

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 to this facility.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
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
IA-1	Cooling Towers

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

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
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-C, 696-08-C, and revised NOx RACT Plan (Amendment 2 Add NOx limit for Boiler #1 and add average period for NOx limits).
N/A	O-0148-15-V	10/06/2015	8/20/2015	Renewal	Entire Permit	Scheduled permit renewal; Incorporation of Construction Permit 34050-12-C, 35728-12-C, C-0148-1000-14, C-0148-1003-15-V, and revised NOx RACT Plan (Amendment 3: Remove 10% seasonal capacity factor for Boiler #3 since a low NOx natural gas burner replaced the coal stoker.).
R1	O-0148-15-V (R1)	3/29/2016	N/A	Admin. Revision	Page 56	Incorporation of Construction Permit C-0148-1003-15-V (R1) to extend

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
						compliance date for HCl.
R2	O-0148-15-V (R2)	02/16/2017	N/A	Admin. Revision	Page 18, 21, 29, 30, and 54	Correct risk numbers in the Comment section of the Plantwide emission unit. Incorporate the newest amendment to NO _x -RACT plan (Additions of modified annual NO _x emission limit for Boiler #1 and Boiler #3. Addition of ozone season NO _x emission limit for Boiler #1 and Boiler #3.). Corrected PM and SO ₂ emission limits for boilers 2, 4 and 5
R3	O-0148-15-V(R3)	06/18/2018	04/26/2018	Significant Revision	Page 23, 24, 30, 31, and 34	Incorporation of minimum lime injection rates for each Boiler and an MMBtu/hr limit for Boiler #4 Corrected PM and SO ₂ emission limits for boilers #1 and #3.
				Admin Revision		Addition of calculation methodology for all equipment and pollutants, Updates to testing requirements, Addition of Attachment E for determination of benchmark ambient TAC concentration. Changing control device efficiencies in Attachment C as described in the Admin Change Document. Also, changing the minimum lime injection rate for Boiler #6 based on the December 2017 stack test. This test was not reviewed at the time of public notice and therefore the new lime injection rate was not included in the public comment version of the permit.
R4	O-0148-15-V (R4)	2/04/2019	12/20/2018	Significant Revision	Unit U2 Unit U4	Reword total heat input requirement for NO _x ; Clarify that Boiler 4 heat input limit and lime injection limits are for coal combustion only; Revise Cr (III) limits for U2; Remove 7.12 requirements for U4.

7. Construction Permit History since Last Title V Permit Renewal:

Permit No.	Effective Date	Description
244-08-C	7/24/2008	Modification to allow plantwide heat input capacity from 362 to 418 MMBtu/hr
34050-12-C	2/15/2012	Boiler #3: Installation of a natural gas burner to replace existing coal stoker
35728-12-C	11/6/2012	Installation of three (3) new baghouses one for each Boiler #4, 5, and 6
C-0148-1000-14	1/23/2015	Installation of one (1) 1,500 kW diesel emergency generator
C-0148-1003-15-V	8/5/2015	Installation of three (3) lime injection systems and modification of permit 244-08-C and 35728-12-C
C-0148-1003-15-V (R1)	3/29/2016	Installation of three (3) lime injection systems and modification of permit 244-08-C and 35728-12-C. Incorporation of approval of compliance date extension for HCl.

8. Application and Related Documents

Document Number	Date Received	Description
80752	12/06/2016	Email: Updated NOx RACT plan
80755	12/07/2016	Email: Re Updated NOx RACT plan
80827	12/13/2016	Email: Legal notice
80830	12/13/2016	Email: Public Notice on NOx RACT Plan
80826	12/14/2016	Hardcopy: NOx RACT 1 st Legal Notice
80827	12/13/2016	Email: NOx RACT 1 st Legal Notice
80828	12/14/2016	Hardcopy: Agreed Board order NOx RACT amendment 4 Louisville Medical Center

Document Number	Date Received	Description
80829	12/14/2016	Hardcopy: Agreed Board order NOx RACT amendment 4 Louisville Medical Center
80803	12/14/2016	Hardcopy: NOx RACT 1 st Legal Notice
81082	01/03/2017	Email: 2 nd Legal Notice
81081	01/03/2017	Hardcopy: NOx RACT 2 nd Legal Notice
81232	01/10/2017	Email: NOx RACT Plan
81264	01/11/2017	Email: LMV Amendment 4 NOx January 11 2017
81332	01/18/2017	Hardcopy: Board Order – Amendment 4-148
81615	01/31/2017	Email: Operating parameters for Boilers 4, 5, 6 and the data they were derived from
81608	02/02/2017	Hardcopy: 100A application for permit modification to include stack test results
81710	02/03/2017	Email: Notice of draft revision to include Administrative changes
81951	02/05/2017	Email: Initial corrections to draft permit O-0148-17-V
81820	02/13/2017	Email: The official copy of the boiler MACT test scheduled for January 2017
87699	04/05/2017	Email: Pressure drop monitoring to establish appropriate range for coal-fired boilers
87731, 87812, 87813, 88025, 88301, 88343	10/04/2017 - 10/19/2017	Emails: Boiler MACT NOCS correspondences
89855, 90262, 90435, 90437, 90662	1/2/2018 – 2/9/2018	Emails: Correspondences for supplementary information request for MACT requirements
90957, 91334	3/2/2018, 3/29/2018	Emails: Site-specific monitoring plan correspondences
91877, 92003	5/9/2018, 5/15/2018	Emails: Minimum lime injection rate for boiler #6 correspondences

9. Emission Summary:

Pollutant	District Calculated Actual Emissions (tpy) 2017 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	24.68	Yes
NO _x	150.04	Yes
SO ₂	384.59	Yes
PM ₁₀	17.42	No
VOC	1.30	No
Total HAPs	7.86	No
Single HAP > 1 tpy		
Hydrochloric Acid	4.97	Yes
Hydrogen Fluoride	2.09	No

10. Applicable Requirements:

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

11. Referenced MACT Federal Regulations:

40 CFR 63, Subpart DDDD National Emission Standards for Hazardous Air Pollutants 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

12. Referenced non-MACT Federal Regulations:

40 CFR 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR 64 Compliance Assurance Monitoring for Major Stationary Sources

II Regulatory Analysis

- Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
- 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):** This 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. **Plantwide**

MCSP is a Title V major source for NO_x, CO, SO₂, PM₁₀, 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_x, CO, SO₂, and particulate matter.

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.

Louisville Medical Center, Inc., Steam & Chilled Water Plant submitted the TAC Environmental Acceptability Demonstration to the District in December 2006, March 2007, March 2008, and August 2014. Compliance with the STAR EA Goals was demonstrated in the source's EA Demonstrations. Tier 4 AERMOD air dispersion modeling was performed for each emission unit that has non-de minimis TAC emissions. The District reviewed the EA Demonstrations submitted by the source. The following Tables 1 and 2 demonstrates that the carcinogen risk and non-carcinogen risk values, calculated using the District approved controlled PTE for each unit and the Tier 4 AERMOD model results from the source's EA Demonstration, comply with the STAR EA goals required in Regulation 5.21.

Table 1 Plantwide Risk Summary

Plantwide Summary	All existing & new		All new P/PE	
	Industrial Total R _C	3.01	< 75	0.997
Non-Ind. Total R _C	3.01	< 7.5	0.997	< 3.8
Industrial Max. R _{NC}	0.035	< 3.0		
Non-Ind. Max. R _{NC}	0.035	< 1.0		

Table 2 Individual Risk Values

		R _{NC} Total		U2-B4		U2-B5		U2-B6		U4-E11	
		Indus.	R _{NC}	Ind/Non-Ind		Ind/Non-Ind		Ind/Non-Ind		Ind/Non-Ind	
TAC	CAS #	R _{NC}	EA	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}	R _C	R _{NC}
Total R_C/ Max. R_{NC}		0.035	0	0.674		0.674		0.661		0.997	
Arsenic	7440-38-2	0.01	<3.0/1.0	0.13	0	0.13	0	0.13	0	0	0
Chromium hexavalent	7440-47-3	0.02	<3.0/1.0	0.5	0.005	0.5	0.005	0.49	0.01	0	0
Nickel	7440-02-0	0.03	<3.0/1.0	0.04	0.01	0.04	0.01	0.04	0.01	0	0
Diesel PM		0.00	<3.0/1.0	0	0	0	0	0	0	0.997	0.001

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:

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
U1 – E1	One (1) natural gas fired boiler with low NOx burners, designated as Boiler #1, with a rated heat input capacity of 56	1954, 2004	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 7.06, 6.42, 40CFR60 Subpart Dc,	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

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
	MMBtu/hr, make VOGT, model CL-VS, SN-7152.		40CFR63, DDDDD	potentially could exceed the de minimis values.
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 CL-VS, SN-9638.	1954	5.00, 5.01, 5.20, 5.21, 5.22, 5.23 6.07, 6.42, 40CFR63, DDDDD	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.
U1 – E3	One (1) natural gas-fired boiler with low NOx 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	Regulation 6.42 applies to the NOx emissions from all NOx emitting facilities located at major NOx source. 40 CFR 60, Subpart Dc establishes emission limitations and work practice standards of performance for small industrial, commercial, institutional steam generating units. 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.

ii. **Standards/Operating Limits**

(1) **HAP**

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

(2) **NOx**

- (a) Regulation 6.42, section 4.3 requires permit applicant for NOx-emitting facilities to propose RACT emission-limiting standards and RACT emission control technology. The NOx RACT Plan-Amendment 4 was adopted by the Air Pollution Control Board of Jefferson County on January 18, 2017. The company has agreed to

annual and ozone season NO_x emission limits for Boilers 1 and 3.

(3) **Opacity**

- (a) Regulation 6.07, section 3.2 and Regulation 7.06, section 4.2 establish opacity standards for the boilers.

(4) **PM**

- (a) Boiler #1 and #3 are subject to Regulation 7.06. The emission standards for PM are determined in accordance with Regulation 7.06, section 4 as the following:

Boiler #1:

Total Heat Input Capacity = 156 MMBtu/hr

PM limit = $1.919 * (156)^{-0.535} = 0.13 \text{ lb/MMBtu}$

Boiler #3:

Total Heat Input Capacity = 212 MMBtu/hr

PM limit = $1.919 * (212)^{-0.535} = 0.11 \text{ lb/MMBtu}$

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

(5) **SO₂**

- (a) Boiler #1 and #3 are subject to Regulation 7.06. In accordance with Regulation 7.06, section 5, the emission standard for SO₂ is determined as the following:

Boiler #1:

Total Heat Input Capacity = 156 MMBtu/hr

SO₂ limit = $7.722 * (156)^{-0.4106} = 0.97 \text{ lb/MMBtu}$

Boiler #3:

Total Heat Input Capacity = 212 MMBtu/hr

SO₂ limit = $7.722 * (212)^{-0.4106} = 0.86 \text{ lb/MMBtu}$

- (b) Boiler #2 is subject to Regulation 6.07. The emission standard for SO₂ is determined in accordance with Regulation 6.07, section 4.1 as follows:

$$\begin{aligned} \text{Total Heat Input Capacity} &= 168 \text{ MMBtu/hr} \\ \text{SO}_2 \text{ limit} &= 7.722 * (168)^{-0.4106} = 0.94 \text{ lb/MMBtu} \end{aligned}$$

(6) **TAC**

- (a) Regulation 5.00, 5.01, 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. According to Regulation 5.21, section 2.7, TAC emissions from natural gas fired boilers are de minimis.

iii. **Monitoring and Recordkeeping**

(1) **HAP**

- (a) 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.

(2) **NO_x**

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

(3) **SO₂**

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

iv. **Reporting**

(1) **HAP**

- (a) 40 CFR 63.7545 and 7550 establish reporting requirements for new and existing boilers.

v. **Testing**

(1) **HAP**

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

(2) **NO_x**

- (a) The source is required to conduct compliance testing in according with Regulation 6.42 and the NO_x RACT Plan.

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

i. Equipment

P/PE	Description	Install Date	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.
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	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 – 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	Regulation 6.42 applies to the NO _x emissions from all NO _x emitting facilities located at major NO _x 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

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
				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 – E12	One (1) lime handling equipment used for lime injection systems, including one (1) lime storage silo, three (3) surge hoppers, and three (3) lime feeders.	2015	7.08	Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976.

ii. **Standards/Operating Limits**

(1) **HAP**

- (a) 40 CFR 63, Subpart DDDDD establishes emission limitations, work practice standards, and operating limits for boilers.
- (b) According to Table 7 to 40 CFR 63, Subpart DDDDD, the site-specific minimum sorbent injection rate operating limit and the boiler operating capacity limit are established based on emissions test results performed on the boilers on January 17, 2017. .
- (c) It has been demonstrated that the hydrochloric acid standards for the coal-fired boilers cannot be exceeded uncontrolled if the calcium carbonate injection rate of the lime injection systems meets the requirement of 40 CFR 63, Subpart DDDDD.

(2) **NOx**

- (a) Regulation 6.42 through the NOx RACT Plan (Amendment 4) approved by the Board on January 18, 2017 establishes NOx emission standards.
- (b) Construction permit C-0148-1003-15-V requires all the boilers in U1 and U2 to limit the combined total heat input capacity to not exceed 418 MMBtu/hr in order to avoid NSR.

(3) **Opacity**

- (a) Regulation 6.07, section 3.2 and Regulation 7.06, section 4.2 establish opacity standards for the boilers.

(4) **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:

$$\begin{aligned} \text{Total Heat Input Capacity} &= 204 \text{ MMBtu/hr} \\ \text{PM limit} &= 0.9634 * (204)^{-0.2356} = 0.239 \text{ lb/MMBtu} \end{aligned}$$

- (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:

$$\begin{aligned} \text{Total Heat Input Capacity} &= 100 \text{ MMBtu/hr} \\ \text{PM limit} &= 1.919 * (100)^{-0.535} = 0.163 \text{ lb/MMBtu} \end{aligned}$$

- (c) 40 CFR 63.7500(a)(1) establishes PM emission standard for coal fired boilers.
- (d) In order to demonstrate compliance with the Regulation 6.07, 7.06, and 40 CFR 63, Subpart DDDDD PM emission standards, 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.
- (e) 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.

(5) **SO₂**

- (a) Boiler #4 and #5 are subject to Regulation 6.07. The emission standard for SO₂ is determined in accordance with Regulation 6.07, section 4.1 as follows:

Total Heat Input Capacity = 204 MMBtu/hr
 Natural Gas: $7.72 * (204)^{-0.4106} = 0.80$ lb/MMBtu
 Coal: $9.46 * (204)^{-0.374} = 1.20$ lb/MMBtu

- (b) Boilers #6, the 100 MMBtu/hr Vogt boilers installed in 1982, are subject to Regulation 7.06. The emission standard for SO₂ is determined in accordance with Regulation 7.06, section 5.1.3.2 as follows:

Total Heat Input Capacity = 100 MMBtu/hr
 Coal: $9.46 * (100)^{-0.374} = 1.69$ lb/MMBtu

(6) **TAC**

- (a) Regulation 5.00, 5.01, 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.

iii. **Monitoring and Record Keeping**

(1) **HAP**

- (a) 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.

(2) **NO_x**

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

(3) **PM**

- (a) 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.

iv. **Reporting**

(1) **HAP**

- (a) 40 CFR 63.7545 and 7550 establish reporting requirements for new and existing boilers.

v. **Testing**

(1) **HAP**

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

(2) **NOx**

- (a) The source is required to conduct compliance testing in according with Regulation 6.42 and the NOx RACT Plan.

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

i. **Equipment**

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
E7-a	One (1) bottom ash hopper, make Laclede.	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		
E7-d	One (1) ash silo, make United	1969		

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
	Conveyor, model 176B.			commences construction prior to September 1, 1976.
E7-e	One (1) truck loading operation, make United Conveyor.	1969		

ii. **Standards/Operating Limits**

(1) **Opacity**

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

(2) **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

(3) **TAC**

- (a) 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. 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**

P/PE	Description	Install Date	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 internal diesel tank.	1969	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

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
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	2013		the de minimis values. 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.

ii. **Standards/Operating Limits**

(1) **HAP**

- (a) 40 CFR 63.6590 and 6640 establishes unit operation requirements for emergency generators.

(2) **TAC**

- (a) Regulation 5.00, 5.01, 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.
- (b) As required by Regulation 5.21, section 4.3 TAC emissions from the 2,200 HP emergency generator (E11) meet the STAR EA Goals with the 122 hours of operation limit established in the permit. TAC emissions from the 1,200 HP emergency generator (E9) are de minimis with the hours of operation limit per PTE.

f. **Emission Unit U5 – Coal Handling**

i. **Equipment**

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
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 Group I
E10-b	One (1) conveyor used to transfer coals from truck hopper to	1969		

P/PE	Description	Install Date	Applicable Regulation	Basis for Applicability
	receiver.			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) Opacity

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

(2) PM

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

Total ash throughput = 19.82 ton/hr
 PM limit = $4.10 \times (19.82)^{0.67} = 30.33$ lb/hr

(3) TAC

- (a) 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.
- (b) The coal handling and transfer equipment are insignificant activities, which are de minimis per Regulation 5.21, section 2.3.

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. **Alternative Operating Scenarios:** The source did not request any operational flexibility scenario in its Title V application
5. **Compliance History:**

Date	Regulation Violated	Settlement
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
6/5/2013	Regulation 2.16, Section 5, failure to comply with Title V permit	Agreement 6/14/2013
7/30/2013	Regulation 2.03, construction without permit	Agreement 2/10/2014
10/24/2013	Regulation 2.16, Section 5, failure to comply with Title V permit	Board Order 10/15/2014
1/26/2015	Regulation 2.16, Section 5, failure to comply with Title V permit	Board Order 8/19/2015

6. Calculation Methodology or Other Approved Method:

Unit U1: Steam boilers - Boiler #1, Boiler #2, and Boiler #3

Unit 1 Natural Gas Combustion Emission Factors for Boiler #1 and Boiler #3

Emission Point	Pollutant	Natural Gas Emission Factor (lb/10 ⁶ scf)		Emission Factor Source
		Uncontrolled	Controlled	
E1	CO	84	84	AP-42 Table 1.4-1
	NH ₃	3.2	3.2	WebFIRE, EPA
	NO _x	100	50	AP-42 Table 1.4-1
	PM total	0.52	0.52	Roy Huntley, EPA
E3	PM condensable	0.32	0.32	Roy Huntley, EPA
	PM ₁₀ filterable	0.2	0.2	Roy Huntley, EPA
	PM _{2.5} filterable	0.11	0.11	Roy Huntley, EPA
	SO ₂	0.6	0.6	AP-42 Table 1.4-2

Emission Point	Pollutant	Natural Gas Emission Factor (lb/10 ⁶ scf)		Emission Factor Source
		Uncontrolled	Controlled	
	VOC	5.5	5.5	AP-42 Table 1.4-2

The owner or operator shall calculate emissions from natural gas combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb}/10^6 \text{ scf})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of natural gas combusted (10⁶ scf)

Unit 1 Natural Gas Combustion HAP/TAC Emission Factors for Boiler #1 and Boiler #3

Emission Source	Individual HAP/TAC	Natural Gas Emission Factor (lb/10 ⁶ scf)	Emission Factor Source
E1 E3	2-Methylnaphthalene (91-57-6)	2.4E-05	AP-42, 1.4-3
	3-Methylchloranthrene (56-49-5)	1.8E-06	AP-42, 1.4-3
	DMBA (57-97-6)	1.6E-05	AP-42, 1.4-3
	Acenaphthene (83-32-9)	1.8E-06	AP-42, 1.4-3
	Acenaphthylene (208-96-8)	1.8E-06	AP-42, 1.4-3
	Anthracene (120-12-7)	2.4E-06	AP-42, 1.4-3
	Benz(a)anthracene (56-55-3)	1.8E-06	AP-42, 1.4-3
	Benzene (71-43-2)	2.1E-03	AP-42, 1.4-3
	Benzo(a)pyrene (50-32-8)	1.2E-06	AP-42, 1.4-3
	Benzo(b)fluoranthene (205-99-2)	1.8E-06	AP-42, 1.4-3
	Benzo(g,h,i)perylene (191-24-2)	1.2E-06	AP-42, 1.4-3
	Benzo(k)fluoranthene (205-82-3)	1.8E-06	AP-42, 1.4-3
	Chrysene (218-01-9)	1.8E-06	AP-42, 1.4-3
	Dibenzo(a,h)anthracene (53-70-3)	1.2E-06	AP-42, 1.4-3
	Dichlorobenzene (25321-22-6)	1.2E-03	AP-42, 1.4-3
	Fluoranthene (206-44-0)	3.0E-06	AP-42, 1.4-3
	Fluorene (86-73-7)	2.8E-06	AP-42, 1.4-3
	Formaldehyde (50-00-0)	7.5E-02	AP-42, 1.4-3
	Hexane (110-54-3)	1.80	AP-42, 1.4-3
	Indeno(1,2,3-cd)pyrene (193-39-5)	1.8E-06	AP-42, 1.4-3
Naphthalene (91-20-3)	6.1E-04	AP-42, 1.4-3	
Phenanathrene (83-01-8)	1.7E-05	AP-42, 1.4-3	
Pyrene (129-00-0)	5.0E-06	AP-42, 1.4-3	
Toluene (108-88-3)	3.4E-03	AP-42, 1.4-3	

Emission Source	Individual HAP/TAC		Natural Gas Emission Factor	
			(lb/10 ⁶ scf)	
	Arsenic	(7440-38-2)	2.0E-04	AP-42, 1.4-4
	Beryllium	(7440-41-7)	1.2E-05	AP-42, 1.4-4
	Cadmium	(7440-43-9)	1.1E-03	AP-42, 1.4-4
	Chromium VI	(7440-47-3)	1.4E-03	AP-42, 1.4-4
	Cobalt	(7440-48-4)	8.4E-05	AP-42, 1.4-4
	Lead	(7439-92-1)	5.0E-04	AP-42, 1.4-2
	Manganese	(7439-96-5)	3.8E-04	AP-42, 1.4-4
	Mercury	(7439-97-6)	2.6E-04	AP-42, 1.4-4
	Nickel	(7440-02-0)	2.1E-03	AP-42, 1.4-4
	Selenium	(7782-49-2)	2.4E-05	AP-42, 1.4-4

The owner or operator shall calculate emissions from natural gas combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb}/10^6 \text{ scf})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of natural gas combusted (10⁶ scf)

Unit 1 Natural Gas Combustion Emission Factors for Boiler #2

Emission Point	Pollutant	Natural Gas Emission Factor		Emission Factor Source
		(lb/10 ⁶ scf)		
		Uncontrolled	Controlled	
E2	CO	84	84	AP-42 Table 1.4-1
	NH ₃	3.2	3.2	WebFIRE, EPA
	NO _x	100	100	AP-42 Table 1.4-1
	PM total	0.52	0.05	Roy Huntley, EPA
	PM condensable	0.32	0.03	Roy Huntley, EPA
	PM ₁₀ filterable	0.2	0.02	Roy Huntley, EPA
	PM _{2.5} filterable	0.11	0.01	Roy Huntley, EPA
	SO ₂	0.6	0.6	AP-42 Table 1.4-2
	VOC	5.5	5.5	AP-42 Table 1.4-2

The owner or operator shall calculate emissions from natural gas combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb}/10^6 \text{ scf})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of natural gas combusted (10^6 scf)

Boiler E2 has an associated multi-cyclone collector (C2) with a District pre-approved control efficiency of 90% for PM.

Unit 1 Natural Gas Combustion HAP/TAC Emission Factors for Boiler #2

Emission Source	Individual HAP/TAC	Natural Gas Emission Factor (lb/ 10^6 scf)		Emission Factor Source
		Uncontrolled	Controlled	
E2	2-Methylnaphthalene (91-57-6)	2.4E-05	2.4E-05	AP-42, 1.4-3
	3-Methylchloranthrene (56-49-5)	1.8E-06	1.8E-06	AP-42, 1.4-3
	DMBA (57-97-6)	1.6E-05	1.6E-05	AP-42, 1.4-3
	Acenaphthene (83-32-9)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Acenaphthylene (208-96-8)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Anthracene (120-12-7)	2.4E-06	2.4E-06	AP-42, 1.4-3
	Benz(a)anthracene (56-55-3)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Benzene (71-43-2)	2.1E-03	2.1E-03	AP-42, 1.4-3
	Benzo(a)pyrene (50-32-8)	1.2E-06	1.2E-06	AP-42, 1.4-3
	Benzo(b)fluoranthene (205-99-2)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Benzo(g,h,i)perylene (191-24-2)	1.2E-06	1.2E-06	AP-42, 1.4-3
	Benzo(k)fluoranthene (205-82-3)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Chrysene (218-01-9)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Dibenzo(a,h)anthracene (53-70-3)	1.2E-06	1.2E-06	AP-42, 1.4-3
	Dichlorobenzene (25321-22-6)	1.2E-03	1.2E-03	AP-42, 1.4-3
	Fluoranthene (206-44-0)	3.0E-06	3.0E-06	AP-42, 1.4-3
	Fluorene (86-73-7)	2.8E-06	2.8E-06	AP-42, 1.4-3
	Formaldehyde (50-00-0)	7.5E-02	7.5E-02	AP-42, 1.4-3
	Hexane (110-54-3)	1.80	1.80	AP-42, 1.4-3
	Indeno(1,2,3-cd)pyrene (193-39-5)	1.8E-06	1.8E-06	AP-42, 1.4-3
	Naphthalene (91-20-3)	6.1E-04	6.1E-04	AP-42, 1.4-3
	Phenanathrene (83-01-8)	1.7E-05	1.7E-05	AP-42, 1.4-3
	Pyrene (129-00-0)	5.0E-06	5.0E-06	AP-42, 1.4-3
	Toluene (108-88-3)	3.4E-03	3.4E-03	AP-42, 1.4-3
	Arsenic (7440-38-2)	2.0E-04	2.0E-5	AP-42, 1.4-4
	Beryllium (7440-41-7)	1.2E-05	1.2E-6	AP-42, 1.4-4
	Cadmium (7440-43-9)	1.1E-03	1.2E-04	AP-42, 1.4-4
	Chromium VI (7440-47-3)	1.4E-03	1.4E-04	AP-42, 1.4-4
	Cobalt (7440-48-4)	8.4E-05	8.4E-06	AP-42, 1.4-4
	Lead (7439-92-1)	5.0E-04	5.0E-05	AP-42, 1.4-2
Manganese (7439-96-5)	3.8E-04	3.8E-05	AP-42, 1.4-4	

Emission Source	Individual HAP/TAC	Natural Gas Emission Factor (lb/10 ⁶ scf)		Emission Factor Source
		Uncontrolled	Controlled	
	Mercury (7439-97-6)	2.6E-04	2.6E-04	AP-42, 1.4-4
	Nickel (7440-02-0)	2.1E-03	2.1E-04	AP-42, 1.4-4
	Selenium (7782-49-2)	2.4E-05	2.4E-05	AP-42, 1.4-4

The owner or operator shall calculate emissions from natural gas combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb}/10^6 \text{ scf})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of natural gas combusted (10⁶ scf)

Boiler E2 has an associated multi-cyclone collector (C2) with a District pre-approved control efficiency of 90% for metal HAPs. Mercury is not a solid and would not be controlled by the multi-cyclone. Selenium is mostly a gas at high temperatures and would not be controlled by the multi-cyclone.

Unit U2: Steam boilers - Boiler #4, Boiler #5, and Boiler #6

Unit 2 Natural Gas Combustion Emission Factors for Boiler #4 and Boiler #5

Emission Point	Pollutant	Natural Gas Emission Factor (lb/10 ⁶ scf)		Emission Factor Source
		Uncontrolled	Controlled	
E4	CO	84	84	AP-42, 1.4-1
	NH ₃	3.2	3.2	WebFIRE, EPA
	NO _x	100	100	AP-42, 1.4-1
	PM total	0.52	2.60E-03	Roy Huntley, EPA
E5	PM condensable	0.32	1.60E-03	Roy Huntley, EPA
	PM ₁₀ filterable	0.2	1.00E-03	Roy Huntley, EPA
	PM _{2.5} filterable	0.11	5.50E-04	Roy Huntley, EPA
	SO ₂	0.6	0.6	AP-42, 1.4-2
	VOC	5.5	5.5	AP-42, 1.4-2

The owner or operator shall calculate emissions from natural gas combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb}/10^6 \text{ scf})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of natural gas combusted (10^6 scf)

Boilers E4, E5, and E6 are each associated with a multi-cyclone collector (C4, C5, C6) and a baghouse (C10, C11, C12) with a combined control efficiency of 99.8% for PM.

Unit 2 Natural Gas Combustion HAP/TAC Emission Factors for Boiler #4 and Boiler #5

Emission Source	Individual HAP/TAC	Natural Gas Emission Factor (lb/ 10^6 scf)		Emission Factor Source	
		Uncontrolled	Controlled		
E4	2-Methylnaphthalene (91-57-6)	2.4E-05	2.4E-05	AP-42, 1.4-3	
	3-Methylchloranthrene (56-49-5)	1.8E-06	1.8E-06	AP-42, 1.4-3	
	DMBA (57-97-6)	1.6E-05	1.6E-05	AP-42, 1.4-3	
	Acenaphthene (83-32-9)	1.8E-06	1.8E-06	AP-42, 1.4-3	
	Acenaphthylene (208-96-8)	1.8E-06	1.8E-06	AP-42, 1.4-3	
	Anthracene (120-12-7)	2.4E-06	2.4E-06	AP-42, 1.4-3	
	Benz(a)anthracene (56-55-3)	1.8E-06	1.8E-06	AP-42, 1.4-3	
	Benzene (71-43-2)	2.1E-03	2.1E-03	AP-42, 1.4-3	
	Benzo(a)pyrene (50-32-8)	1.2E-06	1.2E-06	AP-42, 1.4-3	
	Benzo(b)fluoranthene (205-99-2)	1.8E-06	1.8E-06	AP-42, 1.4-3	
	Benzo(g,h,i)perylene (191-24-2)	1.2E-06	1.2E-06	AP-42, 1.4-3	
	Benzo(k)fluoranthene (205-82-3)	1.8E-06	1.8E-06	AP-42, 1.4-3	
	E5	Chrysene (218-01-9)	1.8E-06	1.8E-06	AP-42, 1.4-3
		Dibenzo(a,h)anthracene (53-70-3)	1.2E-06	1.2E-06	AP-42, 1.4-3
		Dichlorobenzene (25321-22-6)	1.2E-03	1.2E-03	AP-42, 1.4-3
		Fluoranthene (206-44-0)	3.0E-06	3.0E-06	AP-42, 1.4-3
		Fluorene (86-73-7)	2.8E-06	2.8E-06	AP-42, 1.4-3
		Formaldehyde (50-00-0)	7.5E-02	7.5E-02	AP-42, 1.4-3
		Hexane (110-54-3)	1.80	1.80	AP-42, 1.4-3
		Indeno(1,2,3-cd)pyrene (193-39-5)	1.8E-06	1.8E-06	AP-42, 1.4-3
Naphthalene (91-20-3)		6.1E-04	6.1E-04	AP-42, 1.4-3	
Phenanathrene (83-01-8)		1.7E-05	1.7E-05	AP-42, 1.4-3	
Pyrene (129-00-0)		5.0E-06	5.0E-06	AP-42, 1.4-3	
Toluene (108-88-3)		3.4E-03	3.4E-03	AP-42, 1.4-3	
Arsenic (7440-38-2)	2.0E-04	1.0E-06	AP-42, 1.4-4		
Beryllium (7440-41-7)	1.2E-05	6.0E-08	AP-42, 1.4-4		

Emission Source	Individual HAP/TAC	Natural Gas Emission Factor (lb/10 ⁶ scf)		Emission Factor Source
		Uncontrolled	Controlled	
	Cadmium (7440-43-9)	1.1E-03	5.5E-06	AP-42, 1.4-4
	Chromium VI (7440-47-3)	1.4E-03	7.0E-06	AP-42, 1.4-4
	Cobalt (7440-48-4)	8.4E-05	4.2E-07	AP-42, 1.4-4
	Lead (7439-92-1)	5.0E-04	2.5E-06	AP-42, 1.4-2
	Manganese (7439-96-5)	3.8E-04	1.9E-06	AP-42, 1.4-4
	Mercury (7439-97-6)	2.6E-04	2.6E-04	AP-42, 1.4-4
	Nickel (7440-02-0)	2.1E-03	1.1E-05	AP-42, 1.4-4
	Selenium (7782-49-2)	2.4E-05	2.4E-05	AP-42, 1.4-4

The owner or operator shall calculate emissions from natural gas combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb}/10^6 \text{ scf})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of natural gas combusted (10⁶ scf)

Boilers E4, E5, and E6 are each associated with a multi-cyclone collector (C4, C5, C6) and a baghouse (C10, C11, C12) with a combined control efficiency of 99.8% for metal HAPs. Mercury is not a solid and would not be controlled by the multi-cyclone. Selenium is mostly a gas at high temperatures and would not be controlled by the multi-cyclone.

Unit 2 Coal Combustion Emission Factors for Boiler #4, Boiler #5, and Boiler #6

Emission Point	Pollutant	Coal Emission Factor (lb/ton)		Determination Method
		Uncontrolled	Controlled	
E4	CO	5	5	AP-42, 1.1-3
	NO _x	11	11	AP-42, 1.1-3
	PM total	66.54	0.97	AP-42, 1.1-4,5
E5	PM condensable	0.54	0.54	AP-42, 1.1-5
	PM ₁₀ filterable	13.74	0.63	AP-42, 1.1-4
E6	PM _{2.5} filterable	13.74	0.63	AP-42, 1.1-4
	SO ₂	32.338S ¹	32.338S	AP-42, 1.1-3
	VOC	0.05	0.05	AP-42, 1.1-19

¹ Emission factor would be calculated by multiplying the weight percent sulfur in the coal by the numerical value preceding S. Sulfur emission factor was calculated from AP-42 1.1-3 and a coal sulfur content of 0.85%.

The owner or operator shall calculate the emissions from coal combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of coal burned (tons)

The uncontrolled emission factor for PM condensable was calculated from AP-42, 1.1-5 emission factor for ‘All pulverized coal-fired boilers’ and a coal heat content of 27 MMBtu/ton as reported by the company. PM total, PM10 total, and PM2.5 total emission factors are the sum of PM filterable and PM condensable values. A controlled emission factor of 0.016 lb/MMBtu for PM and metallic TAC are based on a stack test performed 3/13/2014 (DM 63125). PM condensable was not included in stack testing results it is assumed to be uncontrolled. PM total, PM10 total, and PM2.5 total emission factors are the sum of PM filterable and PM condensable values. Emission factor for SO₂ would be calculated by multiplying the weight percent sulfur in the coal by the numerical value preceding S.

Unit 2 Coal Combustion HAP/TAC Emission Factors for Boiler #4, Boiler #5, and Boiler #6

Emission Source	Individual HAP/TAC	Coal Emission Factor (lb/ton)		Emission Factor Source
		Uncontrolled	Controlled	
E4 E5 E6	Acetaldehyde (75-07-0)	5.7E-04	5.7E-04	AP-42, 1.1-14
	Acetophenone (98-86-2)	1.5E-05	1.5E-05	AP-42, 1.1-14
	Acrolein (Propenal) (107-02-8)	2.9E-04	2.9E-04	AP-42, 1.1-14
	Benzene (71-43-2)	1.3E-03	1.3E-03	AP-42, 1.1-14
	Benzyl Chloride (100-44-7)	7.0E-04	7.0E-04	AP-42, 1.1-14
	Biphenyl (92-52-4)	1.7E-06	1.7E-06	AP-42, 1.1-13
	Bis(2-ethylhexyl)phthalate (DEHP) (DOP) (117-81-7)	7.3E-05	7.3E-05	AP-42, 1.1-14
	Bromoform (75-25-2)	3.9E-05	3.9E-05	AP-42, 1.1-14
	Carbon disulfide (75-15-0)	1.3E-04	1.3E-04	AP-42, 1.1-14
	2-Chloroacetophenone (532-27-4)	7.0E-06	7.0E-06	AP-42, 1.1-14
	Chlorobenzene (108-90-7)	2.2E-05	2.2E-05	AP-42, 1.1-14
	Chloroform (67-66-3)	5.9E-05	5.9E-05	AP-42, 1.1-14
	Chlorine (7782-50-5)	0.03267	0.03267	AP-42, 1.1-14
	Cumene (98-82-8)	5.6E-06	5.6E-06	AP-42, 1.1-14
	Dimethyl sulfate (77-78-1)	4.8E-05	4.8E-05	AP-42, 1.1-14
	2,4-Dinitrotoluene (121-14-2)	2.8E-07	2.8E-07	AP-42, 1.1-14
	Ethyl benzene (100-41-4)	9.4E-05	9.4E-05	AP-42, 1.1-14
	Ethyl chloride (75-00-3)	4.2E-05	4.2E-05	AP-42, 1.1-14
	Ethylene dichloride (107-06-2)	4.0E-05	4.0E-05	AP-42, 1.1-14
	Ethylene dibromide (106-93-4)	1.2E-06	1.2E-06	AP-42, 1.1-14

Emission Source	Individual HAP/TAC	Coal Emission Factor (lb/ton)		Emission Factor Source
		Uncontrolled	Controlled	
	Formaldehyde (50-00-0)	2.4E-04	2.4E-04	AP-42, 1.1-14
	Hexane (110-54-3)	6.7E-05	6.7E-05	AP-42, 1.1-14
	Isophorone (78-59-1)	5.8E-04	5.8E-04	AP-42, 1.1-14
	Hydrochloric acid (7647-01-0)	1.2	0.3	AP-42, 1.1-15
	Hydrogen fluoride (7664-39-3)	0.15	0.15	AP-42, 1.1-15
	Methyl bromide (74-83-9)	1.6E-04	1.6E-04	AP-42, 1.1-14
	Methyl chloride (74-87-3)	5.3E-04	5.3E-04	AP-42, 1.1-14
	Methyl hydrazine (60-34-4)	1.7E-04	1.7E-04	AP-42, 1.1-14
	Methyl methacrylate (80-62-6)	2.0E-05	2.0E-05	AP-42, 1.1-14
	Methyl-tert-butylether (1634-04-4)	3.5E-05	3.5E-05	AP-42, 1.1-14
	Methylene chloride (75-09-2)	2.9E-04	2.9E-04	AP-42, 1.1-14
	Naphthalene (91-20-3)	1.3E-05	1.3E-05	AP-42, 1.1-13
	Phenol (108-95-2)	1.6E-05	1.6E-05	AP-42, 1.1-14
	Propionaldehyde (123-38-6)	3.8E-04	3.8E-04	AP-42, 1.1-14
	Styrene (100-42-5)	2.5E-05	2.5E-05	AP-42, 1.1-14
	Sulfuric Acid	0.43S	0.43S	TRI Report
E4	Tetrachloroethylene (Perc) (127-18-4)	4.3E-05	4.3E-05	AP-42, 1.1-14
E5	Toluene (108-88-3)	2.4E-04	2.4E-04	AP-42, 1.1-14
E6	Xylene (1330-20-7)	3.7E-05	3.7E-05	AP-42, 1.1-14
	Vinyl Acetate (108-05-4)	7.6E-06	7.6E-06	AP-42, 1.1-14
	Antimony compounds (7440-36-0)	3.31E-04	1.39E-05	AP-42, 1.1-16; Coal Analysis
	Arsenic compounds (7440-38-2)	2.76E-03	3.84E-05	AP-42, 1.1-16; Coal Analysis
	Beryllium compounds (7440-41-7)	5.36E-03	2.12E-05	AP-42, 1.1-16; Coal Analysis
	Cadmium compounds (7440-43-9)	2.78E-04	1.82E-06	Ash Analysis
E4	Chromium VI (18540-29-9)	2.61E-09	1.71E-11	AP-42, 1.1-18; Coal Analysis
E5	Chromium III (7440-47-3)	8.58E-07	5.62E-09	AP-42, 1.1-18; Coal Analysis
E6	Chromium (7440-47-3)	2.98E-03	1.64E-04	AP-42, 1.1-16; Coal Analysis
	Cobalt compounds (7440-48-4)	1.86E-03	3.07E-05	AP-42, 1.1-16; Coal Analysis

Emission Source	Individual HAP/TAC	Coal Emission Factor (lb/ton)		Emission Factor Source
		Uncontrolled	Controlled	
	Cyanide compounds (57-12-5)	2.50E-03	2.50E-03	AP-42, 1.1-14
	Lead compounds (7439-92-1)	3.77E-03	6.74E-05	AP-42, 1.1-16; Coal Analysis
	Manganese compounds (7439-96-5)	4.9E-02	4.09E-04	AP-42, 1.1-14; AP-42, 1.1-16
	Mercury compounds (7439-97-6)	1.85E-06	1.85E-06	Coal Analysis
	Nickel compounds (7440-02-0)	2.21E-03	1.89E-04	AP-42, 1.1-16; Coal Analysis
	Selenium compounds (7782-49-2)	1.32E-04	1.32E-04	Coal Analysis

The owner or operator shall calculate the emissions from coal combustion based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of coal burned (tons)

The controlled emission factor for Hydrochloric Acid (HCL) is based on the average controlled value for Boiler 4, 5, and 6 of 75% removal from stack test performed 1/18/2017 (DM 84093). Emission factor for sulfuric acid would be calculated by multiplying the weight percent sulfur in the coal by the numerical value preceding. Metallic HAP/TAC content of the coal is derived from Louisville Medical Steam Plant’s coal sample testing performed 4/22/2014, 1/23/2014, 10/17/2014, 1/15/2015, and 4/14/2015 (DM 84410). PPM content averages calculated 6/6/2017 (DM 84571)

Unit U3: Ash handling and transfer equipment

Unit 3 Ash Handling and Transfer PM Emission Factors

Equipment	PM	Emission Factor (lb/ton)		Emission Factor Source
		Uncontrolled	Controlled	
E7-a	PM	0.0048	0.0048	AP-42, 11.12-2
	PM ₁₀	0.0028	0.0028	
	PM _{2.5}	0.0028	0.0028	
E7-b	PM	0.064	0.064	AP-42, 11.12-2
	PM ₁₀	0.017	0.017	
	PM _{2.5}	0.02	0.02	

E7-c	PM	0.0069	0.0069	AP-42, 11.12-2
	PM ₁₀	0.0033	0.0033	
	PM _{2.5}	0.0033	0.0033	
E7-d	PM	0.349	0.002 ²	AP-42, 11.12-2
	PM ₁₀	0.122	0.001	
	PM _{2.5}	0.122	0.001	
E7-e	PM	0.124	0.124	AP-42, 11.12-2
	PM ₁₀	0.034	0.034	
	PM _{2.5}	0.034	0.034	

The owner or operator shall calculate the emissions from ash handling and transfer operations based on throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb/ton Ash})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of ash handled (tons)

PM/PM₁₀/PM_{2.5} emission factors represent total PM, filterable PM and condensable PM combined. Emission point E7-d, Ash Silo, is controlled by bin vent filters and a baghouse with a combined control efficiency of 99.8% for PM.

The owner or operator shall account for the insignificant activity PM/PM₁₀/PM_{2.5} emissions from ash handling when totaling the annual plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM/PM₁₀/PM_{2.5} emissions as the annual emissions. District approved PTE is as follows:

U3 PTE Emissions	Uncontrolled (ton/year)	Controlled (ton/year)
PM	0.217	0.79
PM 10	0.71	0.23
PM 2.5	0.71	0.23

Unit 3 Ash Handling and Transfer HAP/TAC Emission Factors

Emission Source	Individual HAP/TAC	Emission Factor (lb/ton ash)		Emission Factor Source
		Uncontrolled	Controlled	
E7-a	Antimony (7440-36-0)	1.37E-04	8.94E-07	Ash Analysis
	Arsenic compounds	1.17E-02	7.36E-05	Ash Analysis

² Emission point E7-d, Ash Silo, is controlled by bin vent filters and a baghouse with a combined control efficiency of 99.8% for PM.

Emission Source	Individual HAP/TAC	Emission Factor (lb/ton ash)		Emission Factor Source
		Uncontrolled	Controlled	
E7-b	(7440-38-2)			
	Beryllium (7440-41-7)	2.90E-04	1.90E-06	Ash Analysis
E7-c	Cadmium compounds (7440-43-9)	2.78E-04	1.82E-06	Ash Analysis
E7-d	Chromium VI (7440-47-3)	1.01E-03	6.64E-06	Ash Analysis
E7-e	Chromium III (16065-83-1)	6.53E-03	4.28E-05	Ash Analysis
	Cobalt (7440-48-4)	8.12E-04	5.31E-06	Ash Analysis
	Lead (7439-92-1)	2.09E-03	1.37E-05	Ash Analysis
	Manganese (7439-96-5)	2.77E-03	1.81E-05	Ash Analysis
	Mercury (7439-97-6)	1.32E-05	1.32E-05	Ash Analysis
	Nickel compounds (7440-02-0)	2.24E-02	1.47E-04	Ash analysis
	Selenium (7782-49-2)	4.36E-04	4.36E-04	Ash Analysis

The owner or operator shall calculate the emissions from ash handling and transfer operations based on throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E_{HAP} = (X)(EF \text{ lb/ton}) (1 \text{ ton}/2000 \text{ lb})$$

Where: E_{HAP} = emissions (tons)
 X = the amount of ash handled (tons)

Metallic HAP/TAC content of the ash is derived from Louisville Medical Steam Plant’s bottom ash sample testing performed 12/4/2012, 1/21/2013, and 10/20/2012 (DM 84410) and District-approved plantwide PTE from 6/8/2015 (71996).

The owner or operator shall account for the insignificant activity HAP/TAC emissions from ash handling when totaling the annual plant-wide emissions. Since the emissions are minor the owner or operator may use the potential HAP/TAC emissions as the annual emissions. District PTE is as follows:

U3 PTE Emissions	Uncontrolled (ton/year)	Controlled (ton/year)
Antimony	4.5E-06	1.6E-06
Arsenic	3.8E-04	1.4E-04
Beryllium	9.5E-06	3.5E-06
Cadmium	9.1E-06	3.4E-06
Chromium VI	3.3E-05	1.2E-05
Chromium III	2.1E-04	7.9E-05

U3 PTE Emissions	Uncontrolled (ton/year)	Controlled (ton/year)
Cobalt	2.7E-05	9.8E-06
Lead	6.9E-05	2.5E-05
Manganese	9.1E-05	3.3E-05
Mercury	4.3E-07	1.6E-07
Nickel	7.4E-04	2.7E-04
Selenium	1.4E-05	5.2E-06

Unit U4: Emergency Generators

Unit 4 Diesel Fuel Combustion Emission Factors

Emission Source	Pollutant	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)	Emission Factor Source
E9	CO	1.16E-01	AP-42, 3.4-1
	NO _x	4.38E-01	AP-42, 3.4-1
	PM	1.37E-02	AP-42, 3.4-2
E11	PM ₁₀	7.85E-03	AP-42, 3.4-2
	PM _{2.5}	7.85E-03	AP-42, 3.4-2
	SO ₂	6.9E-03	AP-42, 3.4-1
	VOC	1.23E-02	AP-42, 3.4-1

The owner or operator shall calculate the emissions from diesel generators based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X)(EF \text{ lb/gallon})(1 \text{ ton}/2,000 \text{ lb})$$

Where: E = emissions (tons) annually

X = the amount of diesel fuel (gallons) combusted annually

Unit 4 Diesel Fuel HAP/TAC Emission Factors

Emission Source	Individual HAP/TAC	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)	Emission Factor Source
E9	Benzene (71-43-2)	1.06E-04	AP 42, 3.4-3
	Toluene (108-88-3)	3.85E-05	AP 42, 3.4-3
	Xylenes (1330-20-7)	2.64E-05	AP 42, 3.4-3
	Formaldehyde (50-00-0)	1.08E-05	AP 42, 3.4-3
E11	Acetaldehyde (75-07-0)	3.45E-06	AP 42, 3.4-3
	Acrolein (107-02-8)	1.08E-06	AP 42, 3.4-3
	Naphthalene (91-20-3)	1.78E-05	AP 42, 3.4-4

Emission Source	Individual HAP/TAC	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)	Emission Factor Source
	Benzo(a)anthracene (56-55-3)	8.52E-08	AP 42, 3.3-2
	Chrysene (218-01-9)	2.10E-07	AP 42, 3.3-2
	Benzo(b)fluoranthene (205-99-2)	1.52E-07	AP 42, 3.3-2
	Benzo(k)fluoranthene (207-08-9)	2.99E-08	AP 42, 3.3-2
	Benzo(a)pyrene (50-32-8)	3.52E-08	AP 42, 3.3-2
	Indeno(1,2,3-cd)pyrene (193-39-5)	5.6E-08	AP 42, 3.3-2
	Dibenz(a,h)anthracene (53-70-3)	4.74E-08	AP 42, 3.3-2

$$E_{HAP} = (X)(EF \text{ lb/gallon})(1 \text{ ton}/2,000 \text{ lb})$$

Where: E_{HAP} = HAP emissions (tons) annually

X = the amount of diesel fuel (gallons) combusted annually

Unit 4 Diesel Fuel Tank Emission Factors

Emission Source	Pollutant	Diesel Fuel Emission Factor (lb/gallon)	Emission Factor Source
E9 E11	VOC	4.52E-05	TANKS 4.0.9d

$$E_{VOC} = (EF \text{ lb/gallon}) (X) (1 \text{ ton}/2,000 \text{ lb})$$

Where: E_{VOC} = VOC emissions (tons) annually

X = the amount of diesel fuel (gallons) throughput annually

Unit U5: Coal handling and transfer equipment

Unit 5 Coal Handling and Transfer Emission Factors

Emission Source	Pollutant	Emission Factor (lb/ton coal throughput)	Emission Factor Source
E10-a,	PM	0.0069	AP-42 Table 11.12-2
E10-b,	PM ₁₀	0.0033	AP-42 Table 11.19.2-2
	PM _{2.5}	0.0033	AP-42 Table 11.19.2-2
E10-c,	Antimony compounds (7440-36-0)	3.31E-04	MCSP Coal Analysis ³
E10-d,	Arsenic compounds (7440-38-2)	2.76E-03	Coal Analysis
	Beryllium compounds (7440-41-7)	5.3E-03	Coal Analysis
E10-e,	Cadmium compounds (7440-43-9)	2.78E-04	Ash Analysis

³ Metallic HAP/TAC content of the coal is derived from Louisville Medical Steam Plant's coal sample testing performed 4/22/2014, 1/23/2014, 10/17/2014, 1/15/2015, and 4/14/2015 (DM 84410). PPM content averages calculated 6/6/2017 (DM 84571) and District-approved plantwide PTE from 6/8/2015 (71996) .

Emission Source	Pollutant	Emission Factor (lb/ton coal throughput)	Emission Factor Source
E10-f,	Chromium VI (18540-29-9)	3.54E-03	Ash Analysis
	Chromium III (7440-47-3)	6.53E-03	Ash Analysis
E10-g,	Cobalt compounds (7440-48-4)	1.86E-03	Coal Analysis
E10-h	Lead compounds (7439-92-1)	3.77E-03	Coal Analysis
	Manganese compounds (7439-96-5)	7.52E-03	Ash Analysis
	Mercury compounds (7439-97-6)	1.85E-06	Coal Analysis
	Nickel compounds (7440-02-0)	2.12E-03	Coal Analysis
	Selenium compounds (7782-49-2)	1.32E-04	Coal Analysis

The owner or operator shall calculate the emissions from coal handling and transfer based on coal throughput and emission factors stated in the table above unless another method is approved in writing by the District.

$$E = (X) (EF \text{ lb/ton}) (1 \text{ ton}/2000 \text{ lb.})$$

Where: E = emissions (tons)

X = the amount of coal throughput (tons)

The owner or operator shall account for the minor emissions from coal handling and transfer equipment (E10-a through E10-h) when totaling the annual plant-wide emissions. Since the emissions are minor the owner or operator may use the sum of potential emissions as the annual emissions. District approved PTE is as follows:

U5 PTE Emissions	Uncontrolled (ton/year)
PM	2.7
PM ₁₀	1.3
PM _{2.5}	1.3
Antimony	5.44E-06
Arsenic	5.44E-06
Beryllium	9.26E-06
Cadmium	1.15E-05
Chromium VI	4.18E-05
Chromium III	2.69E-04
Cobalt	1.91E-05
Lead	9.26E-06
Manganese	1.14E-04
Mercury	7.62E-08
Nickel	3.59E-05

U5 PTE Emissions	Uncontrolled (ton/year)
Selenium	5.44E-04

Unit I.A.-1: Cooling Tower for Unit 1 and Unit 2

Unit I.A.-1 Cooling Tower PM Emission Factors

Emission Source	Pollutant	Flow rate (gal/min)	Drift (%)	TDS (ppm)	Emission Factor Source
IE-1	PM/PM ₁₀ /PM _{2.5}	7,000 each	0.001%	1388	AP-42, 13.4
IE-2	PM/PM ₁₀ /PM _{2.5}	9,000	0.001%	1388	AP-42, 13.4
IE-3	PM/PM ₁₀ /PM _{2.5}	15,000	0.002%	1388	AP-42, 13.4

The owner or operator shall annual calculate the PM/PM₁₀ emissions from the cooling towers based on recirculating water throughput (1000 gallon/yr) and emission factors stated in the table below unless another method is approved in writing by the District.

$$E_{PM/PM_{10}} = (X)(\text{water flow rate, gal/min})(60 \text{ min/hr})(8.34 \text{ lb/gal water})(\text{TDS}/10^6 \text{ ppm})(\text{drift } \%) (1 \text{ ton}/2000 \text{ lb})$$

Where: E_{PM} = PM/PM₁₀ emissions (ton) during a year

X = operating time (hr/yr)

TDS = total dissolved solids (ppm)

The owner or operator shall account for the insignificant activity PM/PM₁₀ emissions from the cooling towers when totaling the annual plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM/PM₁₀ emissions as the annual emissions. District approved PTE is as follows:

IA-1 PTE Emissions	Uncontrolled (ton/year)
PM/PM ₁₀ /PM _{2.5}	1.81

7. Insignificant Activities

Equipment	Quan.	PTE (tpy)	Regulation Basis
Imperial Industries lime storage silo with vent filter (2015) (See Emission Unit U2 – E12).	1	PM ₁₀ = 0.22	Regulation 1.02, Appendix A
Imperial Industries lime storage	3		Regulation 1.02, Appendix A

Equipment	Quan.	PTE (tpy)	Regulation Basis
silos feeder surge hopper with vent filter (2015) (See Emission Unit U2 – E12)			
Imperial Industries lime storage silo feeder conveyor (2015) (See Emission Unit U2 – E12)	3		Regulation 1.02, Appendix A
Lacle de bottom ash hopper (1969) (See Emission Unit U3 – E7-a)	1	PM ₁₀ = 0.011	Regulation 1.02, Appendix A
United Conveyor ash grinder (1969) (See Emission Unit U3 – E7-b)	1	PM ₁₀ = 0.068	Regulation 1.02, Appendix A
United Conveyor sifter hopper (1969) (See Emission Unit U3 – E7-c)	1	PM ₁₀ = 0.013	Regulation 1.02, Appendix A
United Conveyor model 176B ash silo (1969) (See Emission Unit U3 – E7-d)	1	PM ₁₀ = 0.483	Regulation 1.02, Appendix A
United Conveyor truck loading operation (1969) (See Emission Unit U3 – E7-e)	1	PM ₁₀ = 0.136	Regulation 1.02, Appendix A
Cooling Towers for Unit 1 and Unit 2 (See IA-1 Emission Unit)	6	PM ₁₀ = 0.68	Regulation 2.16, section 1.23
1,000 gallon diesel fuel storage tank used for 1,200 HP emergency generator (See Emission Unit U4-E9)	1	VOC = 0.01	Regulation 1.02, Appendix A
7,000 gallon diesel fuel storage tank used for 2220 HP emergency generator (See Emission Unit U4-E11)	1	VOC = 0.01	Regulation 1.02, Appendix A
Coal handling truck unloading operation. (1969) (See Emission Unit U5 – E10-a)	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A
Coal handling conveyor used to transfer coals from truck hopper to receiver. (1969) (See Emission Unit U5 – E10-b)	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A
Coal handling receiver. (1969) (See Emission Unit U5 – E10-c)	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A
Coal handling bucket elevator. (1969) (See Emission Unit U5 – E10-d)	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A
Coal handling conveyor used to transfer coals from bucket elevator	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A

Equipment	Quan.	PTE (tpy)	Regulation Basis
to bunker. (1969) (See Emission Unit U5 – E10-e)			
Coal handling coal storage bunker. (1969) (See Emission Unit U5 – E10-f)	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A
Coal handling moving scale. (1969) (See Emission Unit U5 – E10-g)	1	PM ₁₀ = 0.163	Regulation 1.02, Appendix A
Coal handling stoker hopper. (1969) (See Emission Unit U5 – E10-h)	1	PM ₁₀ = 0.163	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.

8. Basis of Regulation Applicability for IA units

a. Emission Unit IA1 – Cooling Towers for Unit 2 and Unit 3

i. Equipment

Emission Point	Description	Applicable Regulation	Basis for Applicability
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Emission Point	Description	Applicable Regulation	Basis for Applicability
IE-1	Four Marley cooling towers model 86-54CS/874CS (1954)	6.09	Regulation 6.09 establishes the requirements for PM emission from existing processes that commences construction prior to September 1, 1976.
IE-2	One Marley cooling tower model F457-6.0-01 (1969)	6.09	Regulation 7.08 establishes the PM and Opacity standards for new processes that commences construction after September 1, 1976.
IE-3	One Baltimore Air Coil by Composite Cooling Solutions, model 2FT-2636-150-P6 (1981)	7.08	

ii. **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) The PM emission standards for equipment IE-1 and IE-2 are determined in accordance with Regulation 6.09, section 3.2.

IE-1 Water throughput = 1,751 ton/hr

IE-1 PM limit = $55.0 \times (1,751)^{0.11} - 40 = 85.1$ lb/hr

IE-2 Water throughput = 2,252 ton/hr

IE-2 PM limit = $55.0 \times (2,252)^{0.11} - 40 = 88.6$ lb/hr

- (b) The PM emission standard for equipment IE-3 is determined in accordance with Regulation 7.08, section 3.1.2.

Water throughput = 3,753 ton/hr

PM limit = $17.31 \times (3,753)^{0.16} = 64.6$ lb/hr