



Louisville Metro Air Pollution Control District
 701 West Ormsby Avenue, Suite 303
 Louisville, Kentucky 40203-3137



July 27, 2020

**Title V
 Statement of Basis**

Source: Louisville Gas & Electric Company **Owner:** Louisville Gas & Electric Company
 Mill Creek Generating Station
 14460 Dixie Highway
 Louisville, KY 40272
 220 W. Main Street
 Louisville, KY 40202

Application Documents:	See Table I-9	Administratively Complete:	03/26/2019
Draft Permit:	06/11/2020	Proposed Permit:	06/11/2020
Permitting Engineer:	Yiqiu Lin	Permit Number:	O-0127-20-V
Plant ID:	0127	SIC:	4911
		NAICS:	221112

Introduction:

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

This permit action renews Title V permit as scheduled and updates permit format and permit language.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), particulate matter less than 10 microns (PM₁₀), and particulate matter less than 2.5 microns (PM_{2.5}). Jefferson County is classified as a nonattainment area for ozone (O₃). This facility is located in the portion of Jefferson County that is a nonattainment area for sulfur dioxide (SO₂).

Permit Application Type:

- | | | |
|---|--|--|
| <input type="checkbox"/> Initial issuance | <input type="checkbox"/> Permit Revision | <input checked="" type="checkbox"/> Permit renewal |
| | <input type="checkbox"/> Administrative | |
| | <input type="checkbox"/> Minor | |
| | <input type="checkbox"/> Significant | |

Compliance Summary:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Compliance certification signed | <input type="checkbox"/> Compliance schedule included |
| <input type="checkbox"/> Source is out of compliance | <input checked="" type="checkbox"/> Source is operating in compliance |

I. Source Information

1. Product Description:

Louisville Gas & Electric- Mill Creek Generating Station generates electric energy for local and remote distribution.

2. Process Description:

Coal is the primary fuel used to fire commercial boilers for generation of electricity via steam turbines and generators.

3. Site Determination:

There are no other facilities that are contiguous or adjacent to this facility.

4. Emission Unit Summary:

Emission Unit	Equipment Description
U1	One coal/natural gas fired boiler (E1) and one coal silos and mills (E2)
U2	One coal/natural gas fired boiler (E3) and one coal silos and mills (E4)
U3	One coal/natural gas fired boiler (E5) and one coal silos and mills (E6)
U4	One coal/natural gas fired boiler (E7) and one coal silos and mills (E8)
U8	Flyash storage and handling unit
U9	Flyash transfer bins
U12	Limestone handling
U14	Cooling towers (E38) for U4
U15	Haul road (E39), including paved and unpaved road
U16	Lime sorbent storage silos
U17	PAC storage silos
U18	New flyash silos
U20	Gypsum pelletizing plant
U21	Coal handling operation
U22	Landfill, including haul roads, drop points and wind erosion
IA1	Gasoline storage tank
IA2	Parts washers
IA3	Emergency generators
IA4	Fire pump engines
IA5	Other insignificant activities

5. Fugitive Sources:

There are fugitive emissions from haul roads, landfill area, and material stack piles at this source.

6. Permit Revisions:

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
145-97-TV	1/19/2003	6/1/2003	Initial	Initial Issuance
145-97-TV (R1)	6/5/2014	7/31/2014	Renewal	Permit renewal and incorporate construction permit ^a
	a. Incorporated construction permits include 215-01, 216-01, 225-01, 142-05, 143-05, 144-05, 145-05, 37-07, 38-07, 426-07, 30399-11, 34595-12, 34658-12, 35668-12, 35673-12			
145-97-TV (R2)	N/A	3/16/2016	Admin. Revision	Insignificant changes made to incorporate updated information ^b
	b. Changes include the following: 1) Page 19, 22, 23, 30, and 35: Update Hg control requirements. 2) Page 40, 43, 44, 48, and 53: Update U4-C30 control efficiencies per stack test report. 3) Page 59, 63-64, 76-77, 82, 83, and 84: Add normal pressure range for U9 baghouses. 4) Page 89, 93-94, 102, 103, 108, 109, and 111: Revise TAC emission standards to exclude Category 3 & 4 TACs for existing sources and use de minimis values as emission standards. 5) Page 120, 123, and 340: Add BART requirements.			
145-97-TV (R3)	12/24/2016	4/5/2017	Admin. Revision	Administrative changes made to incorporate updated information ^c
			Significant Revision	Significant changes made to incorporate updated information ^d
	c. Administrative changes include the following: 1) Create Plantwide Requirements section to include plantwide emission standards. 2) Convert unit comments to footnotes. 3) Update MACT requirements per technical corrections document 81 FR 20172. 4) Add footnote for new control devices startup date per submitted notifications. 5) Add normal pressure drop range for U1-4 PJFF established by testing. 6) Delete unit IA-EG since source does not have equipment covered by this emission unit. 7) Add unit IA-OT for insignificant activities that subject to specific emission standards. 8) Add de-dusting system to Unit 20, NPR. 9) Add fuel additive for NOx and Hg to Unit 21, NPR. 10) Add gypsum dewatering systems to IA Table, NPR. 11) Clarify averaging period for PM emission limits per regulation 7.08.			

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
				12) Update bypass language for PM and SO ₂ control devices. 13) Add normal pH range for U1-U4 FGD. 14) Add normal pressure drop range for U9 Flyash Transfer Bins baghouses. d. Significant changes include the following: 1) Incorporate CSAPR applicable requirements. 2) Add 30 days average SO ₂ standards per NAAQS and modeling. 3) Incorporate Jan. 21, 2016 STAR EA Demo revised for sulfuric acid emissions. Add sulfuric acid emission limits for each EGU.
145-97-TV (R4)	4/23/2017	6/01/2017	Admin. revision	Updated CSAPR requirements; Incorporate new ash silos (IA)
			Significant revision	Incorporate CAIR applicable requirements
145-97-TV (R5)	N/A	7/17/2017	Admin. revision	Incorporate new mixers into IA table and IA unit
145-97-TV (R6)	N/A	11/19/2018	Admin. revision	Incorporate new generator and PWS into IA table and IA units
O-0127-20-V	6/11/2020	7/27/2020	Renewal	Permit renewal. Update permit format and language. Incorporate replacement of U8 Silo A control device. Incorporate replacement of U8 railcar load-out Silo A and B control devices. Remove CAIR requirements.

7. Construction Permit History:

There are no construction permits issued since the last Title V permit renewal, 145-97-TV (R1).

8. Application and Related Documents

Document Number	Date	Description
96815, 96861	1/25/2019	Title V permit renewal application
96904	1/30/2019	Title V renewal application completeness determination
124352	11/12/2019	Construction application for dust collector of Unit 8, Silo A
124361	11/13/2019	Approval of construction application for new Unit 8 Silo dust collector
126218	12/13/2019	Construction application for Unit 8, railcar load-out Silo A and Silo B dust collectors
126289	12/16/2019	Approval of construction application for Unit 8, railcar load-out Silo A and Silo B dust collectors

Document Number	Date	Description
130424	2/5/2020	Pre-draft Title V permit for company review
133260	2/8/2020	Company comments on pre-draft Title V permit
134089	3/4/2020	District response to pre-draft comments and additional questions based on company's comments
134339	3/9/2020	Email regarding flyash sampling and other questions
135442	3/20/2020	Mill Creek CAM plan updated
136435	4/3/2020	Application 100A for RO change
136904	4/10/2020	Request STAR EA Demo updated per new flyash samplings
138598	4/24/2020	Correspondence related to Title V renewal permit
138612, 138678, 138602	4/27/2020	Flyash sampling correspondences
139356, 139479	5/4/2020	Correspondences related to company response to request for EA Demo
139682	5/6/2020	APCD accepted company proposed flyash sampling analysis
139711, 139712	5/7/2020	APCD informed for optional STAR EA Demo and company response
154432	7/9/2020	Company notification of format errors
155252	7/13/2020	Company notification of pressure drop range for control devices in U8

9. Emission Summary

Pollutant	District Calculated Actual Emissions (tpy) 2018 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	987.7	Yes
NO _x	7,958.0	Yes
SO ₂	3,755.2	Yes
PM ₁₀	195.0	Yes
VOC	118.2	Yes
Total HAPs	45.2	Yes
Single HAP > 1 tpy		
Hydrochloric Acid	26.3	Yes

Pollutant	District Calculated Actual Emissions (tpy) 2018 Data	Pollutant that triggered Major Source Status (based on PTE)
Hydrogen Fluoride	8.1	Yes
Cyanide Compounds	4.9	No

10. Applicable Requirements

- 40 CFR 60 SIP 40 CFR 63
 40 CFR 61 District Origin Other

11. Referenced MACT Federal Regulations:

- 40 CFR 63 Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 40 CFR 63 Subpart UUUUU National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (EGU MACT)

12. Referenced non-MACT Federal Regulations:

- 40 CFR 52 Subpart S Approval and Promulgation of Implementation Plans - Kentucky
- 40 CFR 60 Subpart D Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971
- 40 CFR 60 Subpart Y Standards of Performance for Coal Preparation Plants
- 40 CFR 60 Subpart OOO Standards of Performance for Nonmetallic Mineral Processing Plants
- 40 CFR 60 Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- 40 CFR 64 Compliance Assurance Monitoring for Major Stationary Sources
- 40 CFR 68 Chemical Accident Prevention Provisions
- 40 CFR 72 Permits Regulation
- 40 CFR 73 Sulfur Dioxide Allowance System
- 40 CFR 75 Continuous Emission Monitoring
- 40 CFR 76 Acid Rain Nitrogen Oxides Emission Reduction Program
- 40 CFR 77 Excess Emissions
- 40 CFR 78 Appeals Procedures for Acid Rain Program
- 40 CFR 97 Subpart AAAAA CSAPR NOx Annual Trading Program

40 CFR 97 Subpart CCCCC
40 CFR 97 Subpart EEEEE

CSAPR SO₂ Group 1 Trading Program
CSAPR NO_x Ozone Season Group 2 Trading Program

II. Regulatory Analysis

1. Acid Rain Requirements:

The source is subject to the Acid Rain Program. The owner or operator shall comply with the acid rain requirements according to 40 CFR Parts 72, 75 and 76 for Group I boilers. Louisville Gas & Electric Company has chosen to meet the early election NO_x requirements for Group I Phase II boilers. The Acid Rain permit, which is attached to the Title V permit and this construction permit, is going to be reissued at the same time of the Title V in order to make a combined Title V and Title IV permit.

2. Stratospheric Ozone Protection Requirements:

Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. The source stores refrigerants listed under Title VI of the CAAA in a service garage. The source will comply with the Title VI regulations for recycling and recovery. The District does not have Title VI authority.

3. Prevention of Accidental Releases 112(r):

The source does manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68 Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount. Therefore, the source is required to develop and implement a Risk Management Plan pursuant to 40 CFR 68, Subpart G and Regulation 5.15.

4. 40 CFR Part 64 Applicability Determination:

The coal-fired boilers are subject to 40 CFR Part 64 - *Compliance Assurance Monitoring (CAM) for Major Stationary Source* since NO_x, SO₂ and PM emissions from each of the boilers are greater than the major source threshold and control devices are required to achieve compliance with standards. The source submitted an revised CAM Plan on March 20, 2020.

5. Regional Haze State Implementation Plan (SIP):

The Kentucky's Regional Haze SIP, which was submitted on June 25, 2008 and May 28, 2010 and limitedly approved on March 30, 2012, establishes best available retrofit technology (BART) controls, emission limits, and compliance timeframes for Unit 3 and 4 at this source.

6. Cross-State Air Pollution Rule (CSAPR):

The coal fired EGUs at this source are covered by CSAPR. According to 40 CFR 97 Subpart AAAAA, CCCCC, and EEEEE, fossil-fuel-fired boilers serving a generator with nameplate capacity of more than 25 MW producing electricity for sale are subject to CSAPR NOx annual trading program, CSAPR NOx ozone season trading program, and SO₂ trading program.

7. Basis of Regulation Applicability

a. Applicable Regulations

Regulation	Title	Basis
1.14	Control of Fugitive Particulate Emissions	Regulation 1.14 establishes the requirements for the control of fugitive particulate emissions for any source.
5.00	Definitions	This regulation defines terms used in the Strategic Toxic Air Reduction Program.
5.01	General Provisions	This regulation contains a statement of general duty and a savings clause relating to federal and SIP emission standards.
5.02	Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants	This regulation incorporates by reference certain national emission standards for hazardous air pollutants in 40 CFR Parts 61 and 63.
5.14	Hazardous Air Pollutants and Source Categories	This regulation establishes the hazardous air pollutants regulated by the District and the major and minor source categories of HAPs.
5.15	Chemical Accident Prevention Provisions	This regulation implements the provisions of 40 CFR Part 68 Chemical Accident Prevention Provisions as required by the Act §112 (r).
5.20	Methodology for Determining the Benchmark Ambient Concentration of a Toxic Air Contaminant	This regulation establishes the methodology for determining the benchmark ambient concentration of a toxic air contaminant.
5.21	Environmental Acceptability for Toxic Air Contaminants	This regulation establishes the criteria for determining the environmental acceptability of emissions of toxic air contaminants
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	This regulation establishes the procedures for determining the maximum concentration of a toxic air contaminant in the ambient air.
5.23	Categories of Toxic Air Contaminants	This regulation identifies the categories of toxic air contaminants to be addressed in these regulations.

Regulation	Title	Basis
6.02	Emission Monitoring for Existing Sources	This regulation establishes the procedures for emission monitoring for existing sources which were commenced prior to September 1, 1976.
6.07	Standards of Performance for Existing Indirect Heat Exchangers	This regulation provides for the control of emissions from existing indirect heat exchangers which commenced prior to September 1, 1972.
6.09	Standards of Performance for Existing Process Operations	This regulation establishes the requirements for PM emission from new processes that commences construction prior to September 1, 1976.
6.18	Standards of Performance for Solvent Metal Cleaning Equipment	This regulation applies to each cold cleaner that use VOCs to remove soluble impurities from metal surfaces.
6.42	Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities	This regulation establishes the requirements for Reasonably Available Control Technology (RACT) determination, demonstration, and compliance for VOC and NOx emitting facilities for new or renewed operating permit applications.
6.47	Federal Acid Rain Program Incorporated by Reference	This regulation incorporates by reference the Federal Acid Rain Program of the Clean Air Act for affected facilities.
7.02	Adoption and Incorporation by Reference of Federal New Source Performance Standards	This regulation incorporates by reference certain federal Standards of Performance for New Stationary Sources in 40 CFR Part 60.
7.06	Standards of Performance for New Indirect Heat Exchangers	This regulation establishes the requirements for new indirect heat exchangers having a capacity less than 250 MMBtu/hr and commenced after the applicable classification date.
7.08	Standards of Performance for New Process Operations	This regulation establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.
7.15	Standards of Performance for Gasoline Transfer to New Service Station Storage Tanks (Stage I Vapor Recovery)	This regulation establishes requirements for the control of emissions from gasoline delivery and storage tanks at existing service stations.
40 CFR 52 Subpart S	Approval and Promulgation of Implementation Plans - Kentucky	This regulation sets forth the applicable State Implementation Plan for Kentucky under section 110 of the Clean Air Act, 42 U.S.C. 7401, and 40 CFR part 51 to meet national ambient air quality standards.

Regulation	Title	Basis
40 CFR 60 Subpart D	Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971	This regulation establishes standards of performance for fossil-fuel-fired steam generators for which construction is commenced after August 17, 1971
40 CFR 60 Subpart Y	Standards of Performance for Coal Preparation Plants	This regulation establishes national emission limitations and work practice standards for coal preparation and processing plants that process more than 200 tons per day
40 CFR 60 Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	This regulation establishes national emission limitations and work practice standards for nonmetallic mineral processing plants.
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	This regulation applies to manufacturers, owner or operators of new stationary compression ignition internal combustion engines.
40 CFR 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This regulation applies to manufacturers, owner or operators of new stationary spark ignition internal combustion engines.
40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units	This regulation establishes national emission limitations and work practice standards for HAP emitted from coal- and oil-fired electric utility steam generating units as defined in 63.10042.
40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	This regulation establishes national emission limitations and operating limitations for HAP emitted from stationary RICE located at major and area sources of HAP emissions.
40 CFR 64	Compliance Assurance Monitoring for Major Stationary Sources	40 CFR 64 establishes compliance assurance monitoring requirements for each unit that has emissions greater than major source threshold and control devices are required to achieve compliance with standards.
40 CFR 68 Subpart G	Risk Management Plan	This Part sets forth the list of regulated substances and thresholds and the requirements for owners or operators of stationary sources concerning the prevention of accidental releases.
40 CFR 72	Permits Regulation	40 CFR 72 through 78 contain regulations for Acid Rain Program, including permits, allowance system, CEM, excess emissions, and appeal procedures.
40 CFR 73	Sulfur Dioxide Allowance System	
40 CFR 75	Continuous Emission Monitoring	

Regulation	Title	Basis
40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program	
40 CFR 77	Excess Emissions	
40 CFR 78	Appeals Procedures for Acid Rain Program	
40 CFR 97 Subpart AAAAA	CSAPR NO _x Annual Trading Program	This regulation sets forth the general, designated representative, allowance, and monitoring provisions for the CSAPR NO _x Annual Trading Program.
40 CFR 97 Subpart CCCCC	CSAPR SO ₂ Group 1 Trading Program	This regulation sets forth the general, designated representative, allowance, and monitoring provisions for the CSAPR SO ₂ Group 1 Trading Program.
40 CFR 97 Subpart EEEEE	CSAPR NO _x Ozone Season Group 2 Trading Program	This subpart sets forth the general, designated representative, allowance, and monitoring provisions for the CSAPR NO _x Ozone Season Group 2 Trading Program.

b. Plantwide

LG&E Mill Creek is a Title V major source for NO_x, CO, SO₂, VOC, PM₁₀, Total HAP, and Single HAP. Regulation 2.16 - *Title V Operating Permits* establishes requirements for major sources. LG&E Mill Creek is one of the 28 source categories which have 100 tpy major thresholds. Based on the plantwide PTE evaluation, LG&E is a PSD major source for NO_x, CO, SO₂, VOC, Particulate matter. LG&E Mill Creek is also a GHG major source.

LG&E Mill Creek has requested on October 20, 2016 SO₂ emission limits for emission units U1, U2, U3, and U4 based on a 30 day rolling average to demonstrate attainment of the 1-hour SO₂ NAAQS.

Regulations 5.00 5.01, 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. LG&E Mill Creek submitted their TAC Environmental Acceptability Demonstration to the District on December 28, 2006, March 25, 2008, April 9, 2010, April 2, 2012, May 13, 2014, and January 21, 2016. Compliance with the STAR EA Goals was demonstrated in the source's EA Demonstrations. SCREEN3 air dispersion modeling was performed for each emission unit that has non-de minimis TAC emissions. The carcinogen risk and non-carcinogen risk values, calculated using the District approved PTE for each unit and the SCREEN model results from the source's EA Demonstration, are comply with the STAR EA goals required in Regulation 5.21.

Plant-wide Sum	All existing & new		All new P/PE	
Industrial Total R _C	4.16	< 75	0.61	< 38
Non-Ind. Total R _C	4.16	< 7.5	0.61	< 3.8
Industrial Max. R _{NC}	0.16	< 3.0		
Non-Ind. Max. R _{NC}	0.16	< 1.0		

TAC	R _{NC} Total		U1		U2		U3		U4		U8		U9		U22	
	Ind./Non-Ind.		Ind./Non-Ind.		Ind./Non-Ind.		Ind./Non-Ind.		Ind./Non-Ind.		Ind./Non-Ind.		Ind./Non-Ind.		Ind./Non-Ind.	
	R _{NC}	R _{NC}	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}
Total R_C/ Max. R_{NC}	0.16	0.16	0.65		0.65		1.09		1.07		0.58		0.10		0.03	
Ar & compounds	0.03	0.03	0.29	0.00	0.29	0.00	0.48	0.01	0.48	0.01	0.56	0.01	0.10	0.002	0.02	0.00
Cd & compounds	0.00	0.00	0.02	0.00	0.02	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr IV & compounds	0.02	0.02	0.28	0.00	0.28	0.00	0.48	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr III & compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Formaldehyde	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ni & compounds	0.03	0.03	0.02	0.01	0.02	0.01	0.03	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Co & compounds	0.01	0.01	0.03	0.00	0.03	0.00	0.06	0.00	0.06	0.00	0.03	0.001	0.00	0.00	0.00	0.00
Hydrofluoric acid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pb & compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mn & compounds	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfuric acid	0.16	0.16	0.00	0.03	0.00	0.03	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00

Regulation 2.16, section 4.1.9.1 and 4.1.9.2 requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

Regulation 2.16, section 4.3.5, requires stationary sources for which a Title V is issued shall submit an annual compliance certification by April 15 of the following calendar year. In addition, as required by Regulation 2.16, section 4.1.9.3, the source shall submit compliance reports at least every six months to show compliance with the permit. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.16, section 3.5.11.

c. **Emission Unit U1 – Electric Generating Unit (EGU) – Unit 1**

EP	Description	Applicable Regulations
E1	One (1) tangentially fired boiler, rated capacity 3,085 MMBtu/hr, make Combustion Engineering, using	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23,

	pulverized coal as a primary fuel and natural gas as secondary fuel. (1970)	6.02, 6.07, 6.42, 6.47, 40 CFR 63 UUUUU, 40 CFR 64, 40 CFR72-78
E2	Four (4) coal silos, make Fisher- Klosterman. (1970) Four (4) coal mills, make Combustion Engineering Raymond Bowl Mills, capacity 43 ton/hr each. (1972)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09

i. Standards/Operating Limits

1) BART

(a) On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth’s May 28, 2010 submittal.

2) HAP

(a) 40 CFR 63.9990 and 63.9991 establishes emission limits, work practice standards, and operating limits for existing EGUs.

3) NO_x

(a) Acid Rain Permit 176-97-AR (R5) is attached and considered part of the Title V Operating Permit. Regulation 6.47, section 3.5 references 40 CFR Part 76. The Acid Rain Permit establishes the alternative contemporaneous emissions limitations on an annual average basis for this unit.

(b) The NO_x RACT Plan establishes NO_x emission standards on a rolling 30-day average basis for this unit as required by Regulation 6.42.

(c) The source is required to install and operate a NO_x CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, NO_x RACT Plan, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

4) Opacity

(a) Regulation 6.07, section 3.2 and 3.3 establishes opacity standards for existing boilers.

- (b) Regulation 6.09, section 3.1 establishes opacity standards for existing coal silos and coal mills.

5) **PM**

- (a) In accordance with Regulation 6.07, section 3.1, Table 1, PM emission standard based on a three hour rolling average for unit U1 is 0.11 lb/MMBtu.

- (b) In accordance with Regulation 6.09, Table 1, PM standards for the coal silos (E2a) is:

$$E = 55.0(1500)^{0.11} - 40 = 82.95 \text{ lb/hr}$$

For each coal mill (E2b):

$$E = 55.0(43)^{0.11} - 40 = 43.2 \text{ lb/hr}$$

- (c) For the coal silos and coal mills (E2), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded.

- (d) According to the letter from EPA dated February 28, 2007, the source is allowed to utilize PM CEMS to replace COMS for each boiler. The source is required to install, maintain, calibrate, and operate PM CEMS for each boiler according the conditions as specified in EPA's letter.

6) **SO₂**

- (a) Regulation 6.07, section 4.1 establishes the three hour rolling average SO₂ standard for this unit.

- (b) In accordance with Acid Rain Permit 176-97-AR (R5), Regulation 6.47, section 3.2 references 40 CFR 73 which has the annual SO₂ emission allowances for each boiler at this source.

- (c) The source is required to install and operate a SO₂ CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

7) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.

- (b) Boiler (E1) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled PTE is used as limit. TAC emissions for the coal silos (E2) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs.

ii. **Monitoring and Recordkeeping**

1) **HAP**

- (a) 40 CFR 63 Subpart UUUUU establishes monitoring and record keeping requirements for existing EGUs.
- (b) According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore, the compliance date for the EGUs at this plant is April 16, 2016.

2) **NO_x**

- (a) NO_x RACT Plan establishes monitoring and record keeping requirements for NO_x emissions.
- (b) Acid Rain Permit, No.176-97-AR (R5) establishes monitoring and record keeping requirements for NO_x compliance.

3) **Opacity**

- (a) EPA's letter February 28, 2007 establishes monitoring and record keeping requirements for opacity.

4) **PM**

- (a) On 3/20/2020, LG&E submitted a revised CAM Plan in which PM CEMS is used to demonstrate compliance or provide an indication of continuous

PM control.

5) **SO₂**

- (a) Regulation 6.02, section 6.1.2 and 40 CFR 75.50(c) establishes record keeping requirements for SO₂.
- (b) On 3/20/2020, LG&E submitted a revised CAM Plan in which SO₂ CEMS is used for compliance demonstration.

iii. **Reporting**

1) **HAP**

- (a) 40 CFR 63.10030 and 63.10031 establishes reporting requirements for existing EGUs.

2) **NO_x**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

3) **Opacity**

- (a) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

4) **PM**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.

5) **SO₂**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

iv. **Testing**

1) **PM/ SO₂/ H₂SO₄/ Hg**

- (a) LG&E will conduct stack tests to obtain the actual emission factors and control efficiencies for new control devices per Regulation 2.16, section 4.1.9.

d. **Emission Unit U2 – Electric Generating Unit (EGU) – Unit 2**

EP	Description	Applicable Regulations
E3	One (1) tangentially fired boiler, rated capacity 3,085 MMBtu/hr, make Combustion Engineering, using pulverized coal as a primary fuel and natural gas as secondary fuel. (1970)	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.42, 6.47, 40 CFR 63 UUUUU, 40 CFR 64, 40 CFR72-78
E4	Four (4) coal silos, make American Air Filter. (1970) Four (4) coal mills, make Combustion Engineering Raymond Bowl Mills, capacity 43 ton/hr each. (1974)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09

i. **Standards/Operating Limits**

1) **BART**

- (a) On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth’s May 28, 2010 submittal.

2) **HAP**

- (a) 40 CFR 63.9990 and 63.9991 establishes emission limits, work practice standards, and operating limits for existing EGUs.

3) **NO_x**

- (a) Acid Rain Permit 176-97-AR (R5) is attached and considered part of the Title V Operating Permit. Regulation 6.47, section 3.5 references 40 CFR Part 76. The Acid Rain Permit establishes the alternative contemporaneous emissions limitations on an annual average basis for this unit.

- (b) The NO_x RACT Plan establishes NO_x emission standards on a rolling 30-day average basis for this unit as required by Regulation 6.42.
 - (c) The source is required to install and operate a NO_x CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, NO_x RACT Plan, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).
- 4) **Opacity**
- (a) Regulation 6.07, section 3.2 and 3.3 establishes opacity standards for existing boilers.
 - (b) Regulation 6.09, section 3.1 establishes opacity standards for existing coal silos and coal mills.
- 5) **PM**
- (a) In accordance with Regulation 6.07, section 3.1, Table 1, PM emission standard based on a three hour rolling average for unit U2 is 0.11 lb/MMBtu
 - (b) In accordance with Regulation 6.09, Table 1, PM standards for the coal silos (E4a) is:
$$E = 55.0(1500)^{0.11} - 40 = 82.95 \text{ lb/hr}$$
For each coal mill (E4b):
$$E = 55.0(43)^{0.11} - 40 = 43.2 \text{ lb/hr}$$
 - (c) For the coal silos and coal mills (E4), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded.
 - (d) According to the letter from EPA dated February 28, 2007, the source is allowed to utilize PM CEMS to replace COMS for each boiler. The source is required to install, maintain, calibrate, and operate PM CEMS for each boiler according the conditions as specified in EPA's letter.
- 6) **SO₂**
- (a) Regulation 6.07, section 4.1 establishes the three hour rolling average SO₂ standard for this unit.
 - (b) In accordance with Acid Rain Permit 176-97-AR

(R5), Regulation 6.47, section 3.2 references 40 CFR 73 which has the annual SO₂ emission allowances for each boiler at this source.

- (c) The source is required to install and operate a SO₂ CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

7) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) Boiler (E3) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled PTE is used as limit. TAC emissions for the coal silos (E4) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs.

ii. **Monitoring and Recordkeeping**

1) **HAP**

- (a) 40 CFR 63 Subpart UUUUU establishes monitoring and record keeping requirements for existing EGUs.
- (b) According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore, the compliance date for the EGUs at this plant is April 16, 2016.

2) **NO_x**

- (a) NO_x RACT Plan establishes monitoring and record keeping requirements for NO_x emissions.

- (b) Acid Rain Permit, No.176-97-AR (R5) establishes monitoring and record keeping requirements for NO_x compliance.

3) **Opacity**

- (a) EPA's letter February 28, 2007 establishes monitoring and record keeping requirements for opacity.

4) **PM**

- (a) On 3/20/2020, LG&E submitted a revised CAM Plan in which PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

5) **SO₂**

- (a) Regulation 6.02, section 6.1.2 and 40 CFR 75.50(c) establishes record keeping requirements for SO₂.
- (b) On 3/20/2020, LG&E submitted a revised CAM Plan in which SO₂ CEMS is used for compliance demonstration.

iii. **Reporting**

1) **HAP**

- (a) 40 CFR 63.10030 and 63.10031 establishes reporting requirements for existing EGUs.

2) **NO_x**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

3) **Opacity**

- (a) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

4) **PM**

(a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.

5) **SO₂**

(a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.

(b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

iv. **Testing**

1) **PM/ SO₂/ H₂SO₄/ Hg**

(a) LG&E will conduct stack tests to obtain the actual emission factors and control efficiencies for new control devices per Regulation 2.16, section 4.1.9.

e. **Emission Unit U3 – Electric Generating Unit (EGU) – Unit 3**

EP	Description	Applicable Regulations
E5	One (1) dry bottom, wall-fired boiler, rated capacity 4,204 MMBtu/hr, make Babcock & Wilcox, using pulverized coal as a primary fuel and natural gas as secondary fuel. (1973)	5.00, 5.01, 5.02, 5.14, 5.15, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.42, 6.47, 40 CFR 63 UUUUU, 40 CFR 64, 40CFR68-G, 40 CFR72-78
E6	Four (4) coal silos, make American Air Filter. (1973) Four (4) coal mills, make Babcock & Wilcox, capacity 57.5 ton/hr each. (1978)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09, 7.08

i. **Standards/Operating Limits**

1) **112(r) Regulated Substances**

(a) The ammonia storage tanks used for this unit are subject to 40 CFR Part 68 Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount. Therefore, the source is required to develop and

implement a Risk Management Plan pursuant to 40 CFR 68, Subpart G and Regulation 5.15.

2) **BART**

- (a) On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth's May 28, 2010 submittal.

3) **HAP**

- (a) 40 CFR 63.9990 and 63.9991 establishes emission limits, work practice standards, and operating limits for existing EGUs.

4) **NO_x**

- (a) Acid Rain Permit 176-97-AR (R5) is attached and considered part of the Title V Operating Permit. Regulation 6.47, section 3.5 references 40 CFR Part 76. The Acid Rain Permit establishes the alternative contemporaneous emissions limitations on an annual average basis for this unit.
- (b) The NO_x RACT Plan establishes NO_x emission standards on a rolling 30-day average basis for this unit as required by Regulation 6.42.
- (c) The source is required to install and operate a NO_x CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, NO_x RACT Plan, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

5) **Opacity**

- (a) Regulation 6.07, section 3.2 and 3.3 establishes opacity standards for existing boilers.
- (b) Regulation 6.09, section 3.1 establishes opacity standards for existing coal silos and coal mills.

6) **PM**

- (a) In accordance with Regulation 7.06, section 4.1 and

40 CFR 60.42(a)(1), PM emission standard based on a three hour rolling average for units U3 is 0.10 lb/MMBtu.

- (b) In accordance with Regulation 6.09, Table 1, PM standards for the coal silos (E6a) is:

$$E = 55.0(1500)^{0.11} - 40 = 82.95 \text{ lb/hr}$$

- (c) In accordance with Regulation 7.08, Table 1, PM standards for the coal mills (E6b) is:

$$E = 17.31(58)^{0.16} = 33.1 \text{ lb/hr}$$

- (d) For the coal silos and coal mills (E6), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded.

- (e) According to the letter from EPA dated February 28, 2007, the source is allowed to utilize PM CEMS to replace COMS for each boiler. The source is required to install, maintain, calibrate, and operate PM CEMS for each boiler according the conditions as specified in EPA's letter.

7) **SO₂**

- (a) Regulation 6.07, section 4.1 establishes the three hour rolling average SO₂ standard for this unit.

- (b) In accordance with Acid Rain Permit 176-97-AR (R5), Regulation 6.47, section 3.2 references 40 CFR 73 which has the annual SO₂ emission allowances for each boiler at this source.

- (c) The source is required to install and operate a SO₂ CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

8) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.

- (b) Boiler (E5) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the

controlled PTE for the TAC is less than de minimis level, De Minimis is listed as the basis of the limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as the basis of the limit. TAC emissions for the coal silos (E6) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs.

ii. **Monitoring and Recordkeeping**

1) **HAP**

- (a) 40 CFR 63 Subpart UUUUU establishes monitoring and record keeping requirements for existing EGUs.
- (b) According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore, the compliance date for the EGUs at this plant is April 16, 2016.

2) **NO_x**

- (a) NO_x RACT Plan establishes monitoring and record keeping requirements for NO_x emissions.
- (b) Acid Rain Permit, No.176-97-AR (R5) establishes monitoring and record keeping requirements for NO_x compliance.
- (c) On 3/20/2020, LG&E submitted a revised CAM Plan in which NO_x CEMS is used for compliance demonstration.

3) **Opacity**

- (a) EPA's letter February 28, 2007 establishes monitoring and record keeping requirements for opacity.

4) **PM**

- (a) On 3/20/2020, LG&E submitted a revised CAM

Plan in which PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

5) **SO₂**

- (a) Regulation 6.02, section 6.1.2 and 40 CFR 75.50(c) establishes record keeping requirements for SO₂.
- (b) On 3/20/2020, LG&E submitted a revised CAM Plan in which SO₂ CEMS is used for compliance demonstration.

iii. **Reporting**

1) **HAP**

- (a) 40 CFR 63.10030 and 63.10031 establishes reporting requirements for existing EGUs.

2) **NO_x**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

3) **Opacity**

- (a) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

4) **PM**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.

5) **SO₂**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75

Subpart G establishes reporting requirements for this pollutant.

iv. **Testing**

1) **PM/ SO₂/ H₂SO₄/ Hg**

- (a) LG&E will conduct stack tests to obtain the actual emission factors and control efficiencies for new control devices per Regulation 2.16, section 4.1.9.

f. **Emission Unit U4 – Electric Generating Unit (EGU) – Unit 4**

EP	Description	Applicable Regulations
E7	One (1) dry bottom, wall-fired boiler, rated capacity 5,025 MMBtu/hr, make Babcock & Wilcox, using pulverized coal as a primary fuel and natural gas as secondary fuel. (1975)	5.00, 5.01, 5.02, 5.14, 5.15, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.42, 6.47, 40 CFR 63 UUUUU, 40 CFR 64, 40CFR68-G, 40 CFR72-78
E8	Five (5) coal silos, make American Air Filter. (1975) Five (5) coal mills, make Babcock & Wilcox, capacity 57.5 ton/hr each. (1982)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09, 7.08

i. **Standards/Operating Limits**

1) **112(r) Regulated Substances**

- (a) The ammonia storage tanks used for this unit are subject to 40 CFR Part 68 Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount. Therefore, the source is required to develop and implement a Risk Management Plan pursuant to 40 CFR 68, Subpart G and Regulation 5.15.

2) **BART**

- (a) On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth’s May 28, 2010 submittal.

3) **HAP**

- (a) 40 CFR 63.9990 and 63.9991 establishes emission limits, work practice standards, and operating limits for existing EGUs.

4) **NO_x**

- (a) Acid Rain Permit 176-97-AR (R5) is attached and considered part of the Title V Operating Permit. Regulation 6.47, section 3.5 references 40 CFR Part 76. The Acid Rain Permit establishes the alternative contemporaneous emissions limitations on an annual average basis for this unit.
- (b) The NO_x RACT Plan establishes NO_x emission standards on a rolling 30-day average basis for this unit as required by Regulation 6.42.
- (c) The source is required to install and operate a NO_x CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, NO_x RACT Plan, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

5) **Opacity**

- (a) Regulation 6.07, section 3.2 and 3.3 establishes opacity standards for existing boilers.
- (b) Regulation 6.09, section 3.1 establishes opacity standards for existing coal silos and coal mills.

6) **PM**

- (a) In accordance with Regulation 7.06, section 4.1 and 40 CFR 60.42(a)(1), PM emission standard based on a three hour rolling average for units U4 is 0.10 lb/MMBtu.
- (b) In accordance with Regulation 6.09, Table 1, PM standards for the coal silos (E8a) is:
$$E = 55.0(1500)^{0.11} - 40 = 82.95 \text{ lb/hr}$$
- (c) In accordance with Regulation 7.08, Table 1, PM standards for the coal mills (E8b) is:
$$E = 17.31(58)^{0.16} = 33.1 \text{ lb/hr}$$
- (d) For the coal silos and coal mills (E8), the owner or

operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded.

- (e) According to the letter from EPA dated February 28, 2007, the source is allowed to utilize PM CEMS to replace COMS for each boiler. The source is required to install, maintain, calibrate, and operate PM CEMS for each boiler according the conditions as specified in EPA's letter.

7) **SO₂**

- (a) Regulation 6.07, section 4.1 establishes the three hour rolling average SO₂ standard for this unit.
- (b) In accordance with Acid Rain Permit 176-97-AR (R5), Regulation 6.47, section 3.2 references 40 CFR 73 which has the annual SO₂ emission allowances for each boiler at this source.
- (c) The source is required to install and operate a SO₂ CEMS for each boiler in accordance with Regulation 6.02, section 6.1.3, Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2).

8) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) Boiler (E7) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, De Minimis is listed as the basis of the limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as the basis of the limit. TAC emissions for the coal silos (E8) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs.

ii. **Monitoring and Recordkeeping**

1) **HAP**

- (a) 40 CFR 63 Subpart UUUUU establishes monitoring and record keeping requirements for existing EGUs.
- (b) According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore, the compliance date for the EGUs at this plant is April 16, 2016.

2) **NO_x**

- (a) NO_x RACT Plan establishes monitoring and record keeping requirements for NO_x emissions.
- (b) Acid Rain Permit, No.176-97-AR (R5) establishes monitoring and record keeping requirements for NO_x compliance.
- (c) On 3/20/2020, LG&E submitted a revised CAM Plan in which NO_x CEMS is used for compliance demonstration.

3) **Opacity**

- (a) EPA's letter February 28, 2007 establishes monitoring and record keeping requirements for opacity.

4) **PM**

- (a) On 3/20/2020, LG&E submitted a revised CAM Plan in which PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

5) **SO₂**

- (a) Regulation 6.02, section 6.1.2 and 40 CFR 75.50(c) establishes record keeping requirements for SO₂.
- (b) On 3/20/2020, LG&E submitted a revised CAM Plan in which SO₂ CEMS is used for compliance demonstration.

iii. **Reporting**

1) **HAP**

- (a) 40 CFR 63.10030 and 63.10031 establishes reporting requirements for existing EGUs.

2) **NO_x**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

3) **Opacity**

- (a) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

4) **PM**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.

5) **SO₂**

- (a) Regulation 6.02, section 16.1 requires a written report of excess emissions and the nature and cause of the excess emissions.
- (b) In accordance with Acid Rain Permit, 40 CFR 75 Subpart G establishes reporting requirements for this pollutant.

iv. **Testing**

1) **PM/ SO₂/ H₂SO₄/ Hg**

- (a) LG&E will conduct stack tests to obtain the actual emission factors and control efficiencies for new control devices per Regulation 2.16, section 4.1.9.

g. **Emission Unit U8 – Fly Ash Storage & Handling Unit**

EP	Description	Applicable Regulations
E13	One (1) flyash silo designated as Silo A and one (1) flyash silo designated as Silo B. (1978)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08
E31	Silo A and B dry truck load-out, make DCL. (2000 and 2005)	
E32	Silo A and B railcar load-out. (2005 and 2007)	
E33	Silo A and B wet truck load-out. (1998)	

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM**

- (a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 3.59(P)^{0.62} \quad \text{if } P \leq 30 \text{ tons/hr}$$

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

E13: $E = 17.31(80.5)^{0.16} = 34.9 \text{ lb/hr}$

E31: $E = 17.31(50)^{0.16} = 32.4 \text{ lb/hr}$

E32: $E = 17.31(37)^{0.16} = 30.9 \text{ lb/hr}$

E33: $E = 17.31(150)^{0.16} = 38.6 \text{ lb/hr}$

- (b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled.

3) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) The flyash silo (E13) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In

this case, controlled is used as limit. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs.

h. Emission Unit U9 – Fly Ash Transfer Bins

EP	Description	Applicable Regulations
E16	One (1) flyash transfer bin with a separator for Unit 1 and 2. Total capacity of transfer bin E16, E17, and E18 is 80.5 tph. (1978)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08
E17	One (1) flyash transfer bin with a separator for Unit 3. (1978)	
E18	One (1) flyash transfer bin with a separator for Unit 4. (1978)	

i. Standards/Operating Limits

1) Opacity

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) PM

- (a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

$$E \text{ (total)} = 17.31(80.5)^{0.16} = 34.9 \text{ lb/hr}$$

- (b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled. .

3) TAC

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) This unit has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level,

modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as limit. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs.

i. **Emission Unit U12 – Limestone Processing Operation**

EP	Description	Applicable Regulations
E24	One (1) barge unloading operation with unloading hopper, rated capacity 750 tph. (1999)	7.08 40 CFR 60 Subpart OOO
E25	One (1) storage pile with receiving rate capacity 1,000 tph. (1999)	
E26	One (1) belt conveyor LA, rated capacity 1000 tph. (1999)	
E27	One (1) belt conveyor LB, rated capacity 1000 tph. (1999)	
E28	Three (3) limestone crushers with a total capacity 145 tph. (2001, 2002)	

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.
- (b) 40 CFR 60.672(b) and Table 2 to 40 CFR 60 Subpart OOO establish opacity standard for this unit.

2) **PM**

- (a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

E24: $E = 17.31(750)^{0.16} = 49.9 \text{ lb/hr}$
 E25, 26, 27: $E = 17.31(1000)^{0.16} = 52.3 \text{ lb/hr}$
 E28: $E = 17.31(145)^{0.16} = 38.4 \text{ lb/hr}$
 E28-Unit C: $E = 17.31(45)^{0.16} = 31.8 \text{ lb/hr}$

- (b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in

Regulation 7.08 uncontrolled.

ii. **Testing**

1) **Opacity**

- (a) 40 CFR 60.672(b) establishes opacity testing requirements for this unit.

j. **Emission Unit U14 – Cooling Tower**

EP	Description	Applicable Regulations
E38	One (1) cooling tower for Unit 4 boiler, make Zurn, model 12Z-3300, rated capacity 222,600 gallon water per minute. (1982)	7.08

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.
- (b) Testing for opacity is not required for this unit due to the nature of the cooling tower.

2) **PM**

- (a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

$$E38: E = 17.31(50,540)^{0.16} = 97.9 \text{ lb/hr}$$

- (b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled.

k. **Emission Unit U15 – Haul Road**

EP	Description	Applicable Regulations
E39a	Paved road particulate emissions	1.14
E39b	Unpaved road particulate emissions	

i. **Standards/Operating Limits**

1) **Opacity**

(a) Regulation 1.14, section 2.3 establishes standards for opacity.

2) **PM**

(a) Regulation 1.14, section 2.1 establishes work practice standards to prevent particulate matter from becoming airborne beyond the work site.

l. **Emission Unit U16 – Sorbent Storage Silos**

EP	Description	Applicable Regulations
E40a through E40f	Six (6) sorbent silos for hydrated lime or Trona, make BCSI, model BCSI-14. Each silo has a capacity of 120 tons, loading rate 40 tons/hr, and equipped with a bin vent filter. (2014)	7.08

i. **Standards/Operating Limits**

1) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM**

(a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

Six (6) new sorbent silos combined:

$$P = (6)(40 \text{ tons/hr}) = 240 \text{ tons/hr}$$

$$E = 17.31(240)^{0.16} = 41.6 \text{ lb/hr}$$

Each sorbent silo of U16:

$$\text{PM limit} = (41.6)(1/6) = 6.9 \text{ lb/hr}$$

m. **Emission Unit U17 – PAC Storage Silos**

EP	Description	Applicable Regulations
E41a through E41f	Six (6) PAC silos for PAC injection system, make & model TBD. Each silo has a capacity of 94 tons, loading rate 40 tons/hr, and equipped with a bin vent filter. (2014)	7.08

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM**

- (a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

Four (4) new PAC silos

$$P = (4)(40 \text{ tons/hr}) = 160 \text{ tons/hr}$$

$$E = 17.31(160)^{0.16} = 39.0 \text{ lb/hr}$$

Each PAC silo of U17:

$$\text{PM limit} = (39.0)(1/4) = 9.7 \text{ lbs/hr}$$

n. **Emission Unit U18 – Fly Ash Storage Silos**

EP	Description	Applicable Regulations
E42	One (1) or more flyash silo for PJFF units, make & model TBD, storage capacity 3,620 tons, maximum loading rate 79.5 ton/hr, equipped with bin vent filter. (2013)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM**

- (a) In accordance with Regulation 7.08, Table 1, PM

standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

U18: One (1) new and two (2) existing flyash silos of U8

$$P = (3)(79.5 \text{ tons/hr}) = 238.5 \text{ tons/hr}$$

$$E = 17.31(238.5)^{0.16} = 41.6 \text{ lb/hr}$$

Each flyash silo of U18:

$$\text{PM limit} = (41.6)(1/3) = 13.9 \text{ lbs/hr}$$

3) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) Using 99.5% control efficiency and the TAC contents are based on previous sample analysis, all TACs are below the de minimis threshold levels. However, results of sample analysis vary from each other and the potential emission for Arsenic is close to its de minimis threshold. The source is required to conduct periodically sample analysis and demonstrate that the Arsenic emission is under de minimis level based on the most recent sampling results.

o. **Emission Unit U20 – Gypsum Pelletizing Plant**

EP	Description	Applicable Regulations
E44	One (1) gypsum pelletizing process and one (1) baghouse used as gypsum separator and PM control. Installed 2013	7.08
E45 and E46	Two (2) natural gas-fired heaters used for dispersion dryer and fluid bed dryer respectively, combined heat input rate 42 MMBtu/hr, make Star Combustion. Installed 2013	5.00, 5.01, 5.20, 5.21, 5.22, 5.23,

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20% for the gypsum pelletizing

process (E44).

(b)

2) **PM**

(a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

Maximum capacity of the process is 50 tons/hr. In accordance with Regulation 7.08, Table 1, PM standards for the gypsum pelletizing process (E44) is determined by the following equations:

$$E = 17.31(50)^{0.16} = 32.4 \text{ lbs/hr}$$

3) **TAC**

For heaters (E45 and E46):

(a) Per Regulation 5.21, section 2.7, the TAC emissions from the combustion of natural gas are considered to be “de minimis emissions” for the STAR Program.

ii. **Monitoring and Recordkeeping**

1) **Opacity**

(a) It has been determined that using a natural gas fired heater will inherently meet the 20% opacity standard. Therefore, the company is not required to perform periodic monitoring to demonstrate compliance with the opacity standard when combusting natural gas.

2) **PM**

(a) A one-time PM compliance demonstration for gypsum pelletizing process (E44) has been performed for this equipment and the lb/hr standard cannot be exceeded uncontrolled.

p. **Emission Unit U21 – Coal Handling Facilities**

EP	Description	Applicable Regulations
E47	One (1) coal handling operation including barge unloading (1980), railcar unloading (1971), coal radial stacker (1971), coal belt conveyors (1971), coal crushers (2014), and coal storage pile (1971).	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09, 7.08, 7.02, 40 CFR 60 Subpart Y

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 6.09, section 3.1 and Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM**

- (a) In accordance with Regulation 6.09, Table 1, PM standards for the silos is determined by the following equations:

$$E = 55.0(P)^{0.11} - 40 \quad \text{if } P > 30 \text{ tons/hr}$$

$$E47b: E = 55.0(2400)^{0.11} - 40 = 89.5 \text{ lb/hr}$$

$$E47c: E = 55.0(1500)^{0.11} - 40 = 83.0 \text{ lb/hr}$$

$$E47e: E = 55.0(750)^{0.11} - 40 = 73.9 \text{ lb/hr}$$

$$E47e: E = 55.0(2400)^{0.11} - 40 = 89.5 \text{ lb/hr}$$

$$E47f: E = 55.0(2400)^{0.11} - 40 = 89.5 \text{ lb/hr}$$

- (b) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

$$E47a: E = 17.31(1500)^{0.16} = 55.8 \text{ lb/hr}$$

$$E47d: E = 17.31(900)^{0.16} = 51.4 \text{ lb/hr}$$

- (c) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 6.09 and 7.08 uncontrolled.

3) **Standards of Performance for Coal Preparation and Processing Plants**

40 CFR 60.254 establishes emission standards for coal processing equipment.

4) **TAC**

- (a) Each TAC contained in coal is less than 0.1% by weight. According to Regulation 5.21, section 2.1, emissions of TACs from this coal handling operation are de minimis.

q. **Emission Unit U22 – Landfill**

EP	Description	Applicable Regulations
E48	Landfill emissions including haul roads on landfill area, drop point emissions, and wind erosion emissions.	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 1.14

i. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 1.14, section 2.3 establishes standards for opacity.

2) **PM**

- (a) Regulation 1.14, section 2.1 establishes work practice standards to prevent particulate matter from becoming airborne beyond the work site.

3) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) LG&E submitted a TAC Environmental Acceptability Demonstration for this unit to the District on July 19 and July 31, 2013, in which the source has demonstrated compliance with the EA Goals.

III. Other Requirements

1. Temporary Sources:

The source did not request to operate any temporary facilities.

2. Short Term Activities:

The source did not report any short term activities.

3. Emissions Trading:

The source is not subject to emission trading.

4. Alternative Operating Scenarios:

The source requested operational flexibility for ESPs in order to achieve the designed efficiency of the PJFF baghouse.

5. Compliance History:

Date	Regulation Violated	Settlement
6/9/1993	Reg. 6.07, Section 4 for SO ₂	Board Order 9/15/1993
12/14/1994	Reg. 1.14, Section 2 for fugitive emission	Rescinded 2/6/1996
3/5/1999	Reg. 1.14, Section 2, visible emissions beyond property line	Agreement 4/12/1999
4/13/1999	Reg. 1.14, Section 2, failure to take reasonable precautions to prevent emission	Agreement 6/1/1999
7/26/1999	Reg. 1.14, Section 2, failure to take reasonable precautions to prevent emission	Agreement 10/12/1999
5/8/2000	Reg. 1.09, general prohibition	Agreement 10/12/2000
6/19/2000	Reg. 1.09, general prohibition	Agreement 10/12/2000
12/8/2000	Reg. 1.09, general prohibition	Agreement 4/3/2000
1/31/2001	Reg. 1.09, general prohibition	Agreement 4/18/2001
1/25/2014	Reg. 2.16, Section 02, applicability Reg. 2.16, Section 05, permit issuance, renewal, re-openings, and revisions	Rescinded 7/18/2014
5/31/2015	Reg. 2.16, Section 02, applicability Reg. 2.16, Section 05, permit issuance, renewal, re-openings, and revisions	Board Order 1/20/2016

6. Calculation Methodology or Other Approved Method:

Emissions are calculated by multiplying the throughput (ton, MMCF, gallons, etc) or hours of operation of the equipment by the appropriate emission factor and 1 minus any control device's efficiency. The following emission factors and calculation methodology shall be used unless other methods or emission factors are approved in writing by the District.

Table A1. U1, U2, U3, and U4 Boilers (Coal)

Unit ID	Emission Point	Pollutants	EF Uncontrol	EF Controlled	EF Unit	Calculation Methodologies, Emission Factor Sources
U1	E1, E3, E5, E7: Boiler (coal)	CO	0.5		lb/MMBtu	AP-42, 1.1-3
U2		NOx		CEMS		Use CEMS data
U3		PM-Con	0.02		lb/MMBtu	AP-42 1.1-5

Unit ID	Emission Point	Pollutants	EF Uncontrol	EF Controlled	EF Unit	Calculation Methodologies, Emission Factor Sources	
U4		PM-Fil	CEMS			Use CEMS data	
		PM ₁₀ -Fil	92% PM-Fil			AP-42 1.1-6	
		PM _{2.5} -Fil	53% PM-Fil			AP-42 1.1-6	
		SO ₂	CEMS			Use CEMS data	
		VOC	0.06		lb/MMBtu		AP-42, 1.1-19
		Ammonia (NH ₃)	E1, E3: 0.000565 lb/ton				EPA CHIEF document, 1994
			E5, E7: 0.031 lb/ton				Guaranteed EF by SCR manufacturer
		1,2,4-Trichlorobenzene	1.50		lb/10 ¹² Btu		PISCES MODEL
		1,4-Dichlorobenzene	1.10		lb/10 ¹² Btu		PISCES MODEL
		2,4-Dinitrotoluene	0.20		lb/10 ¹² Btu		PISCES MODEL
		2-Chloroacetophenone	7.00E-06		lb/ton		AP-42, 1.1-14
		Acetaldehyde	3.20		lb/10 ¹² Btu		PISCES MODEL
		Acetophenone	1.20		lb/10 ¹² Btu		PISCES MODEL
		Acrolein	1.90		lb/10 ¹² Btu		PISCES MODEL
		Antimony			4.22E-07	lb/10 ⁶ Btu	Emission limit per MATS
		Arsenic			2.52E-06	lb/10 ⁶ Btu	Emission limit per MATS
		Benzene	3.90		lb/10 ¹² Btu		PISCES MODEL
		Benzyl Chloride	0.28		lb/10 ¹² Btu		PISCES MODEL
		Beryllium			1.18E-07	lb/10 ⁶ Btu	Emission limit per MATS
		Biphenyl	0.16		lb/10 ¹² Btu		PISCES MODEL
		Bis(2-Ethylhexyl)Phthalate	3.60		lb/10 ¹² Btu		PISCES MODEL
		Cadmium			2.20E-07	lb/10 ⁶ Btu	Emission limit per MATS
		Carbon disulfide	1.10		lb/10 ¹² Btu		PISCES MODEL
		Chlorobenzene	0.16		lb/10 ¹² Btu		PISCES MODEL
		Chloroform	0.80		lb/10 ¹² Btu		PISCES MODEL
		Chromium (III)			4.18E-06	lb/10 ⁶ Btu	Emission limit per MATS
		Chromium (VI)			5.70E-07	lb/10 ⁶ Btu	Emission limit per MATS
		Cobalt			5.10E-07	lb/10 ⁶ Btu	Emission limit per MATS
		Copper			5.45	lb/10 ¹² Btu	EPRI
		Cumene	5.30E-06		lb/ton		AP-42, 1.1-14
		Cyanide	2.50E-03		lb/ton		AP-42, 1.1-14
		Dibenzofuran	0.58		lb/10 ¹² Btu		PISCES MODEL
		Dibutyl Phthalate	0.11		lb/10 ¹² Btu		PISCES MODEL
		Dimethyl Phthalate	0.09		lb/10 ¹² Btu		PISCES MODEL
		Dimethyl sulfate	4.80E-05		lb/ton		AP-42, 1.1-14
		Ethylbenzene	0.80		lb/10 ¹² Btu		PISCES MODEL
		Ethyl chloride	0.53		lb/10 ¹² Btu		PISCES MODEL
		Ethylene dibromide	2.60		lb/10 ¹² Btu		PISCES MODEL
		Formaldehyde	2.60		lb/10 ¹² Btu		PISCES MODEL
		Hexane	0.49		lb/10 ¹² Btu		PISCES MODEL
		Hydrochloric acid			5.83E-04	lb/10 ⁶ Btu	Emission limit per MATS
		Hydrogen fluoride			1.80E-04	lb/10 ⁶ Btu	MATS
Isophorone	1.20		lb/10 ¹² Btu		PISCES MODEL		
Lead			2.25E-06	lb/10 ⁶ Btu	Emission limit per MATS		
Manganese			1.01E-05	lb/10 ⁶ Btu	Emission limit per MATS		

Unit ID	Emission Point	Pollutants	EF Uncontrol	EF Controlled	EF Unit	Calculation Methodologies, Emission Factor Sources
		Mercury	CEMS			Use CEMS data
		Methyl bromide	0.89		lb/10 ¹² Btu	PISCES MODEL
		Methyl chloride	1.10		lb/10 ¹² Btu	PISCES MODEL
		Methyl chloroform	0.61		lb/10 ¹² Btu	PISCES MODEL
		Methyl Iodide	2.00		lb/10 ¹² Btu	PISCES MODEL
		Methyl Isobutyl Ketone	2.30		lb/10 ¹² Btu	PISCES MODEL
		Methyl methacrylate	1.10		lb/10 ¹² Btu	PISCES MODEL
		Methyl Tert-Butyl Ether	3.50E-05		lb/ton	AP-42, 1.1-14
		Methylene chloride	2.70		lb/10 ¹² Btu	PISCES MODEL
		Methylhydrazine	1.70E-04		lb/ton	AP-42, 1.1-14
		Naphthalene	0.62		lb/10 ¹² Btu	PISCES MODEL
		Nickel		2.74E-05	lb/10 ⁶ Btu	Emission limit per MATS
		p-Cresol	1.30		lb/10 ¹² Btu	PISCES MODEL
		Phenol	3.30		lb/10 ¹² Btu	PISCES MODEL
		Propionaldehyde	1.90		lb/10 ¹² Btu	PISCES MODEL
		Selenium		9.24E-06	lb/10 ⁶ Btu	Emission limit per MATS
		Styrene	0.70		lb/10 ¹² Btu	PISCES MODEL
		Sulfuric Acid	1% of SO ₂ emissions			AP-42 1.1 Background Document
		Tetrachloroethylene	0.42		lb/10 ¹² Btu	PISCES MODEL
		Toluene	1.70		lb/10 ¹² Btu	PISCES MODEL
		Vinyl Acetate	0.31		lb/10 ¹² Btu	PISCES MODEL
		Vinyl Chloride	0.73		lb/10 ¹² Btu	PISCES MODEL
		Xylene	1.26		lb/10 ¹² Btu	PISCES MODEL

Table A2. U1, U2, U3, and U4 Boilers (Natural Gas)

Unit ID	Emission Point	Pollutants	EF Uncontrol	EF Controlled	EF Unit	Calculation Methodologies, Emission Factor Sources
U1 U2 U3 U4	E1, E3, E5, E7: Boiler (natural gas)	CO	84		lb/MMcf	AP-42, 1.4-1
		NOx	CEMS			Use CEMS data
		PM-Con	0.32		lb/MMcf	2011 NEI, EPA
		PM-Fil	0.20		lb/MMcf	2011 NEI, EPA
		PM ₁₀ -Fil	0.20		lb/MMcf	2011 NEI, EPA
		PM _{2.5} -Fil	0.11		lb/MMcf	2011 NEI, EPA
		SO ₂	CEMS			Use CEMS data
		VOC	5.5		lb/MMcf	AP-42, 1.4-2
		Ammonia (NH ₃)	0.49		lb/MMcf	2011 NEI, EPA
		2-Methylnaphthalene	2.40E-05		lb/MMcf	AP-42, 1.4-3
		3-Methylchloranthrene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		DMBA	1.60E-05		lb/MMcf	AP-42, 1.4-3
		Acenaphthene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Acenaphthylene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Anthracene	2.40E-06		lb/MMcf	AP-42, 1.4-3
		Benz(a)anthracene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Benzene	2.10E-03		lb/MMcf	AP-42, 1.4-3

Unit ID	Emission Point	Pollutants	EF Uncontrol	EF Controlled	EF Unit	Calculation Methodologies, Emission Factor Sources
		Benzo(a)pyrene	1.20E-06		lb/MMcf	AP-42, 1.4-3
		Benzo(b)fluoranthene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Benzo(g,h,i)perylene	1.20E-06		lb/MMcf	AP-42, 1.4-3
		Benzo(k)fluoranthene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Chrysene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Dibenzo(a,h)anthracene	1.20E-06		lb/MMcf	AP-42, 1.4-3
		Dichlorobenzene	1.20E-03		lb/MMcf	AP-42, 1.4-3
		Fluoranthene	3.00E-06		lb/MMcf	AP-42, 1.4-3
		Fluorene	2.80E-06		lb/MMcf	AP-42, 1.4-3
		Formaldehyde	7.50E-02		lb/MMcf	AP-42, 1.4-3
		Hexane	1.80E+00		lb/MMcf	AP-42, 1.4-3
		Indeno(1,2,3-cd)pyrene	1.80E-06		lb/MMcf	AP-42, 1.4-3
		Naphthalene	6.10E-04		lb/MMcf	AP-42, 1.4-3
		Phenanathrene	1.70E-05		lb/MMcf	AP-42, 1.4-3
		Pyrene	5.00E-06		lb/MMcf	AP-42, 1.4-3
		Toluene	3.40E-03		lb/MMcf	AP-42, 1.4-3
		Arsenic	2.00E-04		lb/MMcf	AP-42, 1.4-4
		Beryllium	1.20E-05		lb/MMcf	AP-42, 1.4-4
		Cadmium	1.10E-03		lb/MMcf	AP-42, 1.4-4
		Chromium VI	1.40E-03		lb/MMcf	AP-42, 1.4-4
		Cobalt	8.40E-05		lb/MMcf	AP-42, 1.4-4
		Lead	5.00E-04		lb/MMcf	AP-42, 1.4-2
		Manganese	3.80E-04		lb/MMcf	AP-42, 1.4-4
		Mercury	2.60E-04		lb/MMcf	AP-42, 1.4-4
		Nickel	2.10E-03		lb/MMcf	AP-42, 1.4-4
		Selenium	2.40E-05		lb/MMcf	AP-42, 1.4-4

Table A3. Material Handling PM Emissions

Unit	Emi. Point	Processes Description	Uncontrolled Emission Factors			Collection Efficiency	Control Efficiency	Calculation Methodologies, Emission Factor Sources
			PM EF (lb/ton)	PM10 EF (lb/ton)	PM2.5 EF (lb/ton)			
U1	E2	U1 coal bunker	1.32E-04	6.25E-05	9.46E-06	100%	90%	AP-42, 13.2.4, Eq(1)
U2	E4	U2 coal bunker	1.32E-04	6.25E-05	9.46E-06	100%	90%	AP-42, 13.2.4, Eq(1)
U3	E6	U3 coal bunker	1.32E-04	6.25E-05	9.46E-06	100%	90%	AP-42, 13.2.4, Eq(1)
U4	E8	U4 coal bunker	1.32E-04	6.25E-05	9.46E-06	100%	90%	AP-42, 13.2.4, Eq(1)
U8	E13	Silos A and B	0.3493	0.1224	0.1224	100%	98%	AP-42, 11.12-2
	E31	Dry truck loadout	0.1244	0.0345	0.0345	90%	95%	AP-42, 11.12-3
	E32	Dry railcar loadout	0.1244	0.0345	0.0345	90%	98%	AP-42, 11.12-3
	E33	Wet truck loadout	0.0123	0.0034	0.0034			AP-42, 11.12-3
U9	E16-18	Flyash bins	0.3493	0.1224	0.1224	100%	98%	AP-42, 11.12-2
U12	E24	Barge unloading	0.0202	0.0096	0.0014			AP-42, 13.2.4, Eq(1)

Unit	Emi. Point	Processes Description	Uncontrolled Emission Factors			Collection Efficiency	Control Efficiency	Calculation Methodologies, Emission Factor Sources
			PM EF (lb/ton)	PM10 EF (lb/ton)	PM2.5 EF (lb/ton)			
	E25	Conveyor to pile	0.0202	0.0096	0.0014			AP-42, 13.2.4, Eq(1)
	E26	Hopper to conveyor	0.0202	0.0096	0.0014			AP-42, 13.2.4, Eq(1)
	E27	LA to LB conveyor	0.0202	0.0096	0.0014			AP-42, 13.2.4, Eq(1)
	E28	Limestone grinding	0.0012	0.0005	0.0001			AP-42, 11.19.2-2
U15	E39a	Paved road	0.765	0.153	0.038			AP-42, 13.2.2, Eq. 1a
	E39b	Unpaved road	5.512	1.352	0.135		70%	AP-42, 13.2.2, Eq. 1a
U16	E40	Silos with filters	0.610	0.610	0.610	100%	99%	AP-42, 11.17-4, D
U17	E41	Silos with filters	0.610	0.610	0.610	100%	99%	AP-42, 11.17-4, D
U18	E42	Silos with filters	0.3493	0.1224	0.1224	100%	99%	AP-42, 11.12-2
U20	E44a	Load Hopper	3.38E-04	1.60E-04	2.42E-05			AP-42, 13.2.4, Eq(1)
	E44b	Conveyor-1	2.99E-05	1.41E-05	2.14E-06			AP-42, 13.2.4, Eq(1)
	E44c	Disp Dryer	2.99E-05	1.41E-05	2.14E-06			AP-42, 13.2.4, Eq(1)
	E44d	Pneumatic conveyor	3.38E-04	1.60E-04	2.42E-05			AP-42, 13.2.4, Eq(1)
	E44e	Mixer Load	1.08E-03	5.13E-04	7.77E-05			AP-42, 13.2.4, Eq(1)
	E44f	Rotray airlock	1.08E-03	5.13E-04	7.77E-05			AP-42, 13.2.4, Eq(1)
	E44g	Pin Mixer	1.08E-03	5.13E-04	7.77E-05			AP-42, 13.2.4, Eq(1)
	E44h	Conveyor-3	7.11E-05	3.37E-05	5.10E-06			AP-42, 13.2.4, Eq(1)
	E44i	Pelletizer	7.11E-05	3.37E-05	5.10E-06			AP-42, 13.2.4, Eq(1)
	E44j	Conveyor-4	7.11E-05	3.37E-05	5.10E-06			AP-42, 13.2.4, Eq(1)
	E44k	FB Dryer	7.11E-05	3.37E-05	5.10E-06			AP-42, 13.2.4, Eq(1)
	E44l	Screeener	2.20E-03	7.40E-04	5.00E-05			AP-42, 11.19.2-2
	E44m	Belt conveyor	1.08E-03	5.13E-04	7.77E-05			AP-42, 13.2.4, Eq(1)
	E44n	Hammermill	4.04E-02	3.39E-02	1.21E-02			AP-42, 11.19.2-4
E44o	Limestone Silo with integrated vent filters	0.6100	0.6100	0.6100	100%	98%	AP-42, 11.17-4	
U21	E47a	Barge Unloading	1.49E-03	7.06E-04	1.07E-04			AP-42, 13.2.4, Eq(1)
	E47b	Railcar Unloading	1.49E-03	7.06E-04	1.07E-04			AP-42, 13.2.4, Eq(1)
	E47c	Coal radial stacker	1.49E-03	7.06E-04	1.07E-04			AP-42, 13.2.4, Eq(1)
	E47d	Coal crusher	1.32E-04	6.25E-05	9.46E-06			AP-42, 13.2.4, Eq(1)
	E47e	Coal belt conveyors	1.32E-04	6.25E-05	9.46E-06			AP-42, 13.2.4, Eq(1)
	E47f	Coal pile (dropping)	1.49E-03	7.06E-04	1.07E-04			AP-42, 13.2.4, Eq(1)
U22	E48a	Landfill haul road	5.51E+00	1.35E+00	1.35E-01		70%	AP-42, 13.2.2, Eq(1a)
	E48b	Landfill drop point	1.05E-04	4.96E-05	7.51E-06			AP-42, 13.2.4
	E48c	Landfill wind erosion						AP-42, 13.2.5

Unit	Emi. Point	Processes Description	Uncontrolled Emission Factors			Collection Efficiency	Control Efficiency	Calculation Methodologies, Emission Factor Sources
			PM EF (lb/ton)	PM10 EF (lb/ton)	PM2.5 EF (lb/ton)			
IAS	IE15	Gypsum handling (stackers, conveyors, loading, unloading)	1.36E-03	6.50E-04	1.00E-04			AP-42, 13.2.4, Eq(1). Emission factors for each equipment.
	IE17-18	Ash storage silos with integrated vent filters	3.49E-01	1.22E-01	1.22E-01	100%	98%	AP-42, 11.12-2, for each
	IE19-22	Pub mill mixers	1.21E-01	4.02E-02	4.00E-03			AP-42, 11.12-2, for each
	IE23	Lime silos with integrated vent filters	6.10E-01	6.10E-01	6.10E-01	100%	98%	AP-42, 11.17-4, for each
		Unloading to pile	1.36E-03	6.45E-04	9.77E-05			AP-42, 11.12-2
		Front-end loader	1.36E-03	6.45E-04	9.77E-05			AP-42, 11.12-2

Table A4. Diesel Engines (E36, E37, IE9, IE10)

Pollutant	CAS No.	≤ 600 HP (IE9, IE10, IE24)		> 600 HP (E36, E37)	
		EF (lb/MMBtu)	Source	EF (lb/MMBtu)	Source
NOx		4.41	AP-42, 3.3-1	3.20	AP-42, 3.4-1
CO		0.95	AP-42, 3.3-1	0.85	AP-42, 3.4-1
SOx		1.01S1	AP-42, 3.3-1, S1- % sulfur in fuel	1.01S1	AP-42, 3.3-1, S1- % sulfur in fuel
PM10		0.31	AP-42, 3.3-1	0.100	AP-42, 3.4-1
VOC		0.36	AP-42, 3.3-1	0.057	AP-42, 3.4-2
Benzene	71-43-2	9.33E-04	AP-42, 3.3-2	7.76E-04	AP-42, 3.4-3
Toluene	108-88-3	4.09E-04	AP-42, 3.3-2	2.81E-04	AP-42, 3.4-3
xylenes	1330-20-7	2.85E-04	AP-42, 3.3-2	1.93E-04	AP-42, 3.4-3
1,3-Butadiene	106-99-0	3.91E-05	AP-42, 3.3-2	N/A	N/A
Formaldehyde	50-00-0	1.18E-03	AP-42, 3.3-2	7.89E-05	AP-42, 3.4-3
Acetaldehyde	75-07-0	7.67E-04	AP-42, 3.3-2	2.52E-05	AP-42, 3.4-3
Acrolein	107-02-8	9.25E-05	AP-42, 3.3-2	7.88E-06	AP-42, 3.4-3
Naphthalene	91-20-3	8.48E-05	AP-42, 3.3-2	1.30E-04	AP-42, 3.4-4
Acenaphthylene (POM, 208-96-8)		5.06E-06	AP-42, 3.3-2	9.23E-06	AP-42, 3.4-4
Acenaphthene (POM, 83-32-9)		1.42E-06	AP-42, 3.3-2	4.68E-06	AP-42, 3.4-4
Fluorene (POM, 86-73-7)		2.92E-05	AP-42, 3.3-2	1.28E-05	AP-42, 3.4-4
Phenanthrene (POM, 85-01-8)		2.94E-05	AP-42, 3.3-2	4.08E-05	AP-42, 3.4-4
Anthracene (POM, 120-12-7)		1.87E-06	AP-42, 3.3-2	1.23E-06	AP-42, 3.4-4
Fluoranthene (POM, 206-44-0)		7.61E-06	AP-42, 3.3-2	4.03E-06	AP-42, 3.4-4
Pyrene (POM, 129-00-0)		4.78E-06	AP-42, 3.3-2	3.71E-06	AP-42, 3.4-4
Benzo(a)anthracene	56-55-3	1.68E-06	AP-42, 3.3-2	6.22E-07	AP-42, 3.4-4
Chrysene	218-01-9	3.53E-07	AP-42, 3.3-2	1.53E-06	AP-42, 3.4-4
Benzo(b)fluoranthene	205-99-2	9.91E-08	AP-42, 3.3-2	1.11E-06	AP-42, 3.4-4

Pollutant	CAS No.	≤ 600 HP (IE9, IE10, IE24)		> 600 HP (E36, E37)	
		EF (lb/MMBtu)	Source	EF (lb/MMBtu)	Source
Benzo(k)fluoranthene	207-08-9	1.55E-07	AP-42, 3.3-2	2.18E-07	AP-42, 3.4-4
Benzo(a)pyrene	50-32-8	1.88E-07	AP-42, 3.3-2	2.57E-07	AP-42, 3.4-4
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	AP-42, 3.3-2	4.14E-07	AP-42, 3.4-4
Dibenz(a,h)anthracene	53-70-3	5.83E-07	AP-42, 3.3-2	3.46E-07	AP-42, 3.4-4
Benzo(g,h,i)perylene (POM, 191-24-2)		4.89E-07	AP-42, 3.3-2	5.56E-07	AP-42, 3.4-4

Table A4. Natural Gas Engines (IE24)

Pollutant		Emission Factor (lb/MMBtu)	EF Source
NO _x		2.21	AP-42, 3.2-2
CO		3.72	AP-42, 3.2-2
PM		0.01941	AP-42, 3.2-2
PM ₁₀		0.01941	AP-42, 3.2-2
SO ₂		0.000588	AP-42, 3.2-2
VOC		0.0296	AP-42, 3.2-2
CO ₂		110	AP-42, 3.2-2
Methane (CH ₄)		0.23	AP-42, 3.2-2
1,1,2,2-Tetrachloroethane	79-34-5	2.53E-05	AP-42, 3.2-2
1,1,2-Trichloroethane	79-00-5	1.53E-05	AP-42, 3.2-2
1,1-Dichloroethane	75-34-3	1.13E-05	AP-42, 3.2-2
1,2-Dichloroethane	107-06-2	1.13E-05	AP-42, 3.2-2
1,2-Dichloropropane	78-87-5	1.30E-05	AP-42, 3.2-2
1,3-Butadiene	106-99-0	6.63E-04	AP-42, 3.2-2
1,3-Dichloropropene	542-75-6	1.27E-05	AP-42, 3.2-2
2,2,4-Trimethylpentane	540-84-1	2.50E-04	AP-42, 3.2-2
Acetaldehyde	75-07-0	2.79E-03	AP-42, 3.2-2
Acrolein	107-02-8	2.63E-03	AP-42, 3.2-2
Benzene	71-43-2	1.58E-03	AP-42, 3.2-2
Butyr/isobutyraldehyde	78-84-2	4.86E-05	AP-42, 3.2-2
Carbon Tetrachloride	56-23-5	1.77E-05	AP-42, 3.2-2
Chlorobenzene	108-90-7	1.29E-05	AP-42, 3.2-2
Chloroform	67-66-3	1.37E-05	AP-42, 3.2-2
Ethane	74-84-0	7.04E-02	AP-42, 3.2-2
Ethylbenzene	100-41-4	2.48E-05	AP-42, 3.2-2
Ethylene Dibromide	106-93-4	2.13E-05	AP-42, 3.2-2
Formaldehyde	50-00-0	2.05E-02	AP-42, 3.2-2
Methanol	67-56-1	3.06E-03	AP-42, 3.2-2

Pollutant		Emission Factor (lb/MMBtu)	EF Source
Methylene Chloride	75-09-2	4.12E-05	AP-42, 3.2-2
Naphthalene	91-20-3	9.71E-05	AP-42, 3.2-2
Styrene	100-42-5	1.19E-05	AP-42, 3.2-2
Toluene	108-88-3	5.58E-04	AP-42, 3.2-2
Vinyl Chloride	75-01-4	7.18E-06	AP-42, 3.2-2
Xylene	1330-20-7	1.95E-04	AP-42, 3.2-2

Table A5. Cooling Towers

Unit	Emission Point	Process Description	% drift	TSD (ppm)	Calculation Methodologies, Emission Factor Sources
U14	E38	Cooling tower for U4	0.00005	Most recent sampling data	AP-42, 13.4
IA	IE14	Cooling tower for U2	0.00002		
IA	IE14	Cooling tower for U3	0.00002		

Table A6. Natural Gas Heaters (E45, E46, and IA NG space heaters and water heaters)

Pollutant	CAS No.	EF (lb/mmcf)	EF Source
NH3		0.49	Roy Huntley
CO		84.00	AP-42, 1.4-1
NOx		100.00	AP-42, 1.4-1
PM (TSP)		0.52	Roy Huntley
PM-Con		0.32	Roy Huntley
PM10-Fil		0.20	Roy Huntley
PM2.5-Fil		0.11	Roy Huntley
SO2		0.60	AP-42, 1.4-2
VOC		5.50	AP-42, 1.4-2
1,4-Dichlorobenzene	106-46-7	1.20E-03	AP-42, 1.4-3
2-Methylnaphthalene	91-57-6	2.40E-05	AP-42, 1.4-3
3-Methylchloranthrene	56-49-5	1.80E-06	AP-42, 1.4-3
7,12-Dimethylbenz(a)Anthracene	57-97-6	1.60E-05	AP-42, 1.4-3
Acenaphthene	83-32-9	1.80E-06	AP-42, 1.4-3
Acenaphthylene	203-96-8	1.80E-06	AP-42, 1.4-3
Anthracene	120-12-7	2.40E-06	AP-42, 1.4-3
Arsenic	As	2.00E-04	AP-42, 1.4-4
Benz(a)anthracene	56-55-3	1.80E-06	AP-42, 1.4-3
Benzene	71-43-2	2.10E-03	AP-42, 1.4-3
Benzo(a)pyrene	50-32-8	1.20E-06	AP-42, 1.4-3

Pollutant	CAS No.	EF (lb/mmcf)	EF Source
Benzo(b)fluoranthene	205-99-2	1.80E-06	AP-42, 1.4-3
Benzo(g,h,i)perylene	191-24-2	1.20E-06	AP-42, 1.4-3
Benzo(k)fluoranthene	205-82-3	1.80E-06	AP-42, 1.4-3
Beryllium	Be	1.20E-05	AP-42, 1.4-4
Cadmium	Cd	1.10E-03	AP-42, 1.4-4
Chromium VI		1.40E-03	AP-42, 1.4-4
Chrysene	218-01-9	1.80E-06	AP-42, 1.4-3
Cobalt	Co	8.40E-05	AP-42, 1.4-4
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	AP-42, 1.4-3
Fluoranthene	206-44-0	3.00E-06	AP-42, 1.4-3
Fluorene	86-73-7	2.80E-06	AP-42, 1.4-3
Formaldehyde	50-00-0	7.50E-02	AP-42, 1.4-3
Hexane	110-54-3	1.80E+00	AP-42, 1.4-3
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	AP-42, 1.4-3
Manganese	Mn	3.80E-04	AP-42, 1.4-4
Mercury	Hg	2.60E-04	AP-42, 1.4-4
Naphthalene	91-20-3	6.10E-04	AP-42, 1.4-3
Nickel	Ni	2.10E-03	AP-42, 1.4-4
Phenanthrene	85-01-8	1.70E-05	AP-42, 1.4-3
Pyrene	129-00-0	5.00E-06	AP-42, 1.4-3
Selenium	Se	2.40E-05	AP-42, 1.4-4
Toluene	108-88-3	3.40E-03	AP-42, 1.4-3

Table A7. Parts Washers and Storage Tanks

Unit	Emission Point	Process Description	Calculation Methodologies, Emission Factor Sources
IA1	E20	Gasoline storage tank	EPA TANK4.0 Program, based on fluid properties and fuel usage
IA2	IE1-IE8	Parts washers	Mass balance method based on cleaner usage
IA	N/A	Fuel oil, lubricating oil, and kerosene storage tanks	EPA TANK4.0 Program, based on fluid properties and fuel usage

7. Insignificant Activities

Equipment	Qty.	PTE (tpy)	Regulation Basis
Fuel or Lubricating oils storage tanks with vapor pressure <10mm Hg @ 20 deg C (See unit IA-OT)	17	0.005 VOC	Regulation 1.02, Appendix A, 3.9.2
1,000 gallon storage tank for #1 fuel oil with annual turnover < 2X the capacity (See unit IA-OT)	1	0.001 VOC	Regulation 1.02, Appendix A, 3.25
Minor natural gas combustion sources <10 MMBtu/hr (direct heat exchangers)	24	0.79 NO _x	Regulation 2.16, section 1.23
Emergency relief vents for boiler steam supply	24	0	Regulation 1.02, Appendix A, 3.10
Lab exhaust systems	3	0.001 VOC	Regulation 1.02, Appendix A, 3.11
Portable kerosene storage tanks with capacity less than 500 gallons (See unit IA-OT)	1	3.5e-5 VOC	Regulation 1.02, Appendix A, 3.23
Ash pond with wet storage	1	0	Regulation 2.16, section 1.23
Cooling Towers for Unit 2 and Unit 3 (See unit IA-OT)	2	3.35 PM ₁₀	Regulation 2.16, section 1.23
Stack piles (coal, limestone, gypsum piles)	3	1.66 PM ₁₀	Regulation 2.16, section 1.23
Turbine oil reservoir vapor extractor	4	0	Regulation 2.16, section 1.23
Hydrogen seal oil tank vent	4	0	Regulation 2.16, section 1.23
Gypsum handling equipment (See unit IA-OT)	1	4.69 PM ₁₀	Regulation 2.16, section 1.23
Portable gypsum dewatering systems (See unit IA-OT)	2	1.27 PM ₁₀	Regulation 2.16, section 1.23
Gasoline storage tank, 3,000 gallons (previous U10, see unit IA1)	1	1.87 VOC	Regulation 2.16, section 1.23
Non-halogenated cold solvent parts washers with secondary reservoir (previous U11, see unit IA2)	8	0.33 VOC	Regulation 2.16, section 1.23
Emergency generators, 800 HP each (previous U13, see unit IA3)	2	4.93 NO _x	Regulation 2.16, section 1.23
Fire pumps, 157 HP and 183 HP (See unit IA4)	2	1.42 NO _x	Regulation 2.16, section 1.23
Emergency vent for U1 and U2 boilers	1	0.7 NO _x	Regulation 2.16, section 1.23
Bottom/flyash silos (See unit IA-OT)	2	2.34 PM ₁₀	Regulation 2.16, section 1.23

Equipment	Qty.	PTE (tpy)	Regulation Basis
Ash pug mill mixers (See unit IA-OT)	4	4.7 PM ₁₀	Regulation 2.16, section 1.23
Process water system (See unit IA-OT)	1	1.69 PM ₁₀	Regulation 2.16, section 1.23
Emergency generator, natural gas fired, 105 HP (See unit IA3)	1	0.75 CO	Regulation 2.16, section 1.23

1. Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16, section 3.5.4.1.4.
2. Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements as required by Regulation 2.16, section 4.1.9.4.
3. The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
4. Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
5. The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year pursuant to Regulation 2.16, section 4.3.5.3.6.
6. The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.
7. The District has determined pursuant to Regulation 2.16, section 4.1.9.4 that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

8. Basis of Regulation Applicability for IA units

a. Emission Unit IA1 – Gasoline Storage Tank

EP	Description	Applicable Regulations
E20	One (1) Stage I gasoline refueling station, including one 3000 gallon unleaded gasoline storage tank.	7.15

i. Standards/Operating Limits

1) VOC

- (a) Regulation 7.15 establishes work practice standards for the gasoline storage tank.
- (b) The storage tanks under this unit meet the definition

of insignificant activities per Regulation 2.16, section 1.23. However, Regulation 7.15 applies to gasoline storage vessels. These tanks shall meet the requirements under Regulation 7.15.

b. **Emission Unit IA2 – Parts Washers**

EP	Description	Applicable Regulations
IE1 to IE8	Eight (8) parts washers each equipped with a secondary reservoir.	6.18

i. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 6.18 establishes standards for cold cleaner that use VOCs to remove soluble impurities from metal surfaces.
- (b) The parts washers under this unit meet the definition of insignificant activities per Regulation 2.16, section 1.23. However, Regulation 6.18 applies to each cold cleaner that use VOC to remove soluble impurities from metal surfaces. These parts washers shall meet the requirements under Regulation 6.18.

ii. **Monitoring and Record Keeping**

1) **VOC**

- (a) Regulation 6.18, section 4.4 establishes record keeping requirements for cold cleaners

c. **Emission Unit IA3 – Emergency Generators**

EP	Description	Applicable Regulations
E36	One (1) Turning Gear diesel generator, make Caterpillar, model C18, rated at 800 HP with an internal 404 gallon diesel fuel tank. Model year 2007 (Tier 2)	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart III
E37	One (1) diesel generator for FGD Quench Water system, make Caterpillar, model 3412, rated at 800 HP with an internal 450 gallon diesel fuel tank. Model year 2005 (Tier 1)	40 CFR 63 Subpart ZZZZ

EP	Description	Applicable Regulations
IE24	One (1) new natural gas fired emergency generator, make Kohler, model 60REZGB, rated output capacity 105 HP (78.3 kW)	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart JJJ

i. **Standards/Operating Limits**

1) **HAP**

- (a) These engines are subject to 40 CFR 63 Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, because it involves a stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions.

2) **Unit Operation**

- (a) 40 CFR 60.4205, 4206, 4207, and 4211 establish unit operation requirements for compress ignition engines (E36 and E37).
- (b) 40 CFR 60.4230, 4233, 4234, and 4243 establish unit operation requirements for spark ignition engines (IE24).

d. **Emission Unit IA4 – Fire Pump Engines**

EP	Description	Applicable Regulations
IE9	One (1) diesel fire pump engine, make Clarke, model JU4H-UFADY8, rated at 157 HP with a 187 gallon diesel fuel tank. Model year 2013.	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart III
IE10	One (1) diesel fire pump engine, make Clarke, model JU6H-UFADY58, rated at 183 HP with a 300 gallon diesel fuel tank. Model year 2013.	40 CFR 63 Subpart ZZZZ

i. **Standards/Operating Limits**

1) **HAP**

- (a) These engines are subject to 40 CFR 63 Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal*

Combustion Engines, because it involves a stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions.

2) **Unit Operation**

- (a) 40 CFR 60.4205, 4206, 4207, and 4211 establish unit operation requirements for compress ignition engines.

e. **Emission Unit IA5 – Other Insignificant Activities**

EP	Description	Applicable Regulations
IE11	Seventeen (17) lubricating oil tanks, capacity ranged from 400 to 20,000 gallons, each has a vapor pressure less than 1.0 mmHg (< 0.019 psi)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23
IE12	One (1) 1,000 gallon storage tank for #1 fuel oil with annual turnover < 2X the capacity, vapor pressure less than 0.019 psi	5.00, 5.01, 5.20, 5.21, 5.22, 5.23
IE13	One (1) portable kerosene storage tanks with capacity less than 500 gallons, vapor pressure less than 0.019 psi	5.00, 5.01, 5.20, 5.21, 5.22, 5.23
IE14	Two (2) cooling towers for Unit 2 and Unit 3	7.08
IE15	One (1) gypsum handling equipment, including two (2) stackers, one (1) overland conveyors, one (1) barge loading, one (1) truck loading, four (4) belt filters, two (2) conveyors, two (2) hoppers, and three (3) transfer towers	7.08
IE17	One (1) bottom/fly ash storage silo equipped with bin vent filters, make and model TBD, rated capacity 325 tph.	7.08
IE18	One (1) bottom/fly ash storage silo equipped with bin vent filters, make and model TBD, rated capacity 325 tph.	7.08
IE19	One (1) pub mill mixers, make and model TBD, rated capacity 200 tph	7.08
IE20	One (1) pub mill mixers, make and model TBD, rated capacity 200 tph	7.08
IE21	One (1) pub mill mixers, make and model TBD, rated capacity 200 tph	7.08
IE22	One (1) pub mill mixers, make and model TBD, rated capacity 200 tph	7.08
IE23	One (1) process water system (PWS), including:	

EP	Description	Applicable Regulations
	IE23-a: one (1) hydrated lime silos with bin vent filters, make and model TBD, rated capacity 10 tph;	7.08
	IE23-b: one (1) hydrated lime silos with bin vent filters, make and model TBD, rated capacity 10 tph;	
	IE23-c: one (1) PWS solid material storage pile;	
	IE23-d: one (1) front-end loader used to load material to trucks, capacity 20 tph.	

i. Standards/Operating Limits

1) Opacity

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) PM

(a) In accordance with Regulation 7.08, Table 1, PM standards for the silos is determined by the following equations:

$$E = 17.31(P)^{0.16} \quad \text{if } P > 30 \text{ tons/hr}$$

(b) It has been demonstrated that the PM emissions from this unit cannot exceed the lb/hr PM standards uncontrolled.