



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



May 11, 2020

**Title V
 Statement of Basis**

Source: Louisville Gas & Electric Company
 Cane Run Generating Station
 5252 Cane Run Road
 Louisville, KY 40216

Owner: Louisville Gas & Electric Company
 220 W. Main Street
 Louisville, KY 40202

Application Documents:	See Table I-9	Administratively Complete:	7/09/2019
Draft Permit:	3/26/2020	Proposed Permit:	3/26/2020
Permitting Engineer:	Yiqiu Lin	Permit Number:	O-0126-20-V
Plant ID:	0126	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 and updates permit format and permit language. Also, the following has been removed: 1) GT11 (U11), 2) Landfill (U20); 3) CAIR requirements; and 4) Part 1 of the NOx RACT Plan.

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 an attainment 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- Cane Run Generating Station generates electric energy for local and remote distribution.

2. Process Description:

This plant uses natural gas-fired combustion turbines for generation of electricity.

3. Site Determination:

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

4. Emission Unit Summary:

Emission Unit	Equipment Description
U15	Natural gas-fired combined cycle (NGCC) unit
U16	Natural gas-fired auxiliary boiler
U18	Emergency generator
U21	Parts Washer

5. Fugitive Sources:

There are fugitive emissions from haul roads and landfill area at this source.

6. Permit Revisions:

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
175-00-TV	12/17/2000	10/1/2002	Initial	Initial Permit Issuance
175-00-TV (R1)	12/17/2000	10/1/2002	Admin. Revision	Updated preamble and insignificant activities. Removed Method 22 from emission points E2, E4, and E6
175-00-TV (R2)	08/30/2014	11/18/2014	Renewal and Revision	Permit renewal; R.O. change and addition; Acid Rain permit revision; Incorporate construction permit 244-02, 608-07, 609-07, 643-07, 119-07, 30501-11, 31791-11, 34410-12, C-0126-1002-14, 35273-12(R1), 35274-12(R1)
175-00-TV (R3)	N/A	11/12/2015	Admin. Revision	Update pressure drop range for U15 catalytic oxidizers.

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
175-00-TV (R4)	3/05/2017; 4/20/2017	5/30/2017	Admin. revision	Administrative changes made to incorporate updated information ^a
			Sig. revision	Significant changes made to incorporate updated information ^b
<p>a. Administrative changes include the following:</p> <ol style="list-style-type: none"> 1) Create Plantwide Requirements section to include plantwide emission standards. 2) Move comments for each emission unit to footnotes. 3) Remove shutdown emission units and IAs. 4) Remove shutdown unit U4, U5, and U6 from acid rain permit 144-97-AR. 5) Add emission unit U-IA for IAs with emission standards. 6) Incorporate updated STAR EA demo. 7) Incorporate established pressure drop range for catalytic oxidizer C23 and C24. 8) Incorporate construction permit C-0126-1010-16-V for new emergency generators. 9) Add form used for determination of Benchmark Ambient Concentration. 10) Add “C-0126-1002-14, 35273-12(R1), and 35274-12(R1)” to revision description for 175-00-TV (R2) in this table. <p>b. Significant changes include the following:</p> <ol style="list-style-type: none"> 1) Incorporate CSAPR applicable requirements. 2) Incorporate CAIR applicable requirements. 				
O-0126-20-V	03/26/2020	05/11/2020	Renewal	Permit renewal. Update permit format and language. Removed GT11 (U11), removed Landfill (U20) ¹ ; removed CAIR requirements; and removed Part 1 of the NOx RACT Plan

¹ The Landfill has been closed in accordance with Special Waste Permit 056-00030, issued by the Kentucky Department of Waste Management (DWM).

7. Construction Permit History:

Permit No.	Issue Date	Description
C-0126-1002-14-V	10/6/2014	Re-issuance of construction permit for sludge processing plant (U7)
C-0126-1010-16-V	10/25/2016	Four (4) new emergency generators

8. Application and Related Documents

Document No.	Date Received	Description
22578	5/10/2019	Title V permit renewal application
22713	5/29/2019	Title V renewal application completeness determination
124927	11/21/2019	Title V renewal question about quantity of parts washers
125004, 125030	11/25/2019	Email regarding solvent usage in parts washers
126124	12/11/2019	Email regarding parts washer solvent usage
126185, 126186, 126187	12/12/2019	Email questions and responses related to Title V renewal
129793	1/30/2020	Pre-Draft permit sent to company for review
131603	2/14/2020	Company comments on pre-draft permit
132290	2/19/2020	Email questions and responses related to Title V renewal
132594	2/21/2020	Email questions and responses related to Title V renewal
133241	2/28/2020	Email questions and responses related to Title V renewal
134112	3/04/2020	Email questions and responses related to Title V renewal
134336	3/09/2020	Email questions and responses related to Title V renewal
138599	4/24/2020	Company comment on Title V renewal permit
138600, 138601	4/27/2020	District response that the typo would be fixed, and letting EPA know that a comment was received

9. Emission Summary

Pollutant	District Calculated Actual Emissions (tpy) 2018 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	15.17	Yes
NO _x	431.83	Yes
SO ₂	9.88	No
PM ₁₀	4.23	Yes
VOC	37.73	No
Total HAPs	5.38	No
Single HAP, > 1.0 tpy		
Toluene	2.12	No
Xylene	1.04	No

10. Applicable Requirements

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

11. Referenced Federal Regulations:

- | | |
|-------------------------|---|
| 40 CFR 52 Subpart A | Approval and Promulgation of Implementation Plans – General Provisions |
| 40 CFR 60 Subpart Dc | Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units |
| 40 CFR 60 Subpart IIII | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines |
| 40 CFR 60 Subpart KKKK | Standards of Performance for Stationary Combustion Turbines |
| 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 96 | NO _x Budget Trading Program and CAIR NO _x and SO ₂ Trading Programs for State Implementation Plans |
| 40 CFR 97 Subpart AAAAA | CSAPR NO _x Annual Trading Program |

40 CFR 97 Subpart CCCCC	CSAPR SO ₂ Group 1 Trading Program
40 CFR 97 Subpart EEEEE	CSAPR NO _x Ozone Season Group 2 Trading Program
40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

12. Non-Applicable Regulations:²

Regulation	Title	Reason for Non-applicability
7.09	Standards of Performance for New Process Gas Streams	Reg. 7.09 and Reg. 6.10 cover same facilities. Based on research by the District on Reg. 6.10 and its applicability history, the existing turbine was never subject to this this regulation. Therefore, the District has determined that new turbine should not be subject to Regulation 7.09.
7.25	Standards of Performance for New Source Using Volatile Organic Compounds	Total PTE for VOC from all affected facilities subject to Reg. 7.25 is less than 5.0 tpy.
40 CFR 52.21	Approval and Promulgation of Implementation Plans - Prevention of Significant Deterioration of Air Quality	Source has monitor the emissions of applicable pollutants for a period of 5 years following the construction projection completed.
40 CFR 96	NO _x Budget Trading Program and CAIR NO _x and SO ₂ Trading Programs for State Implementation Plans	In Federal Register Vol.84, No. 67, 13800, effective May 8, 2019, EPA approved Kentucky's November 16, 2018, SIP submittal seeking to change reliance from CAIR to CSAPR.

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 These regulations were applicable in a previous permit but are no longer applicable for the reason shown.

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. This source does not use any of the listed chemicals.

3. Prevention of Accidental Releases 112(r):

The source does not 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.

4. 40 CFR Part 64 Applicability Determination:

The source does not have emission units that have emissions greater than major source threshold and need control devices to achieve compliance with the standards. Therefore, the source is not subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source.

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

The NGCC unit at this source is 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.

6. 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.

Regulation	Title	Basis
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.
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 NO _x emitting facilities for new or renewed operating permit applications.

Regulation	Title	Basis
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 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	The boiler is subject to 40 CFR60, Subpart Dc if the commencement date of construction is after June 9, 1989 and the heat input capacity is less than 100 MMBtu/hr, but greater than 10 MMBtu/hr.
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 KKKK	Standards of Performance for Stationary Combustion Turbines	40 CFR60, Subpart KKKK establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.
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.

Regulation	Title	Basis
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	
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 Cane Run is a Title V major source for NO_x, CO, and PM₁₀. The source accepted 25/10 tpy HAP limits to avoid being a HAP major source. Regulation 2.16 - Title V Operating Permits establishes requirements for major sources. LG&E Cane Run is one of the 28 source categories which have 100 tpy major thresholds. It is a PSD major source for NO_x, CO, and Particulate matter. LG&E Cane Run is also a GHG major source. The source has taken a plantwide CO and VOC limit in order to avoid PSD review in accordance with Regulation 2.05.

LG&E Cane Run 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 August 29, 2016. Compliance with the STAR EA Goals was demonstrated in the source's EA Demonstrations. Since June 30, 2015, the source has shut down the coal-fired boilers and their associated material processing equipment. The NGCC unit (U15) and the associated auxiliary boiler (U16) and emergency

generator (U18) have been in normal operation since then. The District reviewed TAC Environmental Acceptability Demonstration for the NGCC unit and its associated equipment. AERMOD was performed for emergency generators (U18). The following table demonstrates that the carcinogen risk and non-carcinogen risk values, calculated using the District approved PTE for each unit and modeling results from the source’s EA Demonstration, comply with the STAR EA goals required in Regulation 5.21.

Plantwide Summary	All existing & new P/PE		All new P/PE	
	Industrial Total R _C	1.33	< 75	1.33
Non-Ind. Total R _C	1.33	< 7.5	1.33	< 3.8
Industrial Max. R _{NC}	0.001	< 3.0		
Non-Ind. Max. R _{NC}	0.001	< 1.0		

		R _{NC} Total			U18 (5 Egs)			
		Indus.	Non-Ind.	R _{NC}	Industrial		Non-Industrial	
TAC	CAS #	R _{NC}	R _{NC}	EA	R _C	R _{NC}	R _C	R _{NC}
Total R_C/ Max. R_{NC}		0.00	0.00	0	1.33		1.33	
Diesel particulate matter		0.00	0.00	<3.0/1.0	1.30	0.001	1.30	0.001
Polycyclic organic matter	50-32-8	0.00	0.00	<3.0/1.0	0.03	0	0.03	0

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 U15 – Natural gas-fired combined cycle (NGCC) unit**

EP	Description	Applicable Regulations
E31	Natural gas-fired combustion turbine (F Class), designated as GT-7A, make Siemens Energy, model SGT6-5000F.EE, equipped with a heat recovery steam generator (HRSG).	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.42, 6.47, 7.02, 40CFR72-73, 75-78,
E32	Natural gas-fired combustion turbine (F Class), designated as GT-7B, make Siemens Energy, model	

EP	Description	Applicable Regulations
	SGT6-5000F.EE, equipped with a heat recovery steam generator (HRSG).	40CFR60 Subpart KKKK

i. **Standards/Operating Limits**

1) **NO_x**

- (a) 40 CFR 60.4320(a) establishes NO_x emission standards of 15 ppm at 15% O₂ or 54 ng/J of useful output (0.43 lb/MWh), based upon a 30-day rolling average. These standards were adopted by NO_x RACT Plan.
- (b) Acid Rain Permit 144-97-AR (R1) does not have applicable NO_x limits set by 40 CFR 76 for the newly constructed emission unit.

2) **SO₂**

- (a) 40 CFR 60.4330(a) establishes SO₂ standards for stationary combustion turbines. The source may elect to comply with the SO₂ emission standards 110 ng/J (0.90 lb/MWh) gross output or 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input.
- (b) Acid Rain Permit 144-97-AR (R1) does not have a SO₂ allowances for newly constructed emission unit per EPA Acid Rain Program.

3) **TAC**

- (a) According to Regulation 5.21, section 2.7, TAC emissions from the natural gas-fired turbine are de minimis.

ii. **Monitoring and Recordkeeping**

1) **CO**

- (a) The owner or operator elected to utilize a CO CEMS to monitor CO emissions and demonstrate compliance with the PSD avoidance emission cap in accordance with Regulation 2.03, section 5.1.

2) **NO_x**

- (a) The source is required to install and operate a NO_x CEMS for each combustion turbine in accordance with NO_x RACT Plan and 40 CFR 60.4335(b) and 4340(b)(1). According to 40 CFR 60.4335 and 60.4340, depending on whether a water or steam injection is used for NO_x control, the owner or operator may elect to use one of the continuous monitoring system for fuel and water/steam, continuous emission monitoring system (CEMS), performance test, or continuous parameter monitoring system to demonstrate compliance with NO_x limit. LG&E has elected to use NO_x CEMS for the units.
- (b) 40 CFR 60.4345 establishes requirements for the performance evaluations of NO_x CEMS.
- (c) 40 CFR 60.4350 establishes the guidelines for identifying excess NO_x emissions.

3) **SO₂**

- (a) 40 CFR 60.4360, 4365, and 4370 establishes monitoring and record keeping requirements to assure compliance with SO₂ standards under 40 CFR 60.4330(a).

iii. **Reporting**

1) **General reporting requirements**

- (a) The quarterly reporting requirement is based on Title V permit and Regulation 6.02. According to Regulation 6.02, section 16.1, owners or operators of facilities required to install CEMS shall submit for every calendar quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The reports of excess emissions and monitor downtime required by 40 CFR 60.4375(a) can be combined with the quarterly compliance report.
- (b) 40 CFR 60.7 (c) establishes requirements for the written reports of excess emissions.

2) **NO_x**

- (a) 40 CFR 60.4380(b) establishes reporting requirements for periods of excess emissions and monitor downtime.

iv. **Testing**

1) **NO_x**

- (a) 40 CFR 60.4400(a) requires the owner or operator must conduct an initial performance test, as required in 40 CFR 60.8.
- (b) If the owner or operator elects to install and certify a NO_x-diluent CEMS under § 60.4345, then the initial performance test required under § 60.8 may be performed in the following alternative manner per 40 CFR 60.4405.
- (c) 40 CFR 60.4400(b) establishes specific requirements for NO_x performance test.
- (d) LG&E conducted initial stack tests for NO_x, CO, VOC, SO₂, and HAP on May 14, 2015 (GT-7A) and May 29, 2015 (GT-7B).

2) **SO₂**

- (a) If the owner or operator elects to monitor the total sulfur content of the fuel being fired in the turbine, the sulfur content of the fuel must be determined using total sulfur methods as described in 40 CFR 60.4415(a).
- (b) LG&E conducted initial stack tests for NO_x, CO, VOC, SO₂, and HAP on May 14, 2015 (GT-7A) and May 29, 2015 (GT-7B).

d. **Emission Unit U16 – Natural Gas-fired Auxiliary Boiler**

EP	Description	Applicable Regulations
E33	Natural gas-fired auxiliary boiler with low NO _x burners, make Cleaver Brooks, model CP-NB-200D-45-250, capacity 59.9 MMBtu/hr. Installed 2014/2015	5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23, 6.42, 7.06, 40 CFR 60 Subpart Dc

i. **Standards/Operating Limits**

1) **NO_x**

- (a) The NO_x RACT Plan establishes NO_x emission standard, 3.60 lb/hr, based on the manufacturer’s certified emission factor.

2) **Opacity**

- (a) Regulation 7.06, section 4.2 establishes opacity standards for the boiler.
- (b) The District has determined that using a natural gas fired boiler 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.

3) **PM**

- (a) For unit U16, the total heat input capacity of all affected facilities within the source is 99.9 MMBtu/hr. In accordance with Regulation 7.06, section 4.1.3, PM limit is 0.154 lb/MMBtu.
- (b) A one-time PM and SO₂ compliance demonstration has been performed for the boiler, using AP-42 emission factors and combusting natural gas, and the emission standards under Regulation 7.06 for PM and SO₂ cannot be exceeded when combusting natural gas.

4) **SO₂**

- (a) For unit U16, the total heat input capacity of all affected facilities within the source is 99.9 MMBtu/hr. In accordance with Regulation 7.06,

section 5.1.1, since the total heat input capacity within the source is less than 145 MMBtu, the SO₂ emission standards for combustion of gaseous fuel is 1.0 lb/MMBtu.

- (b) A one-time PM and SO₂ compliance demonstration has been performed for the boiler, using AP-42 emission factors and combusting natural gas, and the emission standards under Regulation 7.06 for PM and SO₂ cannot be exceeded when combusting natural gas.

5) **TAC**

- (a) Per Regulation 5.21, section 2.7, the TAC emissions from the combustion of natural gas are de minimis.

ii. **Monitoring and Recordkeeping**

1) **NO_x**

- (a) In accordance with Regulation 6.42, section 4.3, the NO_x RACT Plan establishes monitoring and record keeping requirements to assure compliance with the NO_x emission standards.

2) **SO₂**

- (a) 40 CFR 60.48c(g)(2) establishes recording keeping requirements for SO₂.

e. **Emission Unit U18 – Emergency Generators**

EP	Description	Applicable Regulations
E35	Emergency diesel generator, make Caterpillar, model C27, maximum output 1,006 hp (750 KW), equipped with a 1,286 gallons storage tank. Model year 2014.	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 40 CFR 63, Subpart ZZZZ,

EP	Description	Applicable Regulations
E38-A E38-B E38-C E38-D	Four (4) diesel emergency generators, make Cummins, model C3000 D6e, each rated 3,000 KW (4,307 HP) and equipped with a 500 gallon diesel tank. These generators are installed to provide electrical power to start either one of the NGCC primary turbines during emergency blackout conditions.	40 CFR 60, Subpart III

i. **Standards/Operating Limits**

1) **HAP**

- (a) The equipment listed in this emission unit is subject to 40 CFR 63, Subpart ZZZZ. However, there are no HAP standards. According to 40 CFR 63.6590(c) the new emergency generators must meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR, 60 Subpart III. No further requirements apply for the engine under 40 CFR 63 Subpart ZZZZ.

2) **Operation**

- (a) These emergency generators are subject to 40 CFR 63, Subpart ZZZZ because they involve stationary reciprocating internal combustion engines (RICE) located at major/area source of HAP. These emergency generators are also subject to 40 CFR 60, Subpart III because they involve new compression ignition (CI) ICEs as specified in 60 CFR 60.4200(a).
- (b) 40 CFR 60.4202, 4205, 4211 establish unit operation requirements for the nonroad engines.
- (c) 40 CFR 60.4207(b) and 40 CFR 80.510(b)(1)(i) have fuel requirement for diesel fuel.

3) **TAC**

- (a) Environmental acceptability demonstration for these emergency generators were based on 500 hours per year operation time for each of the emergency generators.

ii. **Monitoring and Recordkeeping**

1) **Operation**

- (a) 40 CFR 60.4209 and 4214 establish recordkeeping requirements for this unit.
- (b) 40 CFR 80.510(b)(1)(i) establishes fuel requirement for diesel fuel used in nonroad engines.

f. **Emission Unit U21 – Parts Washers**

EP	Description	Applicable Regulations
IE8	Parts washer, make Westward, model 4KTV8, capacity 40 gallons	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 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.

2) **TAC**

- (a) Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability.
- (b) TAC emissions from this equipment are de minimis per PTE.

ii. **Monitoring and Record Keeping**

1) **VOC**

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

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 did not request any operational flexibility.

5. Compliance History:

Date	Regulation Violated	Settlement
2/16/2011	Reg. 1.14 Section 2, failure to take reasonable precautions to prevent emission	Board Order 4/18/2012
6/21/2011	Reg. 1.09, general prohibition Reg. 1.14, Section 2, failure to take reasonable precautions to prevent emission Reg. 1.07, Section 4, failure to report excess emissions	Board Order 4/18/2012
2/15/2012	Reg. 1.14, Section 2, visible fugitive emissions beyond the property line	Board Order 4/17/2013
3/21/2012	Reg. 1.14, Section 2, failure to control fugitive particulate emissions	Board Order 11/20/2013
4/20/2012	Reg. 1.14, Section 2, visible fugitive emissions beyond the property line	Board Order 11/20/2013
4/28/2012	Reg. 1.14, Section 2, visible fugitive emissions beyond the property line	Board Order 11/20/2013
4/16/2012	Reg. 1.14, Section 2, failure to control fugitive particulate emissions	Board Order 11/20/2013
6/3/2012	Reg. 1.07, Section 4, failure to report excess emissions Reg. 1.09, general prohibition of air pollution Reg. 7.08, Section 3, excess opacity or particulate matter	Board Order 11/20/2013
3/14/2012	Reg. 1.13, Section 2, failure to control objectionable odors	Board Order 4/17/2013
9/13/2012	Reg. 1.05, Section 5, failure to use good air pollution control practice	Board Order 11/20/2013
6/8/2012	Reg. 1.14, Section 2, failure to control fugitive	Board Order 11/20/2013

Date	Regulation Violated	Settlement
	particulate emissions	
2/13/2012	Reg. 1.14, Section 2, visible fugitive emissions beyond the property line	Board Order 11/20/2013
2/8/2012	Reg. 1.14, Section 2, visible fugitive emissions beyond the property line	Board Order 11/20/2013
6/3/2013	Reg. 1.13, Section 2, failure to control objectionable odors	Board Order 11/20/2013
2/21/2014	Reg. 1.13, Section 2, failure to control objectionable odors	Agreement 7/28/2014
7/2/2014	Reg. 1.14, Section 2 and 4, visible fugitive emissions beyond the property line	Agreement 2/19/2015

6. Calculation Methodology or Other Approved Method:

For the NGCC unit, the PTE evaluation utilized manufacturer's guaranteed emission factors. The actual emissions for NO_x and CO shall be determined using CEMS records; actual emissions for VOC and Formaldehyde shall be calculated using emission factors from the required stack tests. AP-42 emission factors can be utilized if CEMS or performance test emission factors are not available.

For the natural gas-fired auxiliary boiler, fuel gas heater, and emergency generator, emissions can be calculated using manufacturer's guaranteed emission factors, or AP-42 emission factors if manufacturer's guaranteed emission factors are not available for the pollutants.

Table A1. U15 - Natural Gas-fired Combined Cycle Unit (EGU7)

Pollutant	CAS No.	EF (lb/MMBtu)	Source
CO			CEMS
NO _x			CEMS
PM		5.100E-04	2011 NEI
PM condensable		3.10E-04	2011 NEI
PM10		2.00E-04	2011 NEI
PM2.5		1.10E-04	2011 NEI
SO ₂			CEMS
VOC		2.100E-03	AP-42, 3.1-2a
Single HAP			
1,3-Butadiene	106-99-0	4.30E-07	AP-42, 3.1-3
Acetaldehyde	75-07-0	4.00E-05	AP-42, 3.1-3
Acrolein	107-02-8	6.40E-06	AP-42, 3.1-3

Pollutant	CAS No.	EF (lb/MMBtu)	Source
Benzene	71-43-2	1.20E-05	AP-42, 3.1-3
Ethyl Benzene	100-41-4	3.20E-05	AP-42, 3.1-3
Formaldehyde (for GT-7A)	50-00-0	1.32E-02	lb/hr, stack test
Formaldehyde (for GT-7B)	50-00-0	2.21E-02	lb/hr, stack test
Mercury	7439-97-6	6.36E-06	FIRE
Naphthalene	91-20-3	1.30E-06	AP-42, 3.1-3
PAH	43116	2.20E-06	
Propylene Oxide	75-56-9	2.90E-05	AP-42, 3.1-3
Toluene	108-88-3	1.30E-04	AP-42, 3.1-3
Xylene	1330-20-7	6.40E-05	AP-42, 3.1-3

Table A2. U16 - Natural Gas-fired Auxiliary Boiler (E33)

Pollutant	CAS No.	EF (lb/mmcf)	EF Source
NH3		0.49	2011 NEI
CO		84	AP-42, 1.4-1
NOx		50	AP-42, 1.4-1
PM (TSP)		0.52	
PM-Con		0.32	2011 NEI
PM10-Fil		0.20	2011 NEI
PM2.5-Fil		0.11	2011 NEI
SO2		0.60	AP-42, 1.4-2
VOC		5.50	AP-42, 1.4-2
Single HAP			
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
DMBA	57-97-6	1.60E-05	AP-42, 1.4-3
Acenaphthene	83-32-9	1.80E-06	AP-42, 1.4-3
Acenaphthylene	208-96-8	1.80E-06	AP-42, 1.4-3
Anthracene	120-12-7	2.40E-06	AP-42, 1.4-3
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
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
Chrysene	218-01-9	1.80E-06	AP-42, 1.4-3
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	AP-42, 1.4-3

Pollutant	CAS No.	EF (lb/mmcf)	EF Source
Dichlorobenzene	25321-22-6	1.20E-03	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
Naphthalene	91-20-3	6.10E-04	AP-42, 1.4-3
Phenanthrene	85-01-8	1.70E-05	AP-42, 1.4-3
Pyrene	129-00-0	5.00E-06	AP-42, 1.4-3
Toluene	108-88-3	3.40E-03	AP-42, 1.4-3
Arsenic	7440-38-2	2.00E-04	AP-42, 1.4-4
Beryllium	7440-41-7	1.20E-05	AP-42, 1.4-4
Cadmium	7440-43-9	1.10E-03	AP-42, 1.4-4
Chromium	7440-47-3	1.40E-03	AP-42, 1.4-4
Cobalt	7440-48-4	8.40E-05	AP-42, 1.4-4
Lead	7439-92-1	5.00E-04	
Manganese	7439-96-5	3.80E-04	AP-42, 1.4-4
Mercury	7439-97-6	2.60E-04	AP-42, 1.4-4
Nickel	7440-02-0	2.10E-03	AP-42, 1.4-4
Selenium	7782-49-2	2.40E-05	AP-42, 1.4-4

Table A3. U18 – Emergency Generators (E35, E38-A, B, C, D)

Pollutant	CAS No.	> 600 HP	
		EF (lb/MMBtu)	Source
NOx		3.20	AP-42, 3.4-1
CO		0.85	AP-42, 3.4-1
SOx		1.01S1	AP-42, 3.3-1, S1- % sulfur in fuel
PM10		0.100	AP-42, 3.4-2
VOC		0.09	AP-42, 3.4-1
Single HAP			
Benzene	71-43-2	7.76E-04	AP-42, 3.4-3
Toluene	108-88-3	2.81E-04	AP-42, 3.4-3
xylenes	1330-20-7	1.93E-04	AP-42, 3.4-3
Formaldehyde	50-00-0	7.89E-05	AP-42, 3.4-3
Acetaldehyde	75-07-0	2.52E-05	AP-42, 3.4-3
Acrolein	107-02-8	7.88E-06	AP-42, 3.4-3

Pollutant	CAS No.	> 600 HP	
		EF (lb/MMBtu)	Source
Naphthalene	91-20-3	1.30E-04	AP-42, 3.4-4
Acenaphthylene (POM, 208-96-8)		9.23E-06	AP-42, 3.4-4
Acenaphthene (POM, 83-32-9)		4.68E-06	AP-42, 3.4-4
Fluorene (POM, 86-73-7)		1.28E-05	AP-42, 3.4-4
Phenanathrene (POM, 85-01-8)		4.08E-05	AP-42, 3.4-4
Anthracene (POM,120-12-7)		1.23E-06	AP-42, 3.4-4
Fluoranthene (POM, 206-44-0)		4.03E-06	AP-42, 3.4-4
Pyrene (POM, 129-00-0)		3.71E-06	AP-42, 3.4-4
Benzo(a)anthracene	56-55-3	6.22E-07	AP-42, 3.4-4
Chrysene	218-01-9	1.53E-06	AP-42, 3.4-4
Benzo(b)fluoranthene	205-99-2	1.11E-06	AP-42, 3.4-4
Benzo(k)fluoranthene	207-08-9	2.18E-07	AP-42, 3.4-4
Benzo(a)pyrene	50-32-8	2.57E-07	AP-42, 3.4-4
Indeno(1,2,3-cd)pyrene	193-39-5	4.14E-07	AP-42, 3.4-4
Dibenz(a,h)anthracene	53-70-3	3.46E-07	AP-42, 3.4-4
Benzo(g,h,i)perylene (POM, 191-24-2)		5.56E-07	AP-42, 3.4-4

Table A4. UIA3 PM Emissions

Unit	Emi. Point	Processes Description	Uncontrolled Emission Factors			Control Efficiency	Calculation Methodologies, Emission Factor Sources
			PM EF (lb/ton)	PM10 EF (lb/ton)	PM2.5 EF (lb/ton)		
UIA3	E36-A	Paved road	0.765	0.153	0.038	N/A	AP-42, 13.2.1, Eq.1
	E36-B	Unpaved road	5.512	1.352	0.135	N/A	AP-42, 13.2.2, Eq.1a

Table A5. Miscellaneous Insignificant Activities and Equipment not Regulated

Unit	Emission Point	Process Description	Calculation Methodologies, Emission Factor Sources
IA1	IE1	Cooling tower	0.08 lb/hr, AP-42, 13.4
IA2	IE3-IE7	Storage tanks (diesel, kerosene, gasoline)	EPA TANK4.0 Program, based on fuel properties and usage
U21	E39	Parts washer	Mass balance method, based on cleaning material usage
Equipment Not Regulated	IE2	Lube oil demister vents	Mass balance method, based on lubricant oil usage

7. Insignificant Activities

Equipment	Qty.	PTE (tpy)	Regulation Basis
Indirect heat exchangers <10 MMBtu/hr, capacity ranged from 0.05 – 0.35 MMBtu/hr	11	0.74 SO ₂	Regulation 1.02, Appendix A
Mechanical draft cooling tower (See unit IA1)	1	2.58 PM ₁₀	Regulation 1.02
1,286 gallons diesel tanks for emergency generator U18-E35 (See unit IA2)	1	0.027 VOC	Regulation 1.02, Appendix A
500 gallons diesel tanks for emergency generator U18-E38 (See unit IA2)	4	0.02 VOC	Regulation 1.02, Appendix A
4,000 gallons diesel tank (See unit IA2)	1	0.01 VOC	Regulation 1.02, Appendix A
275 gallons diesel tank (See unit IA2)	1	5.0×10 ⁻⁵ VOC	Regulation 1.02, Appendix A
300 gallons kerosene tank (See unit IA2)	1	7.5×10 ⁻⁵ VOC	Regulation 1.02, Appendix A
Portable diesel tank (See unit IA2)	1	6.0×10 ⁻⁵ VOC	Regulation 1.02, Appendix A
Portable gasoline tank (See unit IA2)	1	0.055 VOC	Regulation 1.02

- 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.
- 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.
- The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 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.
- 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.
- 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. Equipment Not Regulated

Equipment	Qty.	Basis of Determination
Lube oil demister vents	3	No applicable regulation. Not subject to Reg. 7.25 since total VOC of affected facilities less than 5 tpy.

9. Basis of Regulation Applicability for IA units

a. Emission Unit IA1 – Cooling Tower

EP	Description	Applicable Regulations
IE1	Mechanical draft cooling tower with water flow rate 210,000 gal/min	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) PM standard for cooling tower (IE1) is determined in accordance with Regulation 7.08, Table 1. It has been demonstrated that PM emissions from this equipment cannot exceed the lb/hr PM standards uncontrolled.

3) TAC

- (a) Per Regulation 5.21, section 2.3, TAC emissions

b. Emission Unit IA2 – Storage Tanks

EP	Description	Applicable Regulations
IE3	Diesel storage tank, make Caterpillar, capacity 1,286 gallons, used for emergency generator U18-E35.	5.00, 5.01, 5.20, 5.21, 5.22, 5.23,
IE4	Diesel storage tank, make Albert Oil, capacity 275 gallons	5.00, 5.01, 5.20, 5.21, 5.22, 5.23,
IE5	Kerosene storage tank, make Albert Oil, capacity 300 gallons	5.00, 5.01, 5.20, 5.21, 5.22, 5.23,
IE6	Portable diesel storage tank, make Tuthill Transfer Systems, model 485000	5.00, 5.01, 5.20, 5.21, 5.22, 5.23,
IE7	Portable gasoline storage tank, make Transfer Flow, model DOT-SP11911	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.15

EP	Description	Applicable Regulations
IE8	Four (4) diesel storage tanks, capacity 500 gallons for each, used for emergency generator U18-E38A, E38B, E38C, and E38D	5.00, 5.01, 5.20, 5.21, 5.22, 5.23
IE9	Diesel storage tank, capacity 4,000 gallons, used to supply 500-gallon tanks for emergency generators U18-E38A, E38B, E38C, and E38D	5.00, 5.01, 5.20, 5.21, 5.22, 5.23

i. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 7.15, section 3.1 establishes emission standards for gasoline storage vessels (IE7).

2) **TAC**

- (a) Per Regulation 5.21, section 2.3, TAC emissions from the insignificant activities are de minimis.

c. **Emission Unit IA3– Haul Road**

EP	Description	Applicable Regulations
E36-A	Paved road particulate emissions	1.14
E36-B	Unpaved road particulate emissions	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.