

US EPA ARCHIVE DOCUMENT



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029**

Plantwide Applicability Limit Permit  
for  
U.S. Capitol Power Plant  
25 E Street S.E.  
Washington, D.C. 20003

EPA PAL Permit Number  
EPA-R3-PAL-001

Pursuant to the provisions of the Clean Air Act, Subchapter I, Part C (42 U.S.C. Section 7470, *et. seq*) and the regulations found at the Code of Federal Regulations Title 40, Section 52.21, the United States Environmental Protection Agency (EPA) is issuing a Plantwide Applicability Limit (PAL) permit to the Capitol Power Plant (CPP), located at 25 E Street S.E., Washington, D.C. 20003.

The design, construction and operation of the Facility shall be subject to the attached permit conditions and permit limitations and in accordance with the permit application which was deemed complete on May 2, 2012, and any subsequently submitted supporting material. Failure to comply with any condition or term set forth in this permit is subject to enforcement action pursuant to Section 113 of the Clean Air Act.

This permit shall become effective 30 days after the date of signature unless review is requested on the permit under 40 C.F.R. § 124.19, in which case the permit shall be effective when provided by 40 C.F.R. § 124.19(f). The permit shall remain in effect until it is surrendered to EPA or expires.

This permit does not relieve CPP from the obligation to comply with applicable state and federal air pollution control rules and regulations.

\_\_\_\_\_/s/\_\_\_\_\_  
Diana Esher, Director  
Air Protection Division

\_\_\_\_\_/1/23/13\_\_\_\_\_  
Date of Issuance

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1. General Requirements

- a. This Plantwide Applicability Limit (PAL) will be effective 30 days after January 23, 2013 and shall expire on January 23, 2023. (40 C.F.R. 52.21(aa)(4)(i)(f), 40 C.F.R. 52.21(aa)(8)(i))
- b. Renewal of the PAL - If the owner or operator submits a timely and complete application to renew the PAL in accordance with the requirements of 40 C.F.R. 52.21(aa)(10), then the PAL shall not expire at the end of the PAL effective period. It shall remain in effect until a revised PAL permit is issued by the EPA Region III Air Protection Division Director (the Director). (40 C.F.R. 52.21(aa)(10)(ii))
- i. The owner or operator shall submit a timely and complete application to the Director to request renewal of the PAL. A timely application is one that is submitted at least 6 months prior to, but not earlier than 18 months from, the date of permit expiration. (40 C.F.R. 52.21(aa)(10)(ii))
- ii. The application to renew the PAL permit shall meet the requirements of 40 C.F.R. 52.21(aa)(10)(iii). (40 C.F.R. 52.21(aa)(10)(iii))
- c. Expiration of the PAL – If the PAL authorized by this permit is not renewed in accordance with the procedures in subsection (b) of this section and 40 C.F.R. 52.21(aa)(10), the PAL shall expire at the end of the PAL effective period and the requirements in 40 C.F.R. 52.21(aa)(9)(i) through (v) shall apply. (40 C.F.R. 52.21(aa)(9))
- d. Reopening of the PAL - During the PAL effective period, the Director must reopen the PAL permit to:
- i. Correct typographical/calculation errors made in setting the PAL or reflect a more accurate determination of emissions used to establish the PAL. (40 C.F.R. 52.21(aa)(8)(ii)(a)(1)) ;
- ii. Reduce the PAL if the owner or operator creates creditable emissions reductions for use as offsets under an approved non-attainment NSR program (40 C.F.R. 52.21(aa)(8)(ii)(a)(2)); and
- iii. Revise the PAL to reflect an increase in the PAL if the Administrator decides to increase the PAL as provided under 40 C.F.R. 52.21(aa)(11). (40 C.F.R. 52.21(aa)(8)(ii)(a)(3))
- A. The owner or operator shall submit a complete application to request an increase in the PAL limit for a PAL major modification. Such application shall identify the emissions unit(s) contributing to the increase in emissions so as to cause the source's emissions to equal or exceed the PAL.
- B. As part of the application, the owner or operator shall demonstrate that the sum of the baseline actual emissions of the small emissions units, plus the sum of the baseline actual emissions of the significant and major emissions units assuming application of BACT equivalent controls, plus the sum of the allowable

emissions of the new or modified emissions unit(s) exceeds the PAL. The level of control that would result from BACT equivalent controls on each significant or major emissions unit shall be determined by conducting a new BACT analysis at the time the application is submitted, unless the emissions unit is currently required to comply with a BACT or LAER requirement that was established within the preceding 10 years. In such a case, the assumed control level for that emissions unit shall be equal to the level of BACT or LAER with which that emissions unit must currently comply.

- C. The owner or operator shall obtain a major NSR permit for all emissions unit(s) identified in subparagraph A of this paragraph, regardless of the magnitude of the emissions increase resulting from them (that is, no significant levels apply). These emissions unit(s) shall comply with any emissions requirements resulting from the major NSR process, even though they have also become subject to the PAL or continue to be subject to the PAL.
  - D. The increased PAL level shall be effective on the day any emissions unit that is part of the PAL major modification becomes operational and begins to emit the PAL pollutant.
- iv. The Director shall have discretion to reopen the PAL permit for the following:
- A. Reduce the PAL to reflect newly applicable Federal requirements with compliance dates after the PAL effective date (40 C.F.R 52.21(aa)(8)(b)(1));
  - B. Reduce the PAL consistent with any other requirement, that is enforceable as a practical matter, and that the District of Columbia (the District) may impose on the facility under the State Implementation Plan (40 C.F.R 52.21(aa)(8)(b)(2)); and
  - C. Reduce the PAL if the Director determines that a reduction is necessary to avoid causing or contributing to a NAAQS or PSD increment violation, or to an adverse impact on an air quality related value that has been identified for a Federal Class I area by a Federal Land Manager and for which information is available to the general public (40 C.F.R 52.21(aa)(8)(b)(3)).
- v. Except for the permit reopening in paragraph (d)(i) of this section for the correction of typographical/calculation errors that do not increase the PAL level, all other reopenings shall be carried out in accordance with the public participation requirements of 40 C.F.R. 52.21(aa)(5) (40 C.F.R 52.21(aa)(8)(c)).
- e. Any physical change or change in the method of operation at the facility will not be a major modification for PM<sub>10</sub>, NO<sub>x</sub>, and GHGs, will not have to be approved under 40 C.F.R 52.21 for PM<sub>10</sub>, NO<sub>x</sub>, and GHGs, and is not subject to the provisions 40 C.F.R. 52.21(r)(4) (restrictions on relaxing enforceable emission limitations that the major stationary source used to avoid applicability of the major NSR program) for PM<sub>10</sub>, NO<sub>x</sub>, and GHGs, so long as the owner or

operator maintains its total source-wide emissions of PM<sub>10</sub>, NO<sub>x</sub>, and GHGs (on a CO<sub>2</sub>e basis) below the PAL limits established in Section 2.

- i. The owner or operator must continue to comply with all other applicable Federal and District requirements, emission limitations, and work practice standards, including any obligation to obtain permits prior to constructing, modifying and operating any emissions unit.

2. Emissions Limitations

- a. Total plantwide PM<sub>10</sub> emissions from the facility shall be less than 42.8 tons per year, based on a 12-month rolling total. (40 C.F.R. 52.21(aa)(1), 40 C.F.R. 52.21(aa)(4))
  - i. Emissions shall include fugitive emissions, to the extent quantifiable, from all emissions units that emit or have the potential to emit PM<sub>10</sub>. (40 C.F.R. 52.21(aa)(4)(i)(d))
  - ii. Emission calculations for compliance purposes must include emissions from startups, shutdowns, and malfunctions. (40 C.F.R. 52.21(aa)(7)(iv))
- b. Total plantwide NO<sub>x</sub> emissions from the facility shall be less than 248.1 tons per year, based on a 12-month rolling total. (40 C.F.R. 52.21(aa)(1), 40 C.F.R. 52.21(aa)(4))
  - i. Emissions shall include fugitive emissions, to the extent quantifiable, from all emissions units that emit or have the potential to emit NO<sub>x</sub>. (40 C.F.R. 52.21(aa)(4)(i)(d))
  - ii. Emission calculations for compliance purposes must include emissions from startups, shutdowns, and malfunctions. (40 C.F.R. 52.21(aa)(7)(iv))
- c. Total plantwide GHG emissions from the facility shall be less than 203,816 tons per year on a CO<sub>2</sub>e basis, based on a 12-month rolling total. (40 C.F.R. 52.21(aa)(1), 40 C.F.R. 52.21(aa)(4))
  - i. Emissions shall include fugitive emissions, to the extent quantifiable, from all emissions units that emit or have the potential to emit GHGs. (40 C.F.R. 52.21(aa)(4)(i)(d))
  - ii. Emission calculations for compliance purposes must include emissions from startups, shutdowns, and malfunctions. (40 C.F.R. 52.21(aa)(7)(iv))
- d. For each month during the PAL effective period after the first 12 months of establishing the PAL, the owner or operator shall show that the sum of the monthly emissions from each emissions unit under the PAL for the previous 12 consecutive months is less than the PAL. For each month during the first 11 months from the PAL effective date, the owner or operator shall show that the sum of the preceding monthly emissions from the PAL effective date for each emissions unit under the PAL is less than the PAL. (40 C.F.R. 52.21(aa)(4)(i)(a))

3. Monitoring System for Existing Emissions Units

- a. The owner or operator shall monitor PM<sub>10</sub>, GHGs, and NO<sub>x</sub> emissions from all units that existed at the time of issuance of this permit in accordance with the provisions under this section and 40 C.F.R. 52.21(aa)(12).
- b. In order to demonstrate compliance with the PM<sub>10</sub> PAL in subsection 2.a, the owner or operator shall monitor the following:
  - i. Coal Car Burners – The owner or operator shall monitor the hours of operation on a monthly basis through equipment usage logs.
    - A. Monthly emissions from the coal car burners shall be calculated using an emissions factor of 3.3 lbs PM<sub>10</sub> per 1,000 gallons of oil (AP-42 Section 1.3, May 2010), a fuel usage rate of 54 gallons per hour, and the total monthly fuel throughput during a given month calculated using the monthly total hours of operation.
  - ii. Air Compressor – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter.
    - A. Monthly emissions from the air compressor shall be calculated using an emissions factor of 0.31 lbs PM<sub>10</sub> per MMBtu (AP-42 Section 3.3, October 1996), a heating value of 140,000 Btus per gallon of oil, a fuel usage rate of 5.3 gallons per hour, and the total monthly fuel throughput during a given month calculated using the monthly total hours of operation.
  - iii. Emergency Fire Pump – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter.
    - A. Monthly emissions from the emergency fire pump shall be calculated using an emissions factor of  $5.07 \times 10^{-4}$  lb PM<sub>10</sub> per hp-hr, the rating of the fire pump, and the hours of operation during a given month.
  - iv. Emergency Generator – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter.
    - A. Monthly emissions from the emergency generator shall be calculated using an emissions factor of 0.0573 lb PM<sub>10</sub> per MMBtu (AP-42 Section 3.4, October 1996), a heating value of 140,000 Btus per gallon of oil, a fuel usage rate of 104 gallons per hour, and the total monthly fuel throughput during a given month calculated using the monthly total hours of operation.
  - v. Boilers 1 and 2 – The owner or operator shall monitor the amount of fuel consumed on a continuous basis.

- A. When burning coal, monthly emissions from boilers 1 and 2 shall be calculated using emissions factors developed from PM<sub>10</sub> stack testing required under Section 5, the most recent heating value determined through quarterly coal sampling, and the monthly total coal throughput. Until such time that stack testing is performed and site-specific emissions factors are developed emissions shall be calculated using an emissions factor of 0.072 lb PM<sub>10 filit.</sub> per ton of coal (AP-42 Section 1.1, September 1998) and 0.04 lb PM<sub>condensable</sub> per MMBtu (AP-42 Section 1.1, September 1998).
- B. When burning natural gas, monthly emissions from boilers 1 and 2 shall be calculated using emissions factors developed from PM<sub>10</sub> stack testing required under Section 5, a heating value of 1020 Btu per scf, and the monthly total natural gas throughput. Until such time that stack testing is performed and site-specific emissions factors are developed, emissions from boilers 1 and 2 shall be calculated an emissions factor of 7.6 lb PM<sub>10</sub> per MMscf (AP-42 Section 1.4, July 1998).
- vi. Boilers 3 through 7 – The owner or operator shall monitor the amount of fuel consumed on a continuous basis.
  - A. When burning fuel oil, monthly emissions from boilers 3 through 7 shall be calculated using an emissions factor of 2.3 lb per 1,000 gallons of oil (AP-42 Section 1.3, May 2012) and the total monthly oil throughput during a given month.
  - B. When burning natural gas, monthly emissions from boilers 3 through 7 shall be calculated using an emissions factor of 7.6 lb per MMscf of natural gas (AP-42 Section 1.4, July 1998) and the total monthly natural gas throughput.
- vii. Ash Handling – The owner or operator shall monitor the ash throughput on a monthly basis through monitoring of monthly coal throughput.
  - A. Monthly emissions from ash handling shall be calculated using the following equation:

$$PM_{10} = (EF \times Ash \times Coal \times HHV \times N \times (1 - \eta)) / HI \times 2000$$

Where:

PM <sub>10</sub>	=	Monthly Emissions of PM <sub>10</sub>	(tons)
EF	=	PM <sub>10</sub> emission factor (6.66 E -5)	(lb/ton)
ash	=	Ash throughput (0.6)	(ton/hr)
Coal	=	Monthly coal throughput in Boilers 1 and 2	(tons)
HHV	=	Heating value from quarterly sampling	(MMBtu/ton)



N	=	Number of transfers (1)	(unitless)
$\eta$	=	Baghouse control efficiency (98%)	(%)
HI	=	Rated heat input of Boilers 1 and 2 on coal (160 MMBtu/hr)	

viii. Coal Handling – The owner or operator shall monitor the amount of coal delivered for each coal delivery.

A. Monthly emissions from coal handling shall be calculated using the following equation:

$$PM_{10} = EF \times \text{Coal} \times N \times (1/2000)$$

Where:

$PM_{10}$	=	Monthly emissions of $PM_{10}$	(tons)
EF	=	$PM_{10}$ emission factor (8.18 E -4)	(lb/ton)
Coal	=	Amount of coal delivered during a given month	(tons)
N	=	Number of transfers (3)	(unitless)

ix. Cooling Towers – The owner or operator shall monitor the water flow rate, for each cooling tower, the total dissolved solids (TDS), and hours of operation once per week.

A. Emissions from the cooling towers shall be calculated using the following equation:

$$PM_{10} = \frac{TDS \times 3.78 \times CWFR \times L_{draft} \times T \times 60}{453.6 \times 10^6 \times \rho_{H2O}}$$

Where:

$PM_{10}$	=	Monthly emissions of $PM_{10}$	(tons)
TDS	=	Total dissolved solids concentration	(ppm)
CWFR	=	Circulating water flow rate	(gpm)
$L_{draft}$	=	Draft loss factor (0.8865)	(lb/1,000 gal)
T	=	Time	(hours)
$\rho_{H2O}$	=	Density of water (8.345)	(lb/gal)

c. In order to demonstrate compliance with the  $NO_x$  limit in Section 2.b, the owner or operator shall monitor the following:

i. Coal Car Burners – The owner or operator shall monitor the hours of operation on a monthly basis through equipment usage logs.

A. Monthly emissions from the coal car burners shall be calculated using an emissions factor of 20 lbs  $NO_x$  per 1,000 gallons of oil (AP-42 Section 1.3, May

2010), a fuel usage rate of 54 gallons per hour, and the total monthly fuel throughput during a given month calculated using the monthly total hours of operation.

- ii. Air Compressor – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter.
  - A. Monthly emissions from the air compressor shall be calculated using an emissions factor of 4.41 lbs NO<sub>x</sub> per MMBtu (AP-42 Section 3.3, October 1996), a heating value of 140,000 Btus per gallon of oil, a fuel usage rate of 5.3 gallons per hour, and the total monthly fuel throughput during a given month calculated using the monthly total hours of operation.
- iii. Emergency Fire Pump – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter.
  - A. Monthly emissions from the emergency fire pump shall be calculated using an emissions factor of 0.01 lb NO<sub>x</sub> per hp-hr, the rating of the fire pump, and the hours of operation during a given month.
- iv. Emergency Generator – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter.
  - A. Monthly emissions from the emergency generator shall be calculated using an emissions factor of 3.2 lb NO<sub>x</sub> per MMBtu (AP-42 Section 3.4, October 1996), a heating value of 140,000 Btus per gallon of oil, a fuel usage rate of 104 gallons per hour, and the total monthly fuel throughput during a given month calculated using the monthly total hours of operation.
- v. Boilers 1 and 2 - The emission rate of Boilers 1 and 2 shall be monitored continuously and recorded as a monthly average using a CEMS. Data for the East Stack CEMS shall be used for Boilers 1 and 2.
  - A. CEMS must comply with applicable Performance Specifications found in 40 C.F.R. part 60, appendix B.
  - B. CEMS must sample, analyze and record data at least every 15 minutes while the emissions unit is operating.
  - C. CEMS must comply with applicable monitoring requirements in 40 C.F.R. part 60.13.
- vi. Boilers 3 through 7 – The emissions rate of Boilers 3 through 7 shall be monitored continuously and recorded as a monthly average using a CEMS. Data for the West Stack CEMS shall be used for Boilers 3 through 7.

- A. CEMS must comply with applicable Performance Specifications found in 40 C.F.R. part 60, appendix B.
  - B. CEMS must sample, analyze and record data at least every 15 minutes while the emissions unit is operating.
  - C. CEMS must comply with applicable monitoring requirements in 40 C.F.R. part 60.13.
- d. In order to demonstrate compliance with the GHG limit in Section 2.c, the owner or operator shall monitor the following:
- i. Coal Car Burners – The owner or operator shall monitor the hours of operation on a monthly basis through equipment usage logs. Monthly fuel throughput shall be calculated using a fuel usage rate of 54 gallons per hour and the monthly hours of operation.
  - ii. Air Compressor – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter. Monthly fuel throughput shall be calculated using a fuel usage rate of 5.3 gallons per hour and the monthly hours of operation.
  - iii. Emergency Fire Pump – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter. Monthly fuel throughput shall be calculated using a fuel usage rate of 15 gallons per hour and the monthly hours of operation.
  - iv. Emergency Generator – The owner or operator shall monitor the hours of operation on a continuous basis through the use of an hour meter. Monthly fuel throughput shall be calculated using a fuel usage rate of 104 gallons per hour and the monthly hours of operation.
  - v. Boilers 1 and 2 - The owner or operator shall monitor the amount of fuel consumed on a continuous basis.
    - A. When burning coal, monthly emissions from boilers 1 and 2 shall be calculated using emissions factors developed from CO<sub>2</sub> stack testing required under Section 5, emissions factors for CH<sub>4</sub> and N<sub>2</sub>O listed in paragraph ix of this subsection, and monthly coal throughput. Until such time that stack testing is performed and site-specific emissions factors are developed, CO<sub>2</sub> emissions shall be calculated using an emissions factor of 93.4 kg per MMBtu (40 CFR 98, Table C-1) and the monthly total coal throughput.
    - B. When burning natural gas, monthly emissions from boilers 1 and 2 shall be calculated from emissions factors developed from CO<sub>2</sub> stack testing required under Section 5, emissions factors for CH<sub>4</sub> and N<sub>2</sub>O listed in paragraph x of this

subsection, and monthly natural gas consumption. Until such time that stack testing is performed and site-specific emissions factors are developed, CO<sub>2</sub> emissions shall be calculated using an emissions factor of 53.02 kg per MMBtu (40 CFR 98, Table C-1).

- vi. Boilers 3 through 7 – The owner or operator shall monitor the amount of fuel consumed on a continuous basis.
- vii. Emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O shall be calculated according to the following formula: (40 CFR 98.33(a)(1)(i), 40 CFR 98.33(a)(2)(i), and 40 CFR 98.33(c)(1))

$$\text{CO}_2 \text{ or CH}_4 \text{ or N}_2\text{O} = \text{Fuel} \times \text{HHV} \times \text{EF} \times (2.2046/2000)$$

Where:

CO <sub>2</sub> or CH <sub>4</sub> or N <sub>2</sub> O	=	CO <sub>2</sub> or CH <sub>4</sub> or N <sub>2</sub> O emissions	(short tons)
Fuel	=	Amount of fuel combusted during a given month	
HHV	=	High heat value	
EF	=	Fuel-specific emission factor	
2.2046/2000	=	Conversion from kilograms to short tons	(short tons/kg)

- viii. Monthly emissions of CO<sub>2</sub>e shall be calculated using the results of paragraph 3.e.vii according to the following formula: (40 CFR 98.2(b)(4) and 40 CFR 98, Table A-1)

$$\text{CO}_2\text{e} = (\text{CO}_2 \times 1) + (\text{CH}_4 \times 21) + (\text{N}_2\text{O} \times 310)$$

Where:

CO <sub>2</sub> e	=	Monthly CO <sub>2</sub> e emissions	(short tons)
CO <sub>2</sub> or CH <sub>4</sub> or N <sub>2</sub> O	=	Monthly CO <sub>2</sub> or CH <sub>4</sub> or N <sub>2</sub> O emissions	(short tons)
1	=	Global warming potential of CO <sub>2</sub>	(unitless)
21	=	Global warming potential of CH <sub>4</sub>	(unitless)
310	=	Global warming potential of N <sub>2</sub> O	(unitless)

- ix. With the exception of the site specific CO<sub>2</sub> emissions factors of boilers 1 and 2, calculations of emissions from the combustion of coal shall use the following values:

High Heat Value	=	Result of latest quarterly coal fuel sampling	
CH <sub>4</sub> Emission Factor	=	1.1x10 <sup>-2</sup> kg/MMBtu	(40 CFR 98, Table C-2)
N <sub>2</sub> O Emission Factor	=	1.6x10 <sup>-3</sup> kg/MMBtu	(40 CFR 98, Table C-2)

- x. Calculations of emissions from natural gas combustion shall use the following values:

High Heat Value	=	$1.028 \times 10^{-3}$ MMBtu/scf	(40 CFR 98, Table C-1)
CO <sub>2</sub> Emission Factor	=	53.02 kg/MMBtu	(40 CFR 98, Table C-1)
CH <sub>4</sub> Emission Factor	=	$1.0 \times 10^{-3}$ kg/MMBtu	(40 CFR 98, Table C-2)
N <sub>2</sub> O Emission Factor	=	$1.0 \times 10^{-4}$ kg/MMBtu	(40 CFR 98, Table C-2)

- xi. Calculations of emissions from fuel oil or diesel oil combustion shall use the following values:

High Heat Value (boilers)	=	Result of latest quarterly fuel oil sampling	
High Heat Value (others)	=	0.138 MMBtu per gallon of oil	
CO <sub>2</sub> Emission Factor	=	73.96 kg/MMBtu	(40 CFR 98, Table C-1)
CH <sub>4</sub> Emission Factor	=	$3.0 \times 10^{-3}$ kg/MMBtu	(40 CFR 98, Table C-2)
N <sub>2</sub> O Emission Factor	=	$6.0 \times 10^{-4}$ kg/MMBtu	(40 CFR 98, Table C-2)

- e. Data Correction Procedures

- i. CEMS Emissions

A. Unless the CEMS is rendered inoperable for more than 10 percent of a given month, no data filling procedures are required in computing the monthly average emission factor. In the event that the CEMS is inoperable for more than 10 percent of the month, the owner or operator shall calculate an emissions factor using the average of the five highest NO<sub>x</sub> hourly emission rates from the stack in the month. The calculated average emissions factor shall be input for the missing data during periods when the boiler associated with the stack was operational and the missing data shall be reported in accordance with Section 7 of this permit.

- ii. Fuel Usage Data

A. If fuel usage data which is monitored continuously is missing or invalid (as determined through review of plant records), data shall be filled for each day of missing/invalid data. If less than 10 percent of days for a given month have missing data, the missing days shall be filled using the average of the days immediately preceding and following the missing period. If 10 percent or more of days for a given month are missing data, the data shall be filled using the maximum daily fuel usage recorded during that month and the missing data will be reported as a deviation in accordance with Section 7 of this permit.

B. If fuel usage data which is monitored monthly is missing, data shall be filled for the entire missing month with the maximum monthly fuel usage for the given unit during the preceding 12-month period. The missing data will be reported as a deviation in accordance with Section 7 of this permit.

- iii. Hours of Operation Data

- A. If hours of operation data is monitored continuously and is missing or invalid (as determined through review of plant records), data shall be filled for each day of missing/invalid data. If less than 10 percent of days for a given month have missing data, the missing days shall be filled using the average of the days immediately preceding and following the missing period unless other data (i.e., fuel throughput) exists such that it is known the source was not operational. If 10 percent or more of days for a given month are missing data, the data shall be filled using the maximum daily hours of operation recorded during that month and the missing data will be reported as a deviation in accordance with Section 7 of this permit.
- B. If hours of operation data is monitored without a CEMS and is missing, data shall be filled for a missing month of data with the maximum hours of operation in a month over the preceding 12-month period. The missing data will be reported as a deviation in accordance with Section 7 of this permit.
- iv. If amount of coal delivered is missing, data shall be filled using the plant-wide coal throughput during the given month. The missing data will be reported as a deviation in accordance with Section 7 of this permit.
- v. With regards to TDS data, the following data fill procedures will be employed.
  - A. If TDS data is missing for a single week, data shall be filled using the average of the weeks immediately preceding and following the missing data for the given unit.
  - B. If TDS data is missing for two or more consecutive weeks for only one unit, data for the other unit for the given weeks shall be used to fill the data.
  - C. If TDS data is missing for two or more consecutive weeks for both units concurrently, data shall be filled using the maximum test result from the preceding 12-month period for each of the given units. In addition, the missing data will be reported as a deviation in accordance with Section 7 of this permit.
- vi. High heat content of coal and fuel oil shall be monitored on a quarterly basis and emissions calculations for demonstrating compliance shall use the most recent test results.
  - A. Missing test data shall be filled using the maximum test result for a given fuel from the preceding four valid test results. In addition, the missing data will be reported as a deviation in accordance with Section 7 of this permit.
- vii. With regards to cooling water flowrate data, the following data fill procedures will be employed:

- A. If cooling water flowrate data is missing for a single week, data shall be filled using the average of the weeks immediately preceding and following the missing data.
  - B. If cooling water flowrate data is missing for two or more consecutive weeks, data shall be filled using the maximum weekly average flowrate from the current calendar quarter. In addition, the missing data will be reported as a deviation in accordance with Section 7 of this permit.
- f. The owner or operator must record and report maximum potential emissions without considering enforceable emission limitations or operational restrictions for an emissions unit during any period of time that there is no monitoring data, unless another method for determining emissions during such periods has been specified under subsection 3.e of this permit. (40 C.F.R. 52.21(aa)(12)(vii))
- g. All data used to establish the PAL pollutant must be re-validated through performance testing or other scientifically valid means approved by the Director. Such testing must occur at least once every 5 years after issuance of the PAL. (40 C.F.R. 52.21(aa)(12)(ix))
4. Monitoring System for Emissions Units Added or Modified After PAL Issuance
- a. The owner or operator shall monitor PM<sub>10</sub>, GHGs, and NO<sub>x</sub> emissions from emissions units added or modified after issuance of this permit in accordance with the provisions under this section and 40 C.F.R. 52.21(aa)(12).
  - b. The owner or operator must establish a monitoring system that accurately determines plantwide emissions of PM<sub>10</sub>, GHGs on a CO<sub>2</sub>e basis, and NO<sub>x</sub>. The monitoring system must be based on sound science and meet generally acceptable scientific procedures for data quality and manipulation. Additionally, the information generated by the monitoring system must meet minimum legal requirements for admissibility in a judicial proceeding to enforce the PAL permit. Failure to use a monitoring system that meets the requirements of 40 C.F.R. 52.21(aa)(12) will render the PAL invalid. (40 C.F.R. 52.21(aa)(12)(i)(a), 40 C.F.R. 52.21(aa)(12)(i)(d))
  - c. The monitoring system for emissions units added or modified after issuance of the PAL shall use one of the four general monitoring approaches in paragraphs (i) through (iv) of this subsection.
    - i. Mass balance calculations - The owner or operator using mass balance calculations to monitor PAL pollutant emissions from activities using coating or solvents shall meet the following requirements: (40 C.F.R. 52.21(aa)(12)(iii))
      - A. Provide a demonstrated means of validating the published content of the PAL pollutant that is contained in or created by all materials used in or at the emissions unit;

- B. Assume that the emissions unit emits all of the PAL pollutant that is contained in or created by any raw material or fuel used in or at the emissions unit, if it cannot otherwise be accounted for in the process; and
  - C. Where the vendor of a material or fuel, which is used in or at the emissions unit, publishes a range of pollutant content from such material, the owner or operator must use the highest value of the range to calculate the PAL pollutant emissions unless the Director determines there is site-specific data or a site-specific monitoring program to support another content within the range.
- ii. CEMS - An owner or operator using CEMS to monitor PAL pollutant emissions shall meet the following requirements: (40 C.F.R. 52.21(aa)(12)(iv))
- A. CEMS must comply with applicable Performance Specifications found in 40 CFR part 60, appendix B; and
  - B. CEMS must sample, analyze and record data at least every 15 minutes while the emissions unit is operating.
- iii. CPMS or PEMS - An owner or operator using CPMS or PEMS to monitor PAL pollutant emissions shall meet the following requirements: (40 C.F.R. 52.21(aa)(12)(v))
- A. The CPMS or the PEMS must be based on current site-specific data demonstrating a correlation between the monitored parameter(s) and the PAL pollutant emissions across the range of operation of the emissions unit; and
  - B. Each CPMS or PEMS must sample, analyze, and record data at least every 15 minutes, or at another less frequent interval approved by the Director, while the emissions unit is operating.
- iv. Emissions Factors - An owner or operator using emission factors to monitor PAL pollutant emissions shall meet the following requirements: (40 C.F.R. 52.21(aa)(12)(vi))
- A. All emission factors shall be adjusted, if appropriate, to account for the degree of uncertainty or limitations in the factors' development;
  - B. The emissions unit shall operate within the designated range of use for the emission factor, if applicable; and
  - C. If technically practicable, the owner or operator of a significant emissions unit that relies on an emission factor to calculate PAL pollutant emissions shall conduct validation testing to determine a site-specific emission factor within 6 months of PAL permit issuance, unless the Director determines that testing is not required.



- d. Notwithstanding subsection (c) of this section and 40 C.F.R. 52.21(aa)(12)(i)(b) the owner or operator may also use an alternative monitoring approach that meets subsection (b) of this section and 40 C.F.R. 52.21(aa)(12)(i)(a) if approved by the Director. (40 C.F.R. 52.21(aa)(12)(i)(c))
- e. The owner or operator shall submit the monitoring methods for new and modified emissions units in accordance with the provisions of subparagraph 7.b.i.D.
- f. The owner or operator must record and report maximum potential emissions without considering enforceable emission limitations or operational restrictions for an emissions unit during any period of time that there is no monitoring data, unless another method for determining emissions during such periods has been specified under subsection 3.e of this permit. (40 C.F.R. 52.21(aa)(12)(vii))
- g. All data used to establish the PAL pollutant must be re-validated through performance testing or other scientifically valid means approved by the Director. Such testing must occur at least once every 5 years after issuance of the PAL. (40 C.F.R. 52.21(aa)(12)(ix))

5. Testing Requirements

- a. Within 6 months of permit issuance, the Permittee shall conduct performance tests (as described in 40 CFR § 60.8) for PM<sub>10</sub> and CO<sub>2</sub> on Boilers 1 and 2 to establish site specific emissions factors for these units.
- b. The Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.
- c. Performance tests shall be conducted in accordance with the test methods set forth in 40 CFR § 60.8 and 40 CFR Part 60 Appendix A, as modified below. In lieu of the specified test methods, equivalent methods may be used with prior written approval from EPA:
  - i. EPA Method 201A and 202 for PM<sub>10</sub>.
  - ii. EPA Methods 1-4 and 3B for CO<sub>2</sub> emissions.
- d. The Permittee shall furnish EPA with a written report of the results of performance tests within 60 days of completion.
- e. EPA reserves the right to require stack testing to establish site-specific emissions factors for units added or modified after issuance of this permit and that meet the requirements of subparagraph 4.c.iv.C.

6. Recordkeeping Requirements

- a. The owner or operator shall retain the records required under this section and 40 C.F.R. 52.21(aa)(13) on site. Such records may be retained in an electronic format. (40 C.F.R. 52.21(aa)(7)(viii))
- b. The owner or operator shall retain a copy of all records necessary to determine compliance with the requirements of this PAL permit and of 40 C.F.R. 52.21(aa), including a determination of each emissions unit's 12-month rolling total emissions, for 5 years from the date of such record. (40 C.F.R. 52.21(aa)(13)(i))
- c. The owner or operator shall retain a copy of the following records for the duration of the PAL effective period plus 5 years: (40 C.F.R. 52.21(aa)(13)(ii))
  - i. A copy of the PAL permit application and any applications for revisions to the PAL; and
  - ii. Each annual certification of compliance pursuant to title V and the data relied on in certifying the compliance.

7. Reporting Requirements

- a. The owner or operator shall submit the reports required under this section and 40 C.F.R. 52.21(aa)(14) by the required deadlines. (40 C.F.R. 52.21(aa)(7)(ix))
- b. The owner or operator shall submit semi-annual monitoring reports and prompt deviation reports to the Director in accordance with the title V operating permit. The reports shall meet the requirements in paragraphs (i) through (iii) of this subsection. (40 C.F.R. 52.21(aa)(14))
  - i. The semi-annual report shall be submitted to the Director by January 31 and August 1 of each year. The January 31 report shall be for the previous calendar year, and the August 1 report shall be for period of January 1 to June 30 of the current calendar year. The report shall contain the information required in subparagraphs (A) through (G) of this paragraph.
    - A. The identification of owner and operator and the permit number.
    - B. Total annual emissions (tons/year) based on a 12-month rolling total for each month in the reporting period recorded pursuant to subsection 6(b) of this permit and 40 C.F.R. 52.21(aa)(13)(i).
    - C. All data relied upon, including, but not limited to, any Quality Assurance or Quality Control data, in calculating the monthly and annual PAL pollutant emissions.
    - D. A list of new emissions units and modified emissions units that have become operational during the reporting period and a description of the monitoring method used to demonstrate compliance with the PAL limits in Section 4, including the emissions factors used (if applicable), emissions calculations

method, and monitoring frequency. The monitoring method must meet the requirements of Section 4.c.

- E. The number, duration, and cause of any deviations or monitoring malfunctions (other than the time associated with zero and span calibration checks), and any corrective action taken.
  - F. A notification of a shutdown of any monitoring system, whether the shutdown was permanent or temporary, the reason for the shutdown, the anticipated date that the monitoring system will be fully operational or replaced with another monitoring system, and whether the emissions unit monitored by the monitoring system continued to operate, and the calculation of the emissions of the pollutant or the number determined by methods included in this permit, as provided by 40 C.F.R. 52.21(aa)(12)(vii).
  - G. A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.
- ii. The owner or operator shall promptly submit reports of any deviations or exceedance of the PAL requirements, including periods where no monitoring is available as indicated in sections 3 and 4, in accordance with the reporting requirements of the Title V permit. The reports shall contain the following information:
    - A. The identification of owner and operator and the permit number;
    - B. The PAL requirement that experienced the deviation or that was exceeded;
    - C. Emissions resulting from the deviation or the exceedance; and
    - D. A signed statement by the responsible official certifying the truth, accuracy, and completeness of the information provided in the report.
  - iii. The owner or operator shall submit to the Director the results of any re-validation test or method required under section 5 of this permit within 60 days of completion of such test or method.
8. Right of Entry
- a. The owner/operator shall allow all authorized representatives of EPA, upon presentation of credentials, to enter upon or through the facility where records required under this permit are kept. The owner/operator shall allow such authorized representatives, at reasonable times:
    - i. To access and copy any records that must be kept under this permit;

- ii. To inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- iii. To monitor substances or parameters for purposes of assuring compliance with this permit.

9. Transfer of Ownership

- a. In the event of any changes in control or ownership of the facility, this permit shall be binding on all subsequent owners and operators. The owner/operator shall notify the succeeding owner and operator of the existence of this permit and its conditions before such change if possible, but in no case later than 14 days after such change. Notification shall be sent by letter with a copy forwarded within 5 days to EPA.

10. Severability

- a. The provisions of this permit are severable, and if any provision of the permit is held invalid, the remainder of this permit will not be affected thereby.

11. Credible Evidence

- a. For the purpose of establishing whether or not the owner/operator has violated or is in violation of any provision of this permit, the methods used in this permit shall be used, as applicable. However, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether the owner/operator would have been in compliance with applicable requirements if the appropriate performance or compliance test procedures or methods had been performed.

12. Other Applicable Regulations

- a. The owner/operator shall construct and operate all equipment regulated herein in compliance with all other applicable provisions of federal and state air regulations.

13. Agency Address

Subject to change, all correspondence required by this permit shall be forwarded to:

Director  
Air Protection Division  
U.S. EPA Region 3  
1650 Arch Street  
Philadelphia, PA 19103