

**Louisville Metro Air Pollution Control District**  
**850 Barret Ave., Louisville, Kentucky 40204**  
**20 August 2015**

**Title V Statement of Basis**

**Company:** Louisville Medical Center, Inc., Steam & Chilled Water Plant

**Plant Location:** 235 Abraham Flexner Way, Louisville, Kentucky 40202

**Date Application Received:** 2/10/2014, 3/30/2014, 2/12/2015, 2/27/2015, 3/10/2015, 3/20/2015, 8/14/2015

**Date Admin Complete:** 29 May 2014

**Date of Draft Permit:** 8/20/2015

**Date of Proposed Permit:** 8/20/2015

**District Engineer:** Yiqiu Lin

**Permit No:** O-0148-15-V

**Plant ID:** 0148

**SIC Code:** 4961

**NAICS:** 221330

**AFS:** 00148

**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.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM<sub>2.5</sub>), unclassifiable for the 2012 standard for particulate matter less than 2.5 micron (PM<sub>2.5</sub>) and partial non-attainment area for sulfur dioxide (SO<sub>2</sub>).

**Application Type/Permit Activity:**

- Initial Issuance
- Permit Revision
  - Administrative
  - Minor
  - Significant
- Permit Renewal

**Compliance Summary:**

- Compliance certification signed
- Source is out of compliance
- Compliance schedule included
- Source is operating in compliance

**I. Source Information**

1. **Product Description:** Steam production and distribution plant
2. **Process Description:** The source provides steam and chilled water services to the downtown hospital complex. The steam generated is utilized for medical sterilization and climate control for buildings.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

<b>Emission Unit</b>	<b>Equipment Description</b>
U1	Steam boilers - Boiler #1, #2, and #3
U2	Steam boilers - Boiler #4, #5, and #6
U3	Ash handling and transfer equipment
U4	Emergency generators
U5	Coal handling and transfer equipment

5. **Fugitive Sources:** There are fugitive emissions from ash handling and coal handling equipment at this source.
6. **Permit Revisions:**

<b>Revision No.</b>	<b>Permit No.</b>	<b>Issue Date</b>	<b>Public Notice Date</b>	<b>Change Type</b>	<b>Change Scope</b>	<b>Description</b>
Initial	89-97-TV	01/31/2000	11/21/1999	Initial	Entire Permit	Initial Permit Issuance
R1	89-97-TV (R1)	09/30/2009	06/15/2009	Renewal	Entire Permit	Scheduled permit renewal; Incorporation of construction permit 244-08 for boiler modification and revised NOx RACT Plan (Amendment 2).
	O-0148-15 -V	x/xx/2015	8/20/2015	Renewal	Entire Permit	Scheduled permit renewal; Incorporation of Construction Permit 34050-12 for Boiler #3 modification, 35728-12 for new baghouses, C0148-1000-14 for a new emergency generator, and revised NOx RACT Plan (Amendment 3).

**7. Construction Permit History:**

Permit No.	Issue Date	Description
34050-12-C	2/15/2012	Modification of Boiler #3 to natural gas boiler
35728-12-C	11/6/2012	Installation of baghouses for Boiler #4, 5, and 6
C-0148-1000-14	1/23/2015	New 2,200 HP diesel emergency generator
C-0148-1003-15-V	08/05/2015	Lime injection systems for coal fired boilers #4, 5, 6.

**8. Emission Summary:**

Pollutant	District Calculated Actual Emissions (tpy) 2013 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	90.2	Yes
NO <sub>x</sub>	153.1	Yes
SO <sub>2</sub>	354.0	Yes
PM <sub>10</sub>	54.6	Yes
VOC	1.39	No
Total HAPs	18.7	Yes
Single HAP > 1 tpy		
Hydrochloric Acid	15.83	Yes
Hydrogen Fluoride	1.98	No
Greenhouse Gas	85,537* CO <sub>2</sub> e	Yes

\* This data obtained from EPA 2013 Greenhouse Gas Emissions ([ghgdata.epa.gov](http://ghgdata.epa.gov)).

**9. Applicable Requirements:**

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

**10. Future MACT Requirements:** The source is subject to 40 CFR 63, Subpart DDDDD. The compliance date for existing boilers is January 31, 2016.

**11. Referenced Federal Regulations in Permit:**

40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutant for Industrial, Commercial, and Institutional Boilers and Process Heaters
40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 CFR 64	Compliance Assurance Monitoring for Major Stationary Sources

**II. Regulatory Analysis**

1. **Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
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 manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
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 coal-fired boilers are subject to 40 CFR Part 64 - *Compliance Assurance Monitoring (CAM) for Major Stationary Source* since 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 initial PM CAM Plan on July 15, 2004 and an updated CAM Plan on January 6, 2015.
5. **Basis of Regulation Applicability**
  - a. **Plant-wide**

MCSP is a Title V major source for NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, Total HAP, and Single HAP. Regulation 2.16 - *Title V Operating Permits* establishes

requirements for major sources. Based on the plantwide PTE evaluation, MCSP is a PSD major source for NO<sub>x</sub>, CO, SO<sub>2</sub>, and particulate matter<sup>1</sup>.

Regulations 5.00 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.

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.

**b. Emission Unit U1 – Steam boilers – Boiler #1, #2, and #3**

**i. Equipment:**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
U1 – E1	One (1) natural gas fired boiler with low NO <sub>x</sub> burners, designated as Boiler #1, with a rated heat input capacity of 56 MMBtu/hr, make VOGT, model CL-VS, SN-7152. (1954, 2004)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 7.06, 6.42, 40CFR60 Subpart Dc, 40CFR63, DDDDD,	Regulation 5.00, 5.01, 5.20, 5.21, 5.22, 5.23 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which potentially could exceed the de minimis values.  Existing indirect heat exchangers for which was in being or under construction prior to April 19, 1972 are subject to Regulation 6.07.
U1-E2	One (1) natural gas fired boiler, designated as Boiler #2, with a rated heat input capacity of 56 MMBtu/hr, make VOGT, model	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 6.07, 6.42, 40 CFR 63, DDDDD	New indirect heat exchangers with a capacity less than 250 MMBtu/hr for which commenced after April 9, 1972 are subject to Regulation 7.06.  Regulation 6.42 applies to the NO <sub>x</sub> emissions from all NO <sub>x</sub> emitting facilities located at major

<sup>1</sup> The potential emissions for greenhouse gases are greater than 100,000 tpy CO<sub>2</sub>e and 100 tpy on mass basis.

Emission Point	Description	Applicable Regulation	Basis for Applicability
	CL-VS, SN-9638. (1954)		NO <sub>x</sub> source.
U1-E3	One (1) natural gas-fired boiler with low NO <sub>x</sub> burner, designated as Boiler #3, with a rated heat input capacity of 56 MMBtu/hr, make VOGT, model CL-VS, SN-7861. (1954, 2012)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.06, 6.42, 40CFR60 Subpart Dc, 40CFR63, DDDDD,	<p>40 CFR 60, Subpart Dc establishes emission limitations and work practice standards of performance for small industrial, commercial, institutional steam generating units.</p> <p>40 CFR 63, Subpart DDDDD establishes national emission limitations and work practice standards for HAPs emitted from industrial, commercial, and institutional boilers and process heaters located at major sources.</p> <p>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.</p>

ii. **Standards/Operating Limits**

1) **NO<sub>x</sub>**

- (a) Regulation 6.42, section 4.3 requires permit applicant for NO<sub>x</sub>-emitting facilities to propose RACT emission-limiting standards and RACT emission control technology. The NO<sub>x</sub> RACT Plan-Amendment 3 was adopted by the Air Pollution Control Board of Jefferson County on August 21, 2013.
- (b) Construction permit C-0148-1003-15-V allows an increase in the maximum plant-wide heat input capacity from 362 MMBtu/hr to 418 MMBtu/hr and the 10% annual capacity factor limit for Boiler #1 was removed. It was demonstrated that these modifications did not trigger PSD review.

2) **SO<sub>2</sub>**

- (a) Boiler #1 and #3 are subject to Regulation 7.06. In accordance with Regulation 7.06, section 5, the emission standard for SO<sub>2</sub> is 0.80 lb/MMBtu/hr.
- (b) Boiler #2 is subject to Regulation 6.07. The

emission standard for SO<sub>2</sub> is determined in accordance with Regulation 6.07, section 4.1 as follows:

Total Heat Input Capacity = 168 MMBtu/hr

Natural Gas: 1.0 lb/MMBtu (Table 2)

Coal:  $9.46*(168)^{-0.374} = 1.39$  lb/MMBtu

3) **PM**

(a) Boiler #1 and #3 are subject to Regulation 7.06. In accordance with Regulation 7.06, section 4, the emission standard for PM is 0.10 lb/MMBtu/hr.

(b) Boiler #2 is subject to Regulation 6.07. The emission standard for PM is determined in accordance with Regulation 6.07, section 3.1 as follows:

Total Heat Input Capacity = 168 MMBtu/hr

PM limit =  $0.9634*(168)^{-0.2356} = 0.288$  lb/MMBtu

4) **Opacity**

Regulation 6.07, section 3.2 and Regulation 7.06, section 4.2 establish opacity standards for the boilers.

5) **TAC**

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

(b) According to Regulation 5.21, section 2.7, TAC emissions from natural gas fired boilers are de minimis.

6) **HAP**

40 CFR 63.7495, 7500, and 7505 establish emission limits, work practice standards, and operating limits for new and existing boilers.

iii. **Monitoring and Record Keeping**

1) **NO<sub>x</sub>**

(a) NO<sub>x</sub> RACT Plan establishes monitoring and record

keeping requirements for NO<sub>x</sub> emissions.

- (b) In a letter dated March 7, 2002, from EPA Region 4, EPA has identified certain types of alternative record keeping requirements for units that are regulated under 40 CFR 60 Subpart Dc that can be approved by the District without additional input from EPA.

2) **SO<sub>2</sub>**

40 CFR 60.48c(g)(2) establishes requirements for fuel usage monitoring and record keeping for new boilers.

3) **PM/ Opacity**

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.

4) **HAP**

40 CFR 63.7510, 7515, 7520, 7521, 7522, 7525, 7530, 7533, 7535, 7540, 7541, 7555, and 7560 establish monitoring and record keeping requirements for new and existing boilers.

iv. **Reporting**

**HAP**

40 CFR 63.7545 and 7550 establish reporting requirements for new and existing boilers.

v. **Testing**

1) **NO<sub>x</sub>**

The source is required to conduct compliance testing in accordance with Regulation 6.42 and the NO<sub>x</sub> RACT Plan.

2) **HAP**

40 CFR 63.7510, 7515, 7520, and 7521 establish testing requirements for new and existing boilers.

c. **Emission Unit U2 – Steam boilers – Boiler #4, #5, and #6**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Basis for Applicability
U2 – E4	One (1) boiler using coal as a primary fuel and natural gas as the secondary fuel, designated as Boiler #4, with a rated heat input capacity of 102 MMBtu/hr, make VOGT, model CL-VS, SN-11620. (1969)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 6.07, 6.42, 40 CFR 63, DDDDD, 40 CFR 64,	Regulation 5.00, 5.01, 5.20, 5.21, 5.22, 5.23 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which potentially could exceed the de minimis values.  Existing indirect heat exchangers for which was in being or under construction prior to April 19, 1972 are subject to Regulation 6.07.  New indirect heat exchangers with a capacity less than 250 MMBtu/hr for which commenced after April 9, 1972 are subject to Regulation 7.06.
U2-E5	One (1) boiler using coal as a primary fuel and natural gas as the secondary fuel, designated as Boiler #5, with a rated heat input capacity of 102 MMBtu/hr, make VOGT, model CL-VS, SN-11621. (1969)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 6.07, 6.42, 40 CFR 63, DDDDD, 40 CFR 64	Regulation 6.42 applies to the NO <sub>x</sub> emissions from all NO <sub>x</sub> emitting facilities located at major NO <sub>x</sub> source.  40 CFR 63, Subpart DDDDD establishes national emission limitations and work practice standards for HAPs emitted from industrial, commercial, and institutional boilers and process heaters located at major 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.
U2-E6	One (1) coal-fired boiler designated as Boiler #6, with a rated heat input capacity of 100 MMBtu/hr, make VOGT, model CL-VS, SN-17193. (1981)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 7.06, 6.42, 40 CFR 63, DDDDD, 40 CFR 64	
U2-E12	One (1) lime handling equipment used for lime injection systems, including one (1) lime storage silo, three	7.08	Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.

Emission Point	Description	Applicable Regulation	Basis for Applicability
	(3) surge hoppers, and three (3) lime feeders.		

ii. **Standards/Operating Limits**

1) **NO<sub>x</sub>**

- (a) Regulation 6.42, section 4.3 requires permit applicant for NO<sub>x</sub>-emitting facilities to propose RACT emission-limiting standards and RACT emission control technology. The NO<sub>x</sub> RACT Plan-Amendment 3 was adopted by the Air Pollution Control Board of Jefferson County on August 21, 2013.
- (b) Construction permit C-0148-1003-15-V allows an increase in the maximum plant-wide heat input capacity from 362 MMBtu/hr to 418 MMBtu/hr and the 10% annual capacity factor limit for Boiler #1 was removed. It was demonstrated that these modifications did not trigger PSD review.

2) **SO<sub>2</sub>**

- (a) Boiler #4 and #5 are subject to Regulation 6.07. The emission standard for SO<sub>2</sub> is determined in accordance with Regulation 6.07, section 4.1 as follows:  
 Total Heat Input Capacity = 204 MMBtu/hr  
 Natural Gas:  $7.72 * (204)^{-0.4106} = 0.87 \text{ lb/MMBtu}$   
 Coal:  $9.46 * (204)^{-0.374} = 1.29 \text{ lb/MMBtu}$
- (b) Boilers #6, the 100 MMBtu/hr Vogt boilers installed in 1982, are subject to Regulation 7.06. The emission standard for SO<sub>2</sub> is determined in accordance with Regulation 7.06, section 5.1.3.2 as follows:  
 Total Heat Input Capacity = 100 MMBtu/hr  
 Coal:  $9.46 * (100)^{-0.374} = 1.69 \text{ lb/MMBtu}$

3) **PM**

- (a) Boilers #4 and #5, the 102 MMBtu/hr Vogt boiler installed in 1969 is subject to Regulation 6.07. The emission standard for PM is determined in accordance with Regulation 6.07, section 3.1 as follows:

Total Heat Input Capacity = 204 MMBtu/hr

PM limit =  $0.9634 * (204)^{-0.2356} = 0.275$  lb/MMBtu

- (b) Boilers #6, the 100 MMBtu/hr Vogt boilers installed in 1982, are subject to Regulation 7.06. The emission standard for PM is determined in accordance with Regulation 7.06, section 4.1.4 as follows:

Total Heat Input Capacity = 100 MMBtu/hr

PM limit =  $1.919 * (100)^{-0.535} = 0.163$  lb/MMBtu

- (c) A one-time PM compliance demonstration has been performed for Boiler #4, 5, and 6 when it is combusting coal. The lb/MMBtu standard can be exceeded uncontrolled. Therefore, the baghouses must be utilized at all time when the boilers are combusting coal.
- (d) For the lime handling equipment, the emission standard for PM is determined in accordance with Regulation 7.08, section 3.1.2. Since the throughput is less than 1,000 lb/hr, PM limit for each piece of equipment is 2.34 lb/hr.
- (e) For the lime handling equipment, it has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled. Therefore there are no monitoring, record keeping, and reporting requirements with respect to the PM standards.

4) **Opacity**

Regulation 6.07, section 3.2 and Regulation 7.06, section 4.2 establish opacity standards for the boilers.

5) **TAC**

Regulation 5.20, 5.21, 5.22, and 5.23 established

requirements for Group I sources to demonstrate environmental acceptability. Medical Center Steam Plant submitted the TAC Environmental Acceptability Demonstration to the District and compliance with the STAR EA Goals was demonstrated. The coal-fired boilers have TAC emission standards for metal compounds 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 and controlled PTE is used as limit.

6) **HAP**

40 CFR 63.7495, 7500, and 7505 establish emission limits, work practice standards, and operating limits for new and existing boilers.

iii. **Monitoring and Record Keeping**

1) **NO<sub>x</sub>**

(a) NO<sub>x</sub> RACT Plan establishes monitoring and record keeping requirements for NO<sub>x</sub> emissions.

2) **PM**

In accordance with 40 CFR 64, Compliance Assurance Monitoring for Major Stationary Sources, MCSP is required to propose a CAM Plan for PM, based on current process and control device operating requirements and practices. The initial CAM Plan was received on July 15, 2004 and an updated CAM Plan was received on January 6, 2015. The CAM Plan establishes monitoring and record keeping requirements for coal-fired boilers at this plant.

3) **HAP**

40 CFR 63.7510, 7515, 7520, 7521, 7522, 7525, 7530, 7533, 7535, 7540, 7541, 7555, 7560 establish monitoring and record keeping requirements for new and existing boilers.

iv. **Reporting**

**HAP**

40 CFR 63.7545 and 7550 establish reporting requirements for new and existing boilers.

v. **Testing**

1) **NO<sub>x</sub>**

The source is required to conduct compliance testing in according with Regulation 6.42 and the NO<sub>x</sub> RACT Plan.

2) **HAP**

40 CFR 63.7510, 7515, 7520, and 7521 establish testing requirements for new and existing boilers.

d. **Emission Unit U3 – Ash handling and transfer equipment**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Basis for Applicability
E7-a	One (1) bottom ash hopper, make Lacle de. (1969)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09	Regulation 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which potentially could exceed the de minimis values.
E7-b	One (1) ash grinder, make United Conveyor. (1969)		
E7-c	One (1) sifter hopper, make United Conveyor. (1969)		Regulation 6.09 establishes the requirements for PM emission from existing processes that commences construction prior to September 1, 1976.
E7-d	One (1) ash silo, make United Conveyor, model 176B. (1969)		
E7-e	One (1) truck loading operation, make United Conveyor. (1969)		

i. **Standards/Operating Limits**

1) **PM**

- (a) The emission standard for PM is determined in accordance with Regulation 6.09, section 3.2:  
 Total ash throughput = 1.75 ton/hr  
 PM limit =  $4.10 \times (1.75)^{0.67} = 5.95$  lb/hr
- (b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 6.09 uncontrolled. Therefore there are no monitoring, record keeping, and reporting requirements with respect to the PM standards.

2) **Opacity**

Regulation 6.09, section 3.1 establishes an opacity standard of less than 20%.

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 is an insignificant activity per PTE. Insignificant activities are de minimis per Regulation 5.21, section 2.3.

e. **Emission Unit U4 – Emergency generators**

i. **Equipment**

Emission Point	Description	Applicable Regulation	Basis for Applicability
U4-E9	One (1) diesel fueled emergency generator rated at 1200 HP, make Caterpillar, model 339, equipped with a 1,000 gallon	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 40 CFR 63, Subpart ZZZZ,	Regulation 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23 establishes the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1TACs which potentially could exceed the de minimis values.

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
	internal diesel tank. <sup>2</sup> (1969)		40CFR63 Subpart ZZZZ establishes national emission limitations and operating limitations for HAP emitted from stationary RICE located at major and area sources of HAP emissions.
U4-E11	One (1) diesel fueled emergency generator rated at 2220 HP, make Onan, model KTTA50, equipped with a 7,000 gallon diesel tank. (model 1995, installed 2013)		

i. **Standards/Operating Limits**

1) **HAP**

40 CFR 63.6590 and 6640 establishes unit operation requirements for emergency generators.

2) **TAC**

Regulation 5.20, 5.21, 5.22, and 5.23 established requirements for Group I sources to demonstrate environmental acceptability. Medical Center Steam Plant submitted the TAC Environmental Acceptability Demonstration to the District and compliance with the STAR EA Goals was demonstrated.

f. **Emission Unit U5 – Coal handling equipment**

i. **Equipment:**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E10-a	One (1) truck unloading operation. (1969)	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09	Regulation 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23 establishes the requirements for Environmental Acceptability for TACs. The source is a
E10-b	One (1) conveyor		

<sup>2</sup> The associated internal storage tank for diesel fuel is exempt from District permitting requirements in accordance with Appendix A to Regulation 1.02, section 3.9.2.

Emission Point	Description	Applicable Regulation	Basis for Applicability
	used to transfer coals from truck hopper to receiver. (1969)		Group I company with Category 1TACs which potentially could exceed the de minimis values.  Regulation 6.09 establishes the requirements for PM emission from existing processes that commences construction prior to September 1, 1976.
E10-c	One (1) receiver. (1969)		
E10-d	One (1) bucket elevator. (1969)		
E10-e	One (1) conveyor used to transfer coals from bucket elevator to bunker. (1969)		
E10-f	One (1) coal storage bunker. (1969)		
E10-g	One (1) moving scale. (1969)		
E10-h	One (1) stoker hopper. (1969)		

ii. **Standards/Operating Limits**

1) **PM**

(a) The emission standard for PM is determined in accordance with Regulation 6.09, section 3.2:

$$\begin{aligned} \text{Total ash throughput} &= 19.82 \text{ ton/hr} \\ \text{PM limit} &= 4.10 * (19.82)^{0.67} = 30.33 \text{ lb/hr} \end{aligned}$$

(b) It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 6.09 uncontrolled. Therefore there are no monitoring, record keeping, and reporting requirements with respect to the PM lb/hr emission standards.

2) **Opacity**

Regulation 6.09, section 3.1 establishes an opacity standard of less than 20%.

3) **TAC**

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

**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:** N/A
- 4. **Operational Flexibility:** The source did not request any operational flexibility scenario in its Title V application.
- 5. **Compliance History:**

Date	Regulation Violated	Result
05/02/1995	Regulation 6.07, Section 3 for Opacity	Agreement
05/11/2007	Regulation 2.16, Section 5, failure to comply with Title V permit	Board Order 09/19/2007
10/13/2010	Regulation 2.16, Section 5, failure to comply with Title V permit	Board Order 07/20/2011
10/24/2013	Regulation 2.16, Section 5, failure to comply with Title V permit	Board Order 10/15/2014

6. **Calculation Methodology or Other Approved Method:**

For the coal-fired and natural gas-fired boilers, emission factors or control efficiencies determined by the performance tests shall be used for emission calculations. Emission factors from AP-42, 1.1 and 1.4 may be utilized if performance test are not available. Metal emission factors for coal-fired boilers were determined per equations in AP-42, 1.1-16 using PM emissions from stack tests and metal concentrations per coal samplings or flyash samplings, or directly came from AP-42, 1.1-18 if sampling data are not available. The following emission factors shall be used to calculate metal emissions for coal-fired boilers

unless newer emission factors are approved by the District:

Metal Emissions Factors for Coal-fired Boilers	CAS No.	Uncontrolled (lb/ton)	Controlled (lb/ton)	Emission Factor Sources
Antimony compounds	7440-36-0	3.31E-04	1.39E-05	AP-42, 1.1-16
Arsenic compounds	7440-38-2	2.76E-03	3.84E-05	AP-42, 1.1-16
Beryllium compounds	7440-41-7	4.67E-03	2.12E-05	AP-42, 1.1-16
Cadmium compounds	7440-43-9	2.76E-04	1.80E-06	Ash Samplings
Chromium VI	7440-47-3	1.02E-03	5.35E-05	AP-42, 1.1-16
Chromium III	16065-83-1	2.79E-03	1.47E-04	AP-42, 1.1-16
Cobalt compounds	7440-48-4	7.30E-04	3.18E-05	AP-42, 1.1-16
Lead compounds	7439-92-1	4.29E-03	6.74E-05	AP-42, 1.1-16
Manganese compounds	7439-96-5	2.77E-03	1.81E-05	Ash Samplings
Mercury compounds	7439-97-6	8.30E-05	8.30E-05	AP-42, 1.1-18
Nickel compounds	7440-02-0	2.25E-03	1.89E-04	AP-42, 1.1-16
Selenium compounds	7782-49-2	1.30E-03	1.30E-03	AP-42, 1.1-18

Emission factors for flyash silos are derived from the emission factor for cement supplement uploading to elevated storage silo pneumatically (3-05-011-17) from AP-42, 11.12, Concrete Batching, Table 2, PM = 3.14 lbs/ton, PM10 = PM2.5 = 1.10 lbs/ton (uncontrolled). The emission factors for flyash are adjusted per moisture content, per AP-42, 13.2.4, equation (1). The adjusted emission factor for silos and transfer bins are PM = 0.3493 lbs/ton; PM10 = PM2.5 = 0.1224 lbs/ton

Emission factors from AP-42, 11.19 shall be used for coal emission calculations for handling facilities.

## 7. Insignificant Activities

Description	Quan.	PTE (tpy)	Basis for Exemption
Cooling Towers for Unit 2 and Unit 3	6	0.68 PM <sub>10</sub>	Regulation 2.16, section 1.23
1,000 gallon diesel fuel storage tank used for 1,200 HP emergency generator U5-E9	1	0.01 VOC	Regulation 1.02, Appendix A
7,000 gallon diesel fuel storage tank used for 2220 HP emergency generator U5-E11	1	0.01 VOC	Regulation 1.02, Appendix A

- 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.