</u>:

- (a) The control equipment for each emission unit (cyclone, fabric filter, wet scrubber) shall be operated to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].
- (b) See Section E.

Emission Unit 21

Dry Fly Ash Handling

Emission Unit	Description	Construction Commenced	Maximum Operating Rate	Control Equipment
21	Dry fly ash collection system and fly ash silo	1982	79.5 tons/hr	Pulse jet fabric filter

APPLICABLE REGULATIONS:

40 CFR 64, *Compliance Assurance Monitoring*; 401 KAR 59:010, *New process operations*.

1. **Operating Limitations**:

The permittee shall notify the Frankfort Regional Office at least 30 days prior to startup of this unit. Within sixty (60) days after achieving the maximum production rate, but not later than 180 days after start-up of the unit, the permittee shall demonstrate compliance according to Subsection 3.

2. <u>Emission Limitations</u>:

(a) Upon startup, the permittee shall not emit any continuous emission into the open air form a control device or stack which is equal to or greater than twenty (20) percent opacity [401 KAR 59:010, Section 3(1)(a)].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall meet the monitoring requirements of Subsection 4(b).

(b) Upon startup, the permittee shall not emit into the open air particulate matter which is in excess of [3.59P^{0.62}] pounds per hour for process weight rates less than 30 tons per hour and [17.31P^{0.16}] pounds per hour for process weight rates greater than or equal to 30 tons per your, where P is the monthly average processing rate in tons per hour [401 KAR 59:010, Section 3(2)].

Compliance Demonstration:

This permittee shall be considered in compliance when meeting the compliance assurance monitoring (CAM) requirements in Subsection 4(b) below.

3. <u>Testing Requirements</u>:

Upon startup, the permittee shall conduct a performance test for particulate matter according to 40 CFR 60, Appendix A, Method 5, or an alternative method approved by EPA. [401 KAR 50:055].

4. Specific Monitoring Requirements:

- (a) The permittee shall monitor the fly ash processed (tons) and hours of operation on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall meet the compliance assurance monitoring (CAM) plan for Emission Unit 21 for PM Emissions in Table 1 [40 CFR 64.6].

5. <u>Specific Recordkeeping Requirements</u>:

- (a) The permittee shall maintain records of fly ash processed and hours of operation on a monthly basis [401 KAR 52:020, Section 10].
- (b) The permittee shall maintain records regarding all maintenance of the control equipment [401 KAR 52:020, Section 10].

6. <u>Specific Reporting Requirements</u>:

- (a) The permittee shall submit semi-annual reports to the field office for the following information regarding the CAM plans in Tables 1 and 2:
 - (1) Number of exceedances or excursions;
 - (2) Duration of each exceedance or excursion;
 - (3) Cause of each exceedance or excursion;
 - (4) Corrective actions taken on each exceedance or excursion;
 - (5) Number of monitoring equipment downtime incidents;
 - (6) Cause of each monitoring equipment downtime incident; and
 - (7) Description of actions taken to implement a quality improvement plan; and upon completion of the quality improvement plan, documentation that the plan was completed and reduced the likelihood of similar excursions or exceedances

[40 CFR 64.9(a)]

7. <u>Specific Control Equipment Operating Conditions</u>:

- (a) The fabric filter shall be operated to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].
- (b) See Section E.

Emission Limit:	For processing rates less than 30 tons/hr, 3.59P ^{0.62} lb/hr PM; OR For processing rates greater than or equal to 30 tons/hr, 17.31P ^{0.16} PM where, P is the monthly average processing rate in tons/hr
Monitoring Methods and	(1) Visible emissions: and
Location	 (1) Visible classions, and (2) Inspection of control equipment, including the filter system and perform routine maintenance in accordance with a written maintenance schedule. Inspections shall involve taking the system offline (while the emission unit is not in operation), and inspecting the bin vent filter and cleaning systems.
Indicator Range	 (1) Any visible emissions (2) If monthly inspections are not completed, when required or if the inspection reveals the need for non-routine maintenance. The permittee may adjust the indicator ranges pursuant to 40 CFR 64.7 (e) with Division approval.
Data Collection Frequency	 Daily visual observations when the unit is in operation by a trained personnel and shall last at least six minutes. The results of the observation shall be recorded in a log; Once per calendar month inspections of the control equipment. Inspections shall be at least 20 calendar days apart. The monthly inspection is not required if the emission unit has not been in operation since the last monthly inspection. The results of the inspection shall be recorded in a log.
Averaging Period	Not applicable
Recordkeeping	 The permittee shall maintain records of each visual observation and each control equipment inspection. The permittee shall maintain records of any corrective action taken and of all control equipment maintenance.
Excursions/Corrective Actions	An excursion shall be defined as (1) any visible emissions, (2) if a required monthly inspection is not completed, or (3) if the monthly inspection reveals the need for non-routine maintenance. The permittee shall initiate an investigation and take corrective action for each excursion. This investigation shall include a Method 9 reading within 30 minutes of the visual observation reading that showed an excursion, weather permitting.
QA/QC	Personnel responsible for conducting visual observations shall receive training at least twice per year. The monthly inspections shall be performed by trained personnel familiar with the operation of the fly ash handling system.
Quality Improvement Plan (QIP)	The QIP threshold for opacity data is either (1) 4 excursions in a rolling 3-month period or (2) 3 consecutive weekly excursions. The QIP threshold for inspections is (1) 2 consecutive monthly excursions or (2) 2 excursions in a rolling 3-month period. If the QIP threshold is triggered during any semiannual reporting period a OIP shall be developed and implemented.

Table 1 CAM Plan for Emission Unit 21 for PM Emissions

Emission Units 23-29

Combustion Turbines

Emission Unit	Description	Construction Commenced	Maximum Continuous Rating	Fuel	Control Equipment
23	Combustion Turbine (Unit 9), Model ABB GT 11N2	11/28/1995	1,368 MMBtu/hr	Distillate Oil or Natural Gas	Water injection
24	Combustion Turbine (Unit 10) Model ABB GT 11N2	12/22/1995	1,368 MMBtu/hr	Distillate Oil or Natural Gas	Water injection
25	Combustion Turbine (Unit 8) Model ABB GT 11N2	3/1/1996	1,368 MMBtu/hr	Distillate Oil or Natural Gas	Water injection
26	Combustion Turbine (Unit 11) Model ABB GT 11N2	5/8/1996	1,368 MMBtu/hr	Distillate Oil or Natural Gas	Water injection
27	Combustion Turbine (Unit 6), Model ABB GT 24	8/11/1999	1,678 MMBtu/hr	Distillate Oil or Natural Gas	Water injection when burning oil and low NO _X burners when burning natural gas
28	Combustion Turbine (Unit 7) Model ABB GT 24	8/8/1999	1,678 MMBtu/hr	Distillate Oil or Natural Gas	Water injection when burning oil and low NO _X burners when burning natural gas
29	Combustion Turbine (Unit 5) Model ABB GT 11N2	6/8/2001	1,368 MMBtu/hr	Natural Gas	Water injection

Applicable Regulations:

401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, incorporating by reference 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines;

401 KAR 51:017, Prevention of Significant Deterioration of Air Quality;

401 KAR 52:060, *Acid rain permits*, incorporating the Federal Acid Rain provisions as codified in 40 CFR Parts 72 to 78 (see Section J).

1. **Operating Limitations**:

(a) The operating rate for each unit shall not exceed the hourly maximum continuous rating listed above, at ISO standard conditions [401 KAR 51:017].

Compliance Demonstration:

To demonstrate compliance with this limit the operating rate shall be calculated from each average hourly fuel usage rate at ISO standard conditions, and corresponding fuel heating value characteristics of the fuel combusted.

(b) The maximum operating hours for each unit shall not exceed 2,500 hours per year based on a twelve-month rolling total [401 KAR 51:017].

Compliance Demonstration:

To demonstrate compliance with this limit, the twelve-month total for each unit shall be calculated monthly and reported semi-annually. The permittee shall maintain onsite a log of each 12-month rolling total.

2. <u>Emission Limitations</u>:

(a) Nitrogen oxide emissions from each unit shall not exceed the following values, at 15 percent oxygen on a dry basis:

Emission	NO _x emission limit when burning			
Unit	Natural gas (ppm	Distillate oil (ppm		
22		by volume)		
23	42	65		
24	42	65		
25	42	65		
26	42	65		
27	25	42		
28	25	42		
29	25	NA		

[401 KAR 51:017 and 40 CFR 60.332(a)]

Compliance Demonstration:

For each unit, the permittee shall demonstrate compliance with this requirement by using the emission estimate method in 40 CFR 75, Appendix E. Emission rates determined on a pound per million Btu basis shall be converted to parts per million (ppm) using Formula F-5 in 40 CFR 75, Appendix F.

(b) These units are exempt from the emission limits in Subsection 2(a) when ice fog is deemed a traffic hazard by the permittee [40 CFR 60.332(f)].

Compliance Demonstration:

During the semi-annual reporting required by Section F, the permittee shall submit to the Division the date, time, duration and weather conditions that created the hazard.

(c) Exemptions from the requirements of Subsection 2(a) above shall be granted on a caseby-case basis, as determined by the Division, in specific geographical areas where mandatory water restrictions are required by governmental agencies because of drought conditions. These exemptions shall be allowed only while the mandatory water restrictions are in effect. [40 CFR 60.332(i)]

Compliance Demonstration:

During the semi-annual reporting required by Section F, the permittee shall submit to the Division the date, time, duration and proof of mandatory water restrictions that led to the exemption.

(d) The sulfur content of fuel burned and sulfur dioxide emissions shall not exceed the following limits [401 KAR 51:017 and 40 CFR 60.333(b)]:

	Fuel sulfur c			
Emission Unit	When Emission Units 23-29 are simultaneously operating	For all other operating scenarios	SO ₂ Emission (lbs/hr)	
23	0.26%	0.30%	444	
24	0.26%	0.30%	444	
25	0.26%	0.30%	444	
26	0.26%	0.30%	444	
27	0.23%	0.26%	666	
28	0.23%	0.26%	666	
29	0.26%	0.30%	444	

Compliance Demonstration:

To demonstrate compliance with the fuel sulfur content limits the permittee shall determine the fuel sulfur content according to the methods in 40 CFR 75, Appendix D as required by Subsection 4(e). The permittee shall be considered in compliance with the SO_2 emission rate limits (lb/hr) when demonstrating compliance with the fuel sulfur content limits.

(e) Carbon monoxide emissions from each unit shall not exceed the following limits [401 KAR 51:017]:

Emission Unit	CO (lb/hr)	CO (TPY, based on a 12-month rolling total)
23	75	93.8
24	75	93.8
25	75	93.8
26	75	93.8
27	112.5	140.63
28	112.5	140.63
29	75	93.8

Compliance Demonstration:

For each unit, the permittee shall demonstrate compliance using the results of the most recent performance test required by Subsection 3(b). Until a performance test emission factor has been determined, compliance shall be demonstrated using fuel usage rates and the AP-42 emission factor of 10.564 lbs/1000 gal when burning fuel oil and the vendor emission factor of 43 lb/MMscf when burning natural gas.

To demonstrate compliance with the twelve-month rolling total emission limit, the twelve-month total for each unit shall be calculated monthly and reported semi-annually. The permittee shall maintain onsite a log of each 12-month rolling total.

Emission Unit	PM (lb/hr)	PM (TPY, based on a 12-month rolling total)
23	67	83.8
24	67	83.8
25	67	83.8
26	67	83.8
27	100.5	125.63
28	100.5	125.63
29	67	83.8

(f) Particulate emissions from each unit shall not exceed the following limits:

[401 KAR 51:017]

Compliance Demonstration:

For each unit, the permittee shall demonstrate compliance using the results of the most recent performance test required by Subsection 3(b). Until the performance test emission factor has been determined, the permittee shall demonstrate compliance by using the hourly fuel usage rate and the vendor emission factor of 6.38 lbs/1000 gallon when burning fuel oil or the AP-42 emission factor of 6.73 lbs/MMscf when burning natural gas. To demonstrate compliance with twelve-month rolling total emission limit, the twelve-month total for each unit shall be calculated monthly and reported semi-annually. The permittee shall maintain onsite a log of each 12-month rolling total.

Emission Unit	VOC (lb/hr)	VOC (TPY, based on a 12-month rolling total)
23	20.4	25.5
24	20.4	25.5
25	20.4	25.5
26	20.4	25.5
27	30.6	38.25
28	30.6	38.25
29	20.4	25.5

(g) VOC emissions from each unit shall not exceed

[401 KAR 51:017]

Compliance Demonstration:

For each unit, the permittee shall demonstrate compliance using the results of the most recent performance test required by Subsection 3(b). Until the performance test emission factor has been determined, the permittee shall demonstrate compliance by using the hourly fuel usage rate and the vendor emission factor of 1.94 lbs/1000 gallon when burning fuel oil or the AP-42 emission factor of 2.14 lbs/MMscf when burning natural gas. To demonstrate compliance with twelve-month rolling total emission limit, the twelve-month total for each unit shall be calculated monthly and reported semi-annually. The permittee shall maintain onsite a log of each 12-month rolling total.

(h) Beryllium emissions from each unit shall not exceed the following limits [401 KAR 51:017]:

Emission Unit	Be (lb/hr)	Be (TPY, based on a 12-month rolling total)
23	3.37E-3	4.21E-3
24	3.37E-3	4.21E-3
25	3.37E-3	4.21E-3
26	3.37E-3	4.21E-3
27	5.057E-3	6.35E-3
28	5.057E-3	6.35E-3
29	3.37E-3	4.21E-3

Compliance Demonstration:

For each unit, the permittee shall demonstrate compliance using the results of the most recent performance test required by Subsection 3(b). Until performance testing is completed, the permittee shall demonstrate compliance when burning fuel oil by using the emission factor from the EPA document on Toxic Air Pollutants (EPA450/2-88-006a) of 4.5E-08 lbs/gallon. Until the performance testing is completed, the permittee shall be considered in compliance with the beryllium limit while burning natural gas.

As an alternative to conducting beryllium stack testing the permittee may use fuel supplier certification or fuel sampling for each fuel, consistent with the fuel monitoring plan in Subsection 4(e). For compliance demonstration, the permittee shall assume all beryllium in the fuel is emitted as beryllium.

To demonstrate compliance with twelve-month rolling total emission limit, the twelvemonth total for each unit shall be calculated monthly and reported semi-annually. The permittee shall maintain onsite a log of each 12-month rolling total.

3. <u>Testing Requirements</u>:

- (a) The permittee shall conduct performance tests to determine nitrogen oxide and diluent concentration for each unit using either EPA Method 20, ASTM D6522-00, or EPA Method 7E and either EPA Method 3 or 3A in appendix A to 40 CFR Part 60. All performance tests shall conform to the requirements of 40 CFR 60.355. The permittee shall conduct nitrogen oxide performance testing on each unit at least once every 20 calendar quarters. [40 CFR 60.335(a) and 40 CFR Part 75, Appendix E, Section 2.2]
- (b) To demonstrate compliance with the limits required by 401 KAR 51:017, the permittee shall conduct performance tests for carbon monoxide, particulate matter, VOC and beryllium for each unit, using Method 10 for carbon monoxide, Method 5 for particulate matter, Method 18 or 25 for VOC, and Method 104 for beryllium, or equivalents. Testing for each unit shall be conducted in conjunction with the nitrogen oxides testing, required by Subsection (a) above, once every 20 calendar quarters. Emission rates shall be determined on a pound per million Btu and pound per hour basis. For compliance demonstration and emission estimates, the permittee shall either (1) interpolate emission rates based on testing results at various load levels or (2) use the highest average emission rate over all load levels. [401 KAR 50:055]

4. <u>Specific Monitoring Requirements</u>:

- (a) The permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption rate, hourly average heat input rate at ISO conditions, and the ratio of water or steam to fuel being fired in each unit [40 CFR 60.334(a)].
- (b) The fuel consumption and the ratio of water or steam to fuel being fired in the unit shall be monitored during the performance test required in Subsection 3(a) to establish acceptable values and ranges. The permittee may supplement test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. To meet the parameter monitoring plan requirement (which explains the procedures used to document proper operation of the NO_X emission controls) the permittee has chosen to comply with the NO_X emission measurement methodology in Appendix E to 40 CFR Part 75, by developing and keeping onsite a quality-assurance (QA) plan, as described in Section 2.3 of Appendix E and Section 1.3.6 of Appendix B to 40 CFR Part 75. See Subsections 4(c) and 4(d) below. [40 CFR 60.334(g)]

- (c) The permittee shall select at least four operating parameters indicative of each unit's NO_X formation characteristics, and define in the QA plan for the unit the acceptable ranges for these parameters at each tested load-heat input point. The acceptable parametric ranges should be based upon the turbine manufacturer's recommendations. Alternatively, the owner or operator may use sound engineering judgment and operating experience with the unit to establish the acceptable parametric ranges, provided that the rationale for selecting these ranges is included as part of the quality-assurance plan for the unit. If the turbine uses water or steam injection for NO_X control, the water/fuel or steam/fuel ratio shall be one of these parameters. During the NO_X-heat input correlation tests, record the average value of each parameter for each load-heat input to ensure that the parameters are within the acceptable range. Re-determine the NO_X emission rate-heat input correlation for each fuel after continuously exceeding the acceptable range of any of these parameters for one or more successive operating periods totaling more than 16 unit operating hours. [40 CFR 75, Appendix E, Section 2.3.1]
- (d) When the operating levels of certain parameters exceed the limits specified in Subsection 4(c) above, <u>or</u> where the Division issues a notice requesting retesting because the NO_X emission rate data availability for when the unit operates within all quality assurance/quality control parameters in this section since the last test is less than 90.0 percent, as calculated by the Division, complete retesting of the NO_X emission rate by the earlier of: (1) 30 unit operating days (as defined in 40 CFR 72.2) or (2) 180 calendar days after exceeding the limits or after the date of issuance of a notice from the Division to reverify the unit's NO_X emission rate. The permittee shall submit test results in accordance with 40 CFR 75.60 within 45 days of completing the retesting. [40 CFR 75, Appendix E, Section 2.3]
- (e) The permittee shall continue to use the custom fuel monitoring plan, previously approved and provided in 40 CFR 75, Appendix D, Tables D4-D5 and Sections 2.2.1, 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3. The permittee shall maintain a copy onsite of the chosen monitoring plans for natural gas and oil. [40 CFR 60.334(h)(4)]
- (f) Excluding the startup and shutdown periods, if any average emission value exceeds the hourly limits in Subsection 2, the permittee shall, as appropriate, initiate an investigation of the cause of the exceedance and complete necessary process repairs or take corrective action as soon as practicable [401 KAR 52:020, Section 10].

5. <u>Specific Recordkeeping Requirements</u>:

- (a) The permittee shall maintain records of the fuel consumption rates, hourly average heat input rate at ISO conditions, and water or steam to fuel ratios, as determined by the continuous monitoring system required by Subsection 4(a) [40 CFR 60.334(a)].
- (b) The permittee shall maintain records of the hours of operation and power output (MW) for each unit on a monthly basis [401 KAR 52:020, Section 10].

- (c) The permittee shall maintain records of the four (or more) operating parameters selected for the parameter monitoring plan in Subsection 4(c) on an hourly basis for each unit [401 KAR 52:020, Section 10].
- (d) The permittee shall identify the recommended range of quality assurance- and quality control-related operating parameters. The permittee shall keep records of these operating parameters for each hour of unit operation (i.e., fuel combustion). The permittee shall keep a written record of the procedures used to perform NO_X emission rate testing. The permittee shall keep a copy of all data and results from the initial, and from the most recent, NO_X emission rate testing, including the values of quality assurance parameters specified in section 2.3 of Appendix E to 40 CFR Part 75. [40 CFR 75, Appendix B, Section 1.3.6]
- (e) The permittee shall maintain records of the fuel monitoring plan in Subsection 4(e), including the results of each fuel sampling [401 KAR 52:020, Section 10].
- (f) The permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems and devices, recorded in a permanent form suitable for inspection [401 KAR 52:020, Section 10].
- (g) The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the emissions unit, any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative [401 KAR 52:020, Section 10].
- (h) The permittee shall maintain records regarding all maintenance of the water injection system [401 KAR 52:020, Section 10].

6. <u>Specific Reporting Requirements</u>:

- (a) The permittee shall submit reports of excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c) for each unit. Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions and monitor downtime that shall be reported are:
 - (1) For nitrogen oxides, when using water or steam injection (excluding Emission Units 27 and 28 when burning natural gas) [40 CFR 60.334(j)(1)(i)]:

- (i) An excess emission shall be any unit operating hour for which the average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with the nitrogen oxide limit in Subsection 2(a), as established during the performance test required in Subsection 3(a). Any unit operating hour in which no water or steam is injected into the turbine shall also be considered an excess emission.
- (ii) A period of monitor downtime shall be any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.
- (iii) Each report shall include the average steam or water to fuel ratio, average fuel consumption, ambient conditions (temperature, pressure, and humidity), and gas turbine load. The permittee does not have to report ambient conditions if the permittee opts to use the worse case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii), or if the permittee is not using the ISO correction equation under the provisions of 40 CFR 60.334(b)(1).
- (2) For nitrogen oxides from Emission Units 27 and 28 when burning natural gas, the permittee shall use the previously submitted and approved procedure for monitoring NO_x compliance in Appendix E to 40 CFR 75 [40 CFR 60.334(c)].
- (3) For sulfur dioxide [40 CFR 60.334(j)(2)]:
 - (i) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the gas turbine exceeds the applicable value in Subsection 2(d) in weight percent and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.
 - (ii) If the option to sample each delivery of fuel oil has been selected, the owner or operator shall immediately switch to one of the other oil sampling options (i.e. daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.8 weight percent. The owner or operator shall continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and shall evaluate excess emissions according to Subsection (i) above. When all of the fuel from delivery has been burned, the owner or operator may resume using the as-delivered sampling option.

- (iii) A period of monitor downtime begins with a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime shall include only unit operating hours, and ends on the date and hour of the next valid sample.
- (4) Ice fog: Each period during which an exemption provided in Subsection 2(b) is in effect shall be reported in writing quarterly. For each period the ambient conditions existing during the period, the date and time the air pollution control system was deactivated, and the date and time the air pollution control system was reactivated shall be reported. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter [40 CFR 60.334(j)(3)].
- (5) Emergency Fuel: Each period during which an exemption provided in Subsection 2(c) is in effect shall be included in the report required in 40 CFR 60.7(c). For each period, the type, reasons, and duration of the firing of the emergency fuel shall be reported [40 CFR 60.334(j)(4)].
- (6) All reports required under 40 CFR 60.7(c) shall be postmarked by the 30th day following the end of each 6-month period [40 CFR 60.334(j)(4)].
- (b) See Section F.

7. <u>Specific Control Equipment Operating Conditions</u>:

- (a) The water injection control system shall be operated to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].
- (b) See Section E.

Emission Units 30-34

Limestone Handling

Emission Unit	Description	Construction Commenced	Maximum Operating Rating	Control Equipment
30	Limestone truck dump station #1	01/01/2008	250 tons/hr	Fabric filter
31	Limestone truck dump station #2	01/01/2008	250 tons/hr	Fabric filter
32	Limestone stacking tube	03/01/2008	500 tons/hr	Fabric filter
33	Limestone reclaim conveyor #1	03/01/2008	500 tons/hr	Esbria filtar
34	Limestone reclaim conveyor #2	03/01/2008	500 tons/hr	Faunc Inter

APPLICABLE REGULATIONS:

401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, incorporating by reference 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants;

1. **Operating Limitations**:

None

2. <u>Emission Limitations</u>:

(a) Each affected facility must meet a PM limit of 0.022 gr/dscf and an opacity limit of seven (7) percent within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 CFR 60.8 [40 CFR 60.672(a)].

Compliance Demonstration:

To demonstrate compliance with this requirement the permittee shall meet the testing requirements in Subsection 3.

(b) Emission Units 30 and 31 are exempt from the emission limits in Subsection 2(a) [40 CFR 60.672(d)].

3. <u>Testing Requirements</u>:

(a) In conducting the performance tests required by 40 CFR 60.8, for Emission Units 32-34, the permittee shall use as reference methods and procedures the test methods in appendices A-1 through A-7 of 40 CFR Part 60, except as provided in 40 CFR 60.8. The permittee may use the alternative methods and procedures provided in 40 CFR 60.675(e). [40 CFR 60.675(a)]

- (b) For the initial compliance demonstration required by 40 CFR 60.8, the permittee shall determine compliance with the PM standards in Subsection 2(a) using Method 5 of Appendix A-3 to 40 CFR 60 or Method 17 of Appendix A-6 to 40 CFR 60. The sample volume shall be at least 60 dscf (1.70 dscm). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but not higher than 121°C (250°F), to prevent water condensation on the filter. [40 CFR 60.675(b)(1)]
- (c) For the initial compliance demonstration required by 40 CFR 60.8, the permittee shall determine compliance with the opacity standards using Method 9 of Appendix A-4 to 40 CFR 60 and the procedures in 40 CFR 60.11 [40 CFR 60.675(b)(2)].

4. <u>Specific Monitoring Requirements</u>:

- (a) The permittee must conduct quarterly 30-minute visible emissions inspection using EPA Method 22 (40 CFR Part 60, Appendix A-7) for each fabric filter. The Method 22 shall be conducted while the fabric filter is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the fabric filter to normal operation. The permittee must record each Method 22 test, including the date and any corrective actions taken, in the logbook required by Subsection 5(a). [401 KAR 50:055]
- (b) As an alternative to the periodic Method 22 visible emissions inspections specified in Subsection 3(a) above, the permittee may use a bag leak detection system. The permittee must install, operate, and maintain the bag leak detection system according to 40 CFR 60.674(d)(1) through (3). [401 KAR 50:055]
- (c) The permittee shall monitor and record the amount of limestone processed and hours of operation on a monthly basis [401 KAR 52:020, Section 10].

5. Specific Recordkeeping Requirements:

- (a) The permittee shall maintain records of each periodic inspection required by Subsection 4(a) above, including dates and any corrective actions taken, in a logbook (in written or electronic format). The logbook must be kept onsite and make hard or electronic copies of the logbook available upon request. [401 KAR 52:020, Section 10]
- (b) For each bag leak detection system installed and operated, the permittee must keep records as specified in 40 CFR 60.676(2)(i) through (iii) (including records of the bag leak detection system output, records of adjustments to the system, and date and time of all bag leak detection system alarms and any corrective actions taken) [401 KAR 52:020, Section 10].
- (c) The permittee shall maintain records of limestone processed and hours of operation on a monthly basis [401 KAR 52:020, Section 10].

(d) The permittee shall maintain records of all maintenance regarding the control equipment [401 KAR 52:020, Section 10].

6. Specific Reporting Requirements:

- (a) The permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance, including reports of opacity observations made using Method 9 [40 CFR 60.676(f)].
- (b) See Section F.

7. <u>Specific Control Equipment Operating Conditions</u>:

- (a) The fabric filter shall be operated to maintain compliance with permitted emission limitations, in accordance with manufacturer's specifications and standard operating practices [401 KAR 50:055].
- (b) See Section E.

Emission Unit 39

Existing 4SLB SI Emergency RICE

Emission Unit	Description	Manufacture Date	Maximum Continuous Rating	Fuel	Control Equipment
39	WINCO Generator, Model B35CS-17R1D (Dix Dam Crest Gate Emergency Generator)	1970	40 HP	Gasoline	None

APPLICABLE REGULATIONS:

401 KAR 63:002, 40 CFR Part 63 national emission standards for hazardous air pollutants, incorporating by reference 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ICE).

1. **Operating Limitations**:

(a) Beginning no later than October 19, 2013, for each unit the permittee shall:

- (1) Change oil and filter every 500 hours of operation or annually, whichever comes first, or according to an oil analysis program;
- (2) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and
- (3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
- (4) Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-start emission limitations apply.

[40 CFR 63.6602, 40 CFR 63.6625(e) and 40 CFR 63.6625(i)]

Compliance Demonstration:

- 1. The permittee must operate and maintain the stationary RICE according to the manufacturer's emission-related operating and maintenance instructions, or develop and follow your own maintenance plan which must provide, to the extent practicable, for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6640(a)].
- 2. For each unit, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 (fifty) hours per year is prohibited. There is no limit on the use of emergency stationary RICE in emergency situations. Maintenance checks and readiness testing of these units is limited to 100 hours per year. Operation of a unit in non-emergency situations is counted towards the 100 hours per year provided for maintenance and testing, including, as provided in 40 CFR 63.6640(f)(4), for demand response. [40 CFR 63.6640(f)]

- (b) The permittee must be in compliance with the emission limitations and operating limitations in this subpart that apply at all times [40 CFR 63.6605(a)]
- 2. <u>Emission Limitations</u>:

None

3. <u>Testing Requirements</u>:

None

4. <u>Specific Monitoring Requirements</u>:

- (a) By no later than October 19, 2013, the permittee shall install a non-resettable hour meter if one is not already installed [40 CFR 63.6625(f)].
- (b) As an alternative to the requirement to change the oil every 500 hours of operation or annually, the permittee has the option of utilizing an oil analysis program, according to the methods and requirements in 40 CFR 63.6625(i), in order to extend the specified oil change requirements. [40 CFR 63.66225(i)]

5. <u>Specific Recordkeeping Requirements</u>:

- (a) The permittee must keep records of each notification and report that is submitted, the occurrence and duration of each malfunction of operation or the air pollution control and monitoring equipment, records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii), records of all required maintenance performed on the air pollution control and monitoring equipment, and records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation [40 CFR 60.6655(a)].
- (b) The permittee shall maintain records of the maintenance conducted on the engine in order to demonstrate that the engine was operated and maintained, including any after-treatment control device, according to the maintenance plan for the engine. [40 CFR 63.6655(e)].
- (c) If an engine is not certified to the standards applicable to non-emergency engines (see Table 2d to 40 CFR 63 Subpart ZZZZ), then the permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for demand respond, records must be kept of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR 63.6655(f)(1)]

6. <u>Specific Reporting Requirements</u>:

- (a) Must report each instance in which the operating limitations in Subsection 1 have not been met. These instances are deviations from the emission and operating limitation in 40 CFR 63 Subpart ZZZZ and must be reported according to 40 CFR 63.6650. [40 CFR 63.6640(b)]
- (b) Must report each instance in which the requirements of Table 8 to 40 CFR 63 Subpart ZZZZ, that apply, have not been met [40 CFR 63.6640(e)]. The notifications listed in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (f)(6), 40 CFR 63.9(b) through (e), and (g) are not required [40 CFR 63.6645(a)(5)].

(c) See Section F.

Emission Units 40-44

Existing CI Emergency RICE <500 HP

Emission Unit	Description	Manufacture Date	Maximum Continuous Rating	Fuel	Control Equipment
	Cummins, Model 3304	2000	135 HP	Diesel	None
40	(Brown Station				
	Emergency Generator)				
	Caterpillar, Model 3306	2000	308 HP	Diesel	None
41	(CT5 Emergency				
	Generator)				
	Perkins Engine, Model	1999	230 HP	Diesel	None
42	DP150P3 (CT6				
	Emergency Generator)				
	Perkins Engine, Model	1999	230 HP	Diesel	None
43	DP150P3 (CT7				
	Emergency Generator)				
	Cummins, Model	1994	208 HP	Diesel	None
44	681A5.9-F-1 (CT Area				
	Fire Pump Engine)				

APPLICABLE REGULATIONS:

401 KAR 63:002, 40 CFR Part 63 national emission standards for hazardous air pollutants, incorporating by reference 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).

1. **Operating Limitations**:

- (a) Beginning no later than May 3, 2013, for each unit the permittee shall:
 - (1) Change oil and filter every 500 hours of operation or annually, whichever comes first, or according to an oil analysis program;
 - (2) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
 - (3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
 - (4) Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-start emission limitations apply.

[40 CFR 63.6602, 40 CFR 63.6625(e), and 40 CFR 63.6625(i)]

Compliance Demonstration:

- 1. The permittee must operate and maintain the stationary RICE according to the manufacturer's emission-related operating and maintenance instructions, or develop and follow your own maintenance plan which must provide, to the extent practicable, for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6640(a)].
- 2. For each unit, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 (fifty) hours per year is prohibited. There is no limit on the use of emergency stationary RICE in emergency situations. Maintenance checks and readiness testing of these units is limited to 100 hours per year. Operation of a unit in non-emergency situations is counted towards the 100 hours per year provided for maintenance and testing, including, as provided in 40 CFR 63.6640(f)(4), for demand response. [40 CFR 63.6640(f)]
- (b) The permittee must be in compliance with the emission limitations and operating limitations in this subpart that apply at all times [40 CFR 63.6605(a)]

2. <u>Emission Limitations</u>:

None

3. <u>Testing Requirements</u>: None

4. <u>Specific Monitoring Requirements</u>:

- (a) By no later than May 3, 2013, the permittee shall install a non-resettable hour meter if one is not already installed [40 CFR 63.6625(f)].
- (b) As an alternative to the requirement to change the oil every 500 hours of operation or annually, the permittee has the option of utilizing an oil analysis program, according to the methods and requirements in 40 CFR 63.6625(i), in order to extend the specified oil change requirements. [40 CFR 63.66225(i)]

5. Specific Recordkeeping Requirements:

(a) The permittee must keep records of each notification and report that is submitted, the occurrence and duration of each malfunction of operation or the air pollution control and monitoring equipment, records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii), records of all required maintenance performed on the air pollution control and monitoring equipment, and records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation [40 CFR 60.6655(a)].

- (b) The permittee shall maintain records of the maintenance conducted on the engine in order to demonstrate that the engine was operated and maintained, including any after-treatment control device, according to the maintenance plan for the engine. [40 CFR 63.6655(e)].
- (c) If an engine is not certified to the standards applicable to non-emergency engines (see Table 2d to 40 CFR 63 Subpart ZZZZ), then the permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for demand respond, records must be kept of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR 63.6655(f)(1)]

6. <u>Specific Reporting Requirements</u>:

- (a) Must report each instance in which the operating limitations in Subsection 1 have not been met. These instances are deviations from the emission and operating limitation in 40 CFR 63 Subpart ZZZZ and must be reported according to 40 CFR 63.6650. [40 CFR 63.6640(b)]
- (b) Must report each instance in which the requirements of Table 8 to 40 CFR 63 Subpart ZZZZ, that apply, have not been met [40 CFR 63.6640(e)]. The notifications listed in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (f)(6), 40 CFR 63.9(b) through (e), and (g) are not required [40 CFR 63.6645(a)(5)].

⁽c) See Section F.

Emission Units 45-46

New CI Emergency Fire Pump RICE

Emission Unit	Description	Model Year	Maximum Continuous Rating	Fuel	Control Equipment
45	John Deere, Model 6081HF001, 8.1 L displacement per cylinder (Steam Plant Emergency Fire Pump Engine #1)	April 2007	375 HP	Diesel	None
46	John Deere, Model 6081HF001, 8.1 L displacement per cylinder (Steam Plant Emergency Fire Pump Engine #2)	April 2007	375 HP	Diesel	None

APPLICABLE REGULATIONS:

401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, incorporating by reference 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines;

401 KAR 63:002, 40 CFR Part 63 national emission standards for hazardous air pollutants, incorporating by reference 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ICE).

1. **Operating Limitations**:

- (a) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no limit on the use of emergency stationary ICE in emergency situations. If the engine is not certified to the standards in 40 CFR 60.4204, any operation other than emergency operation, and maintenance and testing, is prohibited. [40 CFR 60.4211(e)]
- (b) The permittee shall use diesel fuel certified to the standards in 40 CFR 80.510(b) for nonroad diesel fuel. [40 CFR 60.4207 (b)]

Compliance Demonstration:

The permittee shall demonstrate compliance by using fuel supplier certification.

2. <u>Emission Limitations</u>:

The permittee shall comply with the following emission standards for each unit (with maximum engine power greater than or equal to 300 HP and less than 600 HP):

Pollutant	Emission Standard
$NMHC + NO_X$	7.8 g/HP-hr
СО	2.6 g/HP-hr
PM	0.40 g/HP-hr

[40 CFR 60.4205(c)]

Compliance Demonstration:

- (1) The permittee shall demonstrate compliance with the emission standards by purchasing an engine certified to the emission standards listed above. The engine must be installed and configured according to the manufacturer's specifications. In the absence of certification from the manufacturer, the permittee shall maintain records of performances tests conducted on the engines, or similar engines, which demonstrate the engines meet the emission standards and that the testing was conducted according to Subsection 3. [40 CFR 60.4211(c) and 401 KAR 52:020, Section 10]
- (2) The permittee must operate and maintain the stationary CI ICE and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine. In addition, the permittee shall only change those settings that are permitted by the manufacturer. The permittee must also meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as they apply. [40 CFR 60.4211(a) and 40 CFR 60.4206]

3. <u>Testing Requirements</u>:

Testing must conform to the requirements of 40 CFR 60.4212(a)-(d), as appropriate [40 CFR 60.4212].

4. Specific Monitoring Requirements:

The permittee shall install a non-resettable hour meter prior to startup of the engine [40 CFR 60.4209(a)].

5. Specific Recordkeeping Requirements:

The permittee shall maintain records necessary to demonstrate compliance with the emission limits in Subsection 2, according to the method specified, and fuel supplier certification according to the fuel requirements in Subsection 1(b). Records of performance tests shall report emission limits and actual emissions in the units of the applicable standard. [401 KAR 52:020, Section 10]

6. <u>Specific Reporting Requirements</u>:

See Section F.

Emission Units 47-49

New CI Emergency RICE

Emission Unit	Description	Model Year	Maximum Continuous Rating	Fuel	Control Equipment
	John Deere, Model 6125HF070,	April 2007	485 HP	Diesel	None
47	(Emergency Quench Water Pump		(302 KW)		
	Engine #1)				
	John Deere, Model 6125HF070,	April 2007	485 HP	Diesel	None
48	12.5 L total displacement		(362 kW)		
	(Emergency Quench Water Pump				
	Engine #2)				
49	Generac Make: Doosan; Model:	2010	752 HP	Diesel	None
	390; 10 cylinder, 18.3 L		(561 kW)		

APPLICABLE REGULATIONS:

401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, incorporating by reference 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines;

401 KAR 63:002, 40 CFR Part 63 national emission standards for hazardous air pollutants, incorporating by reference 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ICE).

1. **Operating Limitations:**

- (a) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no limit on the use of emergency stationary ICE in emergency situations. If the engine is not certified to the standards in 40 CFR 60.4204, any operation other than emergency operation, and maintenance and testing, is prohibited. [40 CFR 60.4211(e)]
- (b) The permittee shall use diesel fuel certified to the standards in 40 CFR 80.510(b) for nonroad diesel fuel. [40 CFR 60.4207 (b)]

Compliance Demonstration:

The permittee shall demonstrate compliance by using fuel supplier certification.

2. <u>Emission Limitations</u>:

(a) The permittee shall comply with the emission standards for new non-road CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for Tier 3 engines. [40 CFR 60.4205(b)]

Compliance Demonstration:

- (1) The permittee shall demonstrate compliance with the emission standards by purchasing an engine certified to the emission standards in 40 CFR 89. The engine must be installed and configured according to manufacturer's specifications. In the absence of certification from the manufacturer, the permittee shall maintain records of performances tests conducted on the engines, or similar engines, which demonstrate the engines meet the emission standards and that the testing was conducted according to Subsection 3. [40 CFR 60.4211(c) and 401 KAR 52:020, Section 10]
- (2) The permittee must operate and maintain the stationary CI ICE according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, the permittee shall only change those settings that are permitted by the manufacturer. The permittee must also meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as they apply. [40 CFR 60.4211(a)]

3. <u>Testing Requirements</u>:

Testing must conform to the requirements of 40 CFR 60.4212(a)-(d), as appropriate [40 CFR 60.4212].

4. Specific Monitoring Requirements:

The permittee shall install a non-resettable hour meter prior to startup of the engine [40 CFR 60.4209(a)].

5. Specific Recordkeeping Requirements:

The permittee shall maintain records necessary to demonstrate compliance with the emission limits in Subsection 2, according to the method specified, and fuel supplier certification according to the fuel requirements in Subsection 1(b). Records of performance test shall report emission limits and actual emissions in the units of the applicable standard. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

- (a) The permittee is not required to submit an initial notification [40 CFR 60.4214(b)]
- (b) See Section F.

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. Although these activities are designated as insignificant the permittee must comply with the applicable regulation. Process and emission control equipment at each insignificant activity subject to an opacity standard shall be inspected monthly and a qualitative visible emissions evaluation made. Results of the inspection, evaluation, and any corrective action shall be recorded in a log.

Description

Generally Applicable Regulation

1. Station fuel-oil tanks (2 @ 1,100,000 gallons each)	None
2. Fuel-oil tanks (various, installed before 1973)	None
3. Lubricating oil tanks (2 @ 9,000 gallons each)	None
4. Unleaded gasoline storage tanks	None
5. Lubricating oil tank (6,500 gallons)	None
6. Lubricating oil tank (2 @ 3,600 gallons each)	None
7. Lubricating oil tank (4 @ 3,500 gallons each)	None
8. Lubricating oil tank (2 @ 3,000 gallons each)	None
9. Sulfur trioxide (SO ₃) injection system (Emission Unit 1)	None
10. Thermal evaporation of boiler chemical cleaning solutions	401 KAR 61:020
11. Burning of Off-Specification Used Oil for Energy Recovery	401 KAR 61:015
12. Natural Gas Fired Fuel Heaters (less than 7 MMBtu/hr each)	401 KAR 61:015
13. Kerosene Tank (500 gallons)	None
14. Distillate Oil and/or Propane Coal Belt Heaters	None
15. Gypsum Slurry Transfer from FGD to Gypsum Dewatering	401 KAR 59:010
16. Gypsum Dewatering Process	401 KAR 59:010
17. Gypsum Storage Pile	401 KAR 63:010
18. Limestone Storage Pile	401 KAR 63:010
19. Limestone Reclaim Maintenance Tunnel Exhaust Vent	401 KAR 59:010
20. Sorbent Storage Silos (for SO ₃ mitigation)	401 KAR 59:010

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

- 1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.
- 2. Particulate matter, sulfur dioxide, nitrogen dioxide, VOC, carbon monoxide, beryllium, and opacity emissions, measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter I, or by a test method specified in the state implementation plan shall not exceed the respective limitations specified herein.
- 3. No owner or operator shall allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. The permittee is in compliance with these requirements based on the rates of emissions of airborne toxics provided in the application submitted by the permittee. If the permittee alters processes, process rates, material formulations, or any other factor that would result in increased emissions of airborne toxics, the permittee shall submit the appropriate application forms pursuant to 401 KAR 52:020, Section 3(1)(a). [401 KAR 63:020, Section 3]

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used shall be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

- 1. When continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - (a) Date, place as defined in this permit, and time of sampling or measurements;
 - (b) Analyses performance dates;
 - (c) Company or entity that performed analyses;
 - (d) Analytical techniques or methods used;
 - (e) Analyses results; and
 - (f) Operating conditions during time of sampling or measurement.

[Section 1b-IV-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26]

- 2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality. [Sections 1b-IV-2 and 1a-8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26]
- 3. In accordance with the requirements of 401 KAR 52:020 Section 3(1)h the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
 - (a) Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
 - (b) To access and copy any records required by the permit:
 - (c) Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.

Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.

4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

- 5. Summary reports of any monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation. [Sections 1b-V-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26]
- 6. The semi-annual reports are due by January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to 401 KAR 52:020 Section 23. If continuous emission and opacity monitors are required by regulation or this permit, data shall be reported in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All deviations from permit requirements shall be clearly identified in the reports.
- 7. In accordance with the provisions of 401 KAR 50:055, Section 1 the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - (a) When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - (b) When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.
- 8. The owner or operator shall report emission related exceedances from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Section F.7 above) to the Regional Office listed on the front of this permit within 30 days. Deviations from permit requirements, including those previously reported under F.7 above, shall be included in the semiannual report required by F.6. [Sections 1b-V, 3 and 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26]
- 9. The permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
 - (a) Identification of the term or condition;
 - (b) Compliance status of each term or condition of the permit;

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

- (c) Whether compliance was continuous or intermittent;
- (d) The method used for determining the compliance status for the source, currently and over the reporting period.
- (e) For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements shall be demonstrated within the timeframes specified in the permit.
- (f) The certification shall be postmarked by January 30th of each year. Annual compliance certifications shall be mailed to the following addresses:

Division for Air Quality Frankfort Regional Office 200 Fair Oaks Lane, 3rd Floor Frankfort, KY 40601 U.S. EPA Region 4 Air Enforcement Branch Atlanta Federal Center 61 Forsyth St. Atlanta, GA 30303-8960

[401 KAR 52:020, Permits, Section 21]

10. The permittee shall provide the Division with all information necessary to determine its subject emissions within thirty (30) days of the date the Kentucky Emissions Inventory System (KYEIS) emissions survey is mailed to the permittee [401 KAR 52:020, Section 22].

SECTION G - GENERAL PROVISIONS

- 1. <u>General Compliance Requirements</u>
 - (a) The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020 Section 3(1)(b) and a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act). Noncompliance with this permit is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit. [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020 Section 26]
 - (b) The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
 - (c) This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - (1) If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
 - (2) The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
 - (3) The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;
 - (4) New requirements become applicable to a source subject to the Acid Rain Program.

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Re-openings shall be made as expeditiously as practicable. Re-openings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

(d) The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the conditions of this permit [Sections 1a- 7 and 8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

- (e) Emission units described in this permit shall demonstrate compliance with applicable requirements if requested by the Division [401 KAR 52:020 Section 3(1)(c)].
- (f) The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].
- (g) Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a-14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- (h) The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a-4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- (i) Except for requirements identified in this permit as state-origin requirements, all terms and conditions shall be enforceable by the United States Environmental Protection Agency and citizens [Section 1a-15-b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- (j) This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a-10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- (k) Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3) 2].
- (1) This permit does not convey property rights or exclusive privileges [Section 1a-9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- (m)Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.
- (n) Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3) 4].
- (o) Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3) 1].

- (p) This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.
- (q) A permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with:
 - (1) Applicable requirements that are included and specifically identified in the permit and
 - (2) Non-applicable requirements expressly identified in this permit.

[401 KAR 52:020, Section 11]

- 2. Permit Expiration and Reapplication Requirements
 - (a) This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division. [401 KAR 52:020, Section 12]
 - (b) The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:020 Section 8(2)].
- 3. <u>Permit Revisions</u>
 - (a) A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
 - (b) This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.

4. <u>Construction, Start-Up, and Initial Compliance Demonstration Requirements</u>

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the construction of the equipment described herein, selective catalytic reduction (SCR) for Emission Unit 3, in accordance with the terms and conditions of permit V-10-004.

- a. Construction of any process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
- b. Within thirty (30) days following commencement of construction of the SCR and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Regional Office listed on the front of this permit in writing, with a copy to the Division's Frankfort Central Office, notification of the following:
 - (1) The date when construction commenced.
 - (2) The date of start-up of the affected facilities listed in this permit.
 - (3) The date when the maximum production rate specified in the permit application was achieved.
- c. Pursuant to 401 KAR 52:020, Section 3(2), unless construction is commenced within eighteen (18) months after the permit is issued, or begins but is discontinued for a period of eighteen (18) months or is not completed within a reasonable timeframe then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon written request, the Cabinet may extend these time periods if the source shows good cause.
- d. For those affected facilities for which construction is authorized by this permit, a source shall be allowed to construct with the proposed permit. Operational or final permit approval is not granted by this permit until compliance with the applicable standards specified herein has been demonstrated pursuant to 401 KAR 50:055. If compliance is not demonstrated within the prescribed timeframe provided in 401 KAR 50:055, the source shall operate thereafter only for the purpose of demonstrating compliance, unless otherwise authorized by Section I of this permit or order of the Cabinet.
- e. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct the performance demonstration in Section B, Emission Units 1-3, Subsection 3(e) on the affected facilities in accordance with 401 KAR 50:055, General compliance requirements. Testing must also be conducted in accordance with General Provisions G(5) of this permit.
- f. Terms and conditions in this permit established pursuant to the construction authority of 401 KAR 51:017 or 401 KAR 51:052 shall not expire.

- 5. <u>Testing Requirements</u>
 - (a) A source required to conduct a performance test shall submit a completed Compliance Test Protocol form, DEP form 6028, or a test protocol a source has developed for submission to other regulatory agencies, in a format approved by the cabinet, to the Division's Frankfort Central Office a minimum of sixty (60) days prior to the scheduled test date. Pursuant to 401 KAR 50:045, Section 7, the Division shall be notified of the actual test date at least Thirty (30) days prior to the test. [401 KAR 50:045 Section 2]
 - (b) In order to demonstrate that a source is capable of complying with a standard at all times, any required performance test shall be conducted under normal conditions that are representative of the source's operations and create the highest rate of emissions. If [When] the maximum production rate represents a source's highest emissions rate and a performance test is conducted at less than the maximum production rate, a source shall be limited to a production rate of no greater than 110 percent of the average production rate during the performance tests. If and when the facility is capable of operation at the rate specified in the application, the source may retest to demonstrate compliance at the new production rate. The Division for Air Quality may waive these requirements on a case-by-case basis if the source demonstrates to the Division's satisfaction that the source is in compliance with all applicable requirements. [401 KAR 50:045 Section 5]
 - (c) Results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days or sooner if required by an applicable standard, after the completion of the fieldwork.
- 6. Acid Rain Program Requirements
 - (a) If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 76510 (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.
 - (b) The permittee shall comply with all applicable requirements and conditions of the Acid Rain Permit and the Phase II permit application (including the Phase II NOx compliance plan and averaging plan, if applicable) incorporated into the Title V permit issued for this source. The source shall also comply with all requirements of any revised or future acid rain permit(s) issued to this source.
- 7. <u>Emergency Provisions</u>
 - (a) An emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:

- (1) An emergency occurred and the permittee can identify the cause of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
- (4) Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.01-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
- (5) This requirement does not relieve the source of other local, state or federal notification requirements.
- [401 KAR 52:020 Section 24(1)]
- (b) Emergency conditions listed in General Condition G.7.a above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].
- (c) In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].
- 8. Ozone Depleting Substances
 - (a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
 - (1) Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - (2) Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - (3) Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - (4) Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166.

- (5) Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
- (6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
- (b) If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*.
- 9. <u>Risk Management Provisions</u>
 - (a) The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:

RMP Reporting Center P.O. Box 1515 Lanham-Seabrook, MD 20703-1515.

(b) If requested, submit additional relevant information to the Division or the U.S. EPA.

SECTION H – ALTERNATE OPERATING SCENARIOS

None

SECTION I – COMPLIANCE SCHEDULE

None

SECTION J - ACID RAIN PERMIT

1. <u>Statutory and Regulatory Authority</u>

In accordance with KRS 224.10-100 and Titles IV and V of the Clean Air Act, the Kentucky Environmental and Public Protection Cabinet, Division for Air Quality issues this permit pursuant to 401 KAR 52:020, Permits, 401 KAR 52:060, Acid Rain Permit, and 40 CFR Part 76.

2. <u>Permit Requirements:</u>

This Acid Rain Permit covers Acid Rain Units 1-3 (Emission Units 01-03) and 5-11 (Emission Units 23-29) at the E.W. Brown plant (ORIS Code: 001355). Units 1-3 are coalfired based load electric generating units. Units 5-11 are natural gas- or distillate oil-fired peaking combustion turbines. The Acid Rain Permit Application and NO_X Compliance Plan received on March 1, 2010, for Phase II are hereby incorporated into and made part of this permit and the permittee must comply with the standard requirements and special provisions set forth in the application [40 CFR 72.9(a)(2)].

3. Acid Rain Program Emission and Operating Limitations:

(a) The applicable Acid Rain emission limitations for the permittee are as follows [40 CFR 73.10, Table 2, 40 CFR 76.5, and 40 CFR 76.11]:

Unit	Annual SO ₂ Allowances	Emission Limitation (lb/MMBtu)	Annual Average NO _X ACEL (lb/MMBtu)	Annual Heat Input Limit, when complying with ACEL (MMBtu)
1	3,071	0.50	0.50	4,597,000
2	5,817	0.45	0.45	11,592,000
3	11,273	0.45	0.45	28,309,000
5	0	N/A	N/A	N/A
6	0	N/A	N/A	N/A
7	0	N/A	N/A	N/A
8	0	N/A	N/A	N/A
9	0	N/A	N/A	N/A
10	0	N/A	N/A	N/A
11	0	N/A	N/A	N/A

(b) The number of allowances allocated to Phase II affected units by the U.S. EPA may change under 40 CFR Part 73. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO2 allowance allocations identified in this permit. [40 CFR 72.84]

4. <u>Compliance Plan:</u>

(a) The permittee shall operate in compliance with the requirements contained in the Acid Rain application and incorporated into this permit [40 CFR 72.9].

SECTION J - ACID RAIN PERMIT (CONTINUED)

- (b) The Division approves the NO_X Average Plan submitted for these units for the NO_X Emissions Compliance Plan, effective for the duration of this permit. Under this plan, a unit's NO_X emissions shall not exceed the applicable annual average alternative contemporaneous emissions limitation (ACEL) listed in Subsection 3(a). [40 CFR 76]
 - (1) The actual Btu-weighted annual average NO_X emission rate for the units in the plan shall be less than or equal to the Btu-weighted annual average NO_X emission rate for the same units had they been operated, during the same period of time, in compliance with the individual applicable emission limitations under 40 CFR 76.5, 76.6, or 76.7 and listed in Subsection 3(a).
 - (2) For each unit, if the designated representative demonstrates that the requirement of Subsection 4(b)(1) is met for the plan year, then the unit shall be deemed to be in compliance for the year with its ACEL and associated heat input limit in Subsection 3.
 - (3) If the designated representative cannot make the demonstration in Subsection 4(b)(1), according to 40 CFR 76.11(d)(1)(ii)(A), for the plan year and if a unit fails to meet the annual average ACEL or has a heat input greater than the applicable value listed in Subsection 3, then excess emissions of NO_X have occurred during the year for that unit.
 - (4) In addition to the described NO_X compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_X compliance plan and requirements covering excess emissions.
- (c) By March 1, 2009, the permittee shall permanently surrender to EPA, or transfer to a non-profit third party, a total of 53,000 SO₂ allowances of 2008 or earlier vintage. This is a permanent federally enforceable requirement. [Consent Decree, Paragraph 25]

SECTION K – CLEAN AIR INTERSTATE RULE (CAIR) PERMIT

1. <u>Statutory and Regulatory Authority:</u>

In accordance with KRS 224.10-100, the Kentucky Energy and Environmental Cabinet issues this permit pursuant to 401 KAR 52:020, Title V permits, 401 KAR 51:210, CAIR NO_X annual trading program, 401 KAR 51:220, CAIR NO_X ozone season trading program, and 401 KAR 51:230, CAIR SO₂ trading program.

2. <u>Permit Requirements:</u>

This CAIR Permit covers CAIR Units 1-3 and 5-11 (Emission Units 1-3 and 23-29) at the E.W. Brown plant (ORIS Code: 001355). Units 1-3 are coal-fired based load electric generating units. Units 5-11 are natural gas- or distillate oil-fired peaking combustion turbines. The CAIR application for ten electrical generating units was submitted to the Division and received on July 3, 2007. The standard requirements and special provisions set forth in the application are hereby incorporated into and made part of this CAIR Permit. [401 KAR 51:210, 401 KAR 51:220, and 401 KAR 51:230]

3. <u>Compliance Plan:</u>

- (a) The permittee shall operate in compliance with the requirements contained in the CAIR application and incorporated into this permit [40 CFR 96.106, 40 CFR 96.206, 40 CFR 96.306].
- (b) The permittee shall not sell, trade, or transfer any NO_X allowances allocated to Emission Unit 03 that would otherwise be available for sale, trade, or transfer as a result of the actions taken by the permittee to comply with the Consent Decree. The NO_X allowances allocated to Emission Unit 03 (CAIR Unit 3) may be used by the permittee only to meet its own federal and/or state Clean Air Act regulatory requirements for Emission Unit 03. This is a permanent federally enforceable limit. [Consent Decree, Paragraph 12]
- (c) For each calendar year beginning with 2009 and continuing through calendar year 2020, the permittee shall surrender to EPA, or transfer to a non-profit third party, Surplus NO_X Allowances. This is a permanent federally enforceable limit. [Consent Decree, Paragraph 13]
- (d) Nothing shall preclude the permittee from selling or transferring NO_X allowances allocated to Emission Unit 03 (CAIR Unit 3) that become available for sale or trade solely as a result of the achievement and maintenance of a NO_X emission rate below a 30-day rolling average emission rate for NO_X of 0.070 lb/MMBtu [Consent Decree, Paragraph 17].