



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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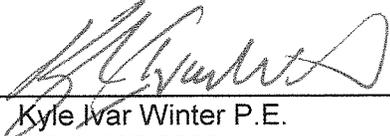
STATEMENT OF LEGAL AND FACTUAL BASIS

Virginia Electric and Power Company
Hopewell Power Station
107 Terminal Avenue - Hopewell, Virginia
Permit No. PRO - 51019

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Hopewell Power Station has applied for a Title V Operating Permit amendment for its 107 Terminal Avenue - Hopewell, Virginia facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit amendment.

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FACILITY INFORMATION

Permittee

Virginia Electric & Power Company
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Facility

Hopewell Power Station
107 Terminal Avenue
Hopewell, Virginia 23860

County-Plant Identification Number: 51-670-00063

CURRENT PERMIT ACTION DESCRIPTION

This permitting action is a significant permit modification to the Title V permit issued on May 25, 2012 to (1) include the changes from the significant modification of the Prevention of Significant Permit (PSD) permit issued to Hopewell Power Station (HPS) on May 23, 2012 and to (2) include changes from the minor amendment to the PSD permit issued on November 26, 2012. The PSD permit issued on November 26, 2012 superseded the PSD permit issued on May 23, 2012.

DEQ issued the significant modification to the PSD permit on May 23, 2012 to convert the HPS's two primary boilers (Ref. Nos. 001 and 002) from burning coal as a fuel to burning woody biomass as a fuel. On April 16, 2012, DEQ held a public hearing about the modifications to the PSD permit and received only favorable comments in support of the project. On May 22, 2012, DEQ responded to comments received on April 27, 2012 from the Environmental Protection Agency (EPA), Region III and DEQ issued the PSD permit on 05/23/2012.

DEQ issued a minor amendment to the PSD permit on November 26, 2012 to remove two biomass conveyors and to correct several typographical errors.

After this Title V permit modification to incorporate the changes from the PSD permit issued on 05/23/2012 and amended on 11/26/2012, HPS will remain a Title V major source with major emissions of NO_x, CO and total HAP.

The HPS Title V permit was originally issued on November 25, 2002 and was amended on January 11, 2007 with an expiration date of November 26, 2007. The renewal application for the Dominion Hopewell Power Station Title V operating permit was received on May 29, 2007. DEQ issued the HPS Title V renewal on May 25, 2012, which incorporated compliance assurance monitoring (CAM) requirements.

SOURCE DESCRIPTION

NAICS Code: 221117 –Biomass Electric Power Generation; comprised of establishments primarily

engaged in operating biomass electric power generation facilities. The electric energy produced in these establishments is provided to electric power transmission systems or to electric power distribution systems.

SIC 4911 – Electric Power Generation.

Dominion - Hopewell Power Station is an electric generating facility which produces electricity and steam. The facility is located at 107 Terminal Avenue in the independent city of Hopewell Virginia.

The facility includes two 394million Btu/hr biomass-fired stoker boilers with associated lime, ash, and fuel handling systems, as well as several small diesel engine sources used to provide redundant or backup services. Although biomass is the primary fuel for the stoker boilers, each boiler can fire natural gas for startup and warm standby. Also located at the facility are two package auxiliary boilers: one is a 73.43 million Btu/hr distillate or natural gas boiler and the other a 90 million Btu/hr natural gas boiler. These boilers are used to provide steam to the host during times when the stoker boilers are not operating.

The Hopewell Power Station facility completed initial performance testing in July of 1992 and began commercial operation as a cogeneration facility on July 1, 1992. The facility was purchased by Dominion in March of 2001 and began operating as Virginia Electric and Power Company's Hopewell Power Station. The facility was not operated from December 31, 2001 until being restarted on April 7, 2007. The facility still supplies steam and operates its main boilers approximately two days per week to supply electricity during peak demands.

On May 23, 2012, HPS received a permit to convert the two B & W spreader stoker boilers from burning coal to burning woody biomass. This permit was amended on November 26, 2012. After the conversion, HPS will not use coal.

The facility is a Title V major source of: CO, NO_x, and total HAP. This source is located in an attainment area for all pollutants, and is a PSD major source. The facility is currently permitted under a PSD Permit issued on May 23, 2012 and amended on November 26, 2012.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted on May 29, 2012. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. On July 10, 2008, due to previous reports and compliance evaluations, the facility and DEQ entered into a Consent Order to resolve a Notice of Violation alleging noncompliance with the short-term SO₂ emission limits of 0.162 Lb/mmBTU, as required by Title V permit condition III.A.10. The facility failed to notify DEQ within 4-daytime business hours of an air pollution control equipment failure or malfunction that caused excess emissions for more than one hour, as required by the November 25, 2002 Title V permit condition: *XI. F. Failure/Malfunction Reporting*. The facility is now current with all notifications and has fulfilled all reporting requirements of the consent order with its last document submission on September 15, 2008.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
Fuel Burning Equipment							
001	001	One (1) B & W single drum, single pass stoker boiler that includes an overfire air (OFA) system to generate steam for process use and electricity generation (combusts biomass; startup – natural gas)	394 x 10 ⁶ BTU/hr firing biomass (maximum); 379 x 10 ⁶ BTU/hr firing biomass (nominal)	1) Selective Non-catalytic Reduction System (SNCR) Ammonia injection installed 1990; 2) Dry Lime Scrubber installed 1990; 3) Fabric Filter Baghouse installed 1990	1) 001/EC-1a; 2) 001/EC-1b; 3) 001/EC-1c;	1) NO _x (40% design control efficiency); 2) SO ₂ (75% design control efficiency); 3) PM, PM-10, PM-2.5 (99.9% design control efficiency)	PSD permit issued 05/23/2012 [^] (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
002	001	One (1) B & W single drum, single pass stoker boiler that includes an overfire air (OFA) system to generate steam for process use and electricity generation (combusts biomass; startup – natural gas)	394 x 10 ⁶ BTU/hr firing biomass (maximum); 379 x 10 ⁶ BTU/hr firing biomass (nominal)	1) Selective Non-catalytic Reduction System (SNCR) Ammonia injection installed 1990; 2) Dry Lime Scrubber installed 1990; 3) Fabric Filter Baghouse installed 1990	1) 002/EC-2a; 2) 002/EC-2b; 3) 002/EC-2c;	1) NO _x (40% design control efficiency); 2) SO ₂ (75% design control efficiency); 3) PM, PM-10, PM-2.5 (99.9% design control efficiency)	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
003	003	One (1) auxiliary boiler A to generate steam for process use (combusts natural gas or distillate oil)	73.43 x 10 ⁶ BTU/hr firing natural gas or distillate oil (nominal)	1) Low NO _x Burners installed in 1990; and 2) Flue Gas Recirculation installed 1990	1) 003/EC-3a 1) 003/EC-3b	1) NO _x 2) NO _x	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
005	005	One (1) auxiliary boiler B to generate steam for process use (combusts natural gas)	90 x 10 ⁶ BTU/hr firing natural gas (nominal)	1) Low NOx Burners installed 1994; 2) Flue Gas Recirculation installed 1994	1) 005/EC-5a; 2) 005/EC-5b	1) NO _x (30% design control efficiency); 2) NO _x (60% design control efficiency)	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
007	007	One (1) emergency diesel feedwater pump (combusts diesel fuel)	1.2 x 10 ⁶ BTU/hr; 126 BHP	None	N/A	N/A	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
009	009	One (1) emergency diesel firewater pump (combusts diesel fuel)	0.68 x 10 ⁶ BTU/hr; 208 BHP	None	N/A	N/A	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
Process Equipment – Bed and Flyash Handling System and Lime Handling System Storage							
010	N/A	One (1) Boiler Ash Conveyor Blower Systems A	28 tons/hr	Fabric Filter Baghouse	EC-10	PM, PM-10, PM 2.5 (99% design control efficiency)	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
012	N/A	One (1) Boiler Ash Conveyor Blower Systems B	28 tons/hr	Fabric Filter Baghouse	EC-11	PM, PM-10, PM 2.5 (99% design control efficiency)	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
013	N/A	One (1) Boiler Ash Conveyor Blower Systems C	28 tons/hr	Fabric Filter Baghouse	EC-12	PM, PM-10, PM 2.5 (99% design control efficiency)	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
014	014	One (1) Ash Unloading Feeder	80 tons/hr tons/hr	Ash Conditioning System (water spray)	EC-14	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
015	015	One (1) Recycle Ash Bin	26.5 tons	Bin Vent Filter	EC-15	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
016	016	One (1) Ash Storage Silo	530 tons	Bin Vent Filter	EC-16	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
017	017	One (1) Pebble Lime Storage Silo	135 tons	Bin Vent Filter	EC-17	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
018	018	One (1) Biomass Storage Silo (former coal silo)	180 tons	Bin Vent Filter	EC-18	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
019	019	Parts Washer	Various	NA	NA	VOC	NA
Process Equipment – Biomass Handling System							
101 A	NA	Biomass Truck Tipper (1) to Receiving Hopper (1)	269 tons	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
101 B	NA	Biomass Truck Tipper (1) to Receiving Hopper (1)	269 tons	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012^ (amended 11/26/2012)
101 C	NA	One (1) Emergency Reclaimer	90 tons/hr	NA	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012^ (amended 11/26/2012)
102	NA	One (1) Biomass Storage Pile	3 MMCF	NA	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012^ (amended 11/26/2012)
103	NA	Biomass Stacker	269 tons/hr	NA	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012^ (amended 11/26/2012)
104-1	NA	Truck Tipper Reclaimer # 1 to Conveyor A Transfer Point	269 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012^ (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
104-2	NA	Truck Tipper Reclaimer # 2 to Conveyor A Transfer Point	269 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
104-3	NA	Conveyor B To Diverter Gate #2 Transfer Point	269 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
104-4	NA	Conveyor C to Stackers Transfer Point	269 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
104-5	NA	Reclaimer to Conveyor D Transfer Point	90 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
104-6	NA	Emergency Reclaimer To Conveyor D Transfer Point	90 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled*	Applicable Permit Date
104-7	NA	Diverter Gate # 2 To Conveyor D Transfer Point	90 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
104-10	NA	Conveyor D To Fuel Bunker Drag Chain Transfer Point	90 tons/hr	Partial Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
105	NA	Cooling Tower	NA	NA	NA	NA	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
106	NA	Biomass Screen and Hogging System	269 tons/hr	Total Enclosure	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)
107	NA	Ash Collection System	----	Water Spray	NA	PM, PM-10, PM 2.5	PSD permit issued 5/23/2012 [^] (amended 11/26/2012)

*The Size/Rated capacities and PCD efficiencies are provided for informational purposes only, and are not applicable requirements.

^ The PSD permit that was issued on 05/23/2012 was amended on 11/26/2012. There were no emission changes.

EMISSIONS INVENTORY

The following table from Condition # 39 of the PSD permit issued May 23, 2012 and amended on November 26, 2012, lists the facility's emissions from the operation of the two B & W biomass boilers (Ref. Nos. 001, 002) and the two auxiliary boilers (Ref. Nos. 003, 005).

Pollutant	PTE in tons/yr
PM ₁₀	93.5
SO ₂	42.3
NO _x	413.7
CO	917.8
VOC	44.3

A copy of the 2011 annual emission update is attached. Emissions are summarized in the following tables.

2011 Criteria Pollutant Actual Emissions

Emission Unit	2010 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀	NO _x
Total	0.83	17.66	17.6	18.78	136.76

2011 Facility Hazardous Air Pollutant Emissions

Pollutant	2011 Hazardous Air Pollutant Emission in Tons/Yr
1,1,2,2 Tetrachloroethane	0.001
HCL	0.428
HF	0.049
Methylene Chloride	0.000
Tetrachloroethylene	0.001
Radionuclides	0.000
1,1,1 Trichloroethane	0.000
CEDs Total	0.480

EMISSION UNIT APPLICABLE REQUIREMENTS – Unit ID Nos. 001, 002, 003, 005, 007, & 009. Fuel Burning Equipment

There are six fuel burning emission sources with specific applicable requirements: the biomass primary stoker boilers (001 and 002), the auxiliary boilers (003, and 005), and the emergency diesel feed-water pump and the emergency firewater pump (007 and 009). These sources are regulated by the May 23, 2012, 2012 PSD Permit that was amended on November 26, 2012, 40 CFR 60 Subparts Db & Dc and 40 CFR Part 75 (CEMS), and 40 CFR Part 96 (CAIR).

The biomass primary stoker boilers (001,002) are subject to NSPS Subpart Db because the boilers are an (1) electric utility steam generating unit that are (2) capable of burning 250 mmbtu/hr of (3) fossil fuel (alone or in combination with other fuel) which commenced construction after 09/18/1978.

After the conversion of the boilers to biomass and the inability to burn coal, a fossil fuel, DEQ asked the Environmental Protection Agency (EPA) if the boilers were subject to NSPS Subpart Da or NSPS Subpart Db.

On February 21, 2012, EPA, Region III responded to DEQ that “NSPS Subpart Da will no longer apply to this operation as wood (biomass), under Section 60.40 Da, is not considered, and not defined, as a fossil fuel but Subpart Db will apply to these sources as they meet the definition of an affected facility under those regulations in Section 60.40b which accounts for all fuels.”

The boilers also, meet the requirements for and are subject to the Clean Air Interstate Rule, or CAIR).

On December 23, 2008, a federal appellate court made a decision to reverse its vacatur of EPA's Clean Air Interstate Rule and instead remanded it to the agency. The applicability of CAIR to the boilers supersedes the applicability of 40 CFR Parts 75 and 96 Subpart A, the NOx Budget Trading Program, to Dominion. The NOx Budget Trading Program section of the Title V permit has thus been removed. The boilers are permitted under the May 23, 2012, 2012 PSD Permit that was amended on November 26, 2012.

The auxiliary boilers (003 and 005) are subject to NSPS Subpart Dc because they were constructed after June 9, 1989 and they each have a heat input capacity greater than 10 MMBtu/hr but less than 100 MMBtu/Hr. These units are permitted under the May 23, 2012 PSD Permit that was amended on November 26, 2012 .

The emergency boiler feed water diesel pump (007) and the emergency fire water diesel pump (009) are permitted under the May 23, 2012 PSD Permit that was amended on November 26, 2012. They are not subject to NSPS Subpart IIII because they were constructed before the applicability date of July 11, 2005 and 2007 (for the fire pump) and have not since been reconstructed or modified.

The changes in the PSD permit issued on May 23, 2012 and amended on November 26, 2012 were limited to the modification of the two primary boilers (Ref. Nox. 001, 002) and the installation of the biomass handling system (Ref. Nos. 101 A through 107). See the attached engineering analysis for the PSD permit issued on 05/23/2012 and amended on 11/26/2012. This statement of basis describes the changes in the 05/23/2012 PSD permit that was amended on 11/26/2012.

The references to coal have been removed and generally replaced with biomass.

Primary Boilers (Unit ID Nos. 001, 002)
Limitations – Primary Boilers

The references to a control efficiency for SO₂ were removed because the change from coal to woody biomass as the primary fuel negated the control efficiency listing for SO₂ since the emission will be greatly reduced. The 01/30/2012 PSD permit limited SO₂ emissions to 518.7 tons per year based on using coal for fuel. In comparison, the 05/23/2012 PSD permit as amended on 11/26/2012 limits SO₂ emission to 42.3 tons per year based on using biomass for fuel resulting in a SO₂ emissions decrease of 476.4 tons per year. These emissions include both biomass boilers and the two auxiliary boilers (Ref. Nos. 003, 005).

The maximum hourly firing rate and the annual heat input of the primary boilers are based upon operational requirements and scenarios presented by the facility.

The primary boilers shall not operate more than 8,400 hours per year. The visible emissions from the primary boilers shall not exceed 10 percent opacity, except for one six-minute period that will not exceed 20 percent opacity.

The approved fuel for the primary boilers is biomass, which is defined in the permit.

Monitoring – Primary Boilers

In the 01/30/2012 PSD permit and the 05/25/2012 Title V renewal permit, there was a requirement for an SO₂ continuous emissions monitor (CEM) at the inlet and outlet of the spray dryer to comply with the then applicable NSPS Da SO₂ percent reduction requirements. The PSD permit issued on 05/23/2012 and amended on 11/26/2012 requires an SO₂ CEM at the outlet of the control device, which will be used to determine compliance with SO₂ 3-hour rolling average emission standard. The now applicable NSPS Db requires only a CEM after the air pollution control device. The permit does not require an SO₂ percent reduction requirement because there is no inlet SO₂ CEM.

Compliance Assurance Monitoring (CAM)

CAM (40 CFR 64) applies to an emissions unit (primary boilers) at a major stationary source, which is required to have a Title V permit, if the unit:

1. Is subject to an emission limit or standard
2. Uses a control device to meet the emission limit

3. Has uncontrolled emissions greater than the major source threshold (100 tons/year).
 If a source has a CEM, then CAM does not apply (40 CFR 64.2(b)(vi)).

CAM Criteria Chart

Unit	Pollutant	Uncontrolled Emissions > 100 tons/yr	Control Device	Emission Limit	CEM	CAM
Primary Boilers* (001, 002)	PM	Yes	Baghouse	Yes	No	Yes
Primary Boilers* (001, 002)	SO ₂	No	Dry FGD	Yes	Yes	No
Primary Boilers* (001, 002)	NO _x	Yes	SNCR	Yes	Yes	No
Primary Boilers* (001, 002)	CO	Yes	None	Yes	No	No
Primary Boilers* (001, 002)	VOC	No	None	Yes	No	No

- *The Hopewell Power Station permit has separate limits for PM, PM₁₀ and PM_{2.5} and each has uncontrolled emissions greater than 100 tons per year. In this statement of basis, all three pollutants are called PM, unless otherwise noted.

Based on the requirements for CAM and the information in the CAM Criteria Chart, the source is required and has provided a CAM plan for the PM emissions from the primary boilers (001, 002).

CAM for Particulate Matter (PM)

The PM emissions from the primary boilers (001, 002) are controlled by a lime-water injection spray dryer and a fabric filter. The PSD permit and the current draft Title V permit require a series of quarterly initial stack tests for PM when the primary boilers (001, 002) burn biomass. The permits also require a continuous opacity monitor (COM) for the primary boilers (001, 002).

The source uses a continuous exhaust gas temperature monitor between the spray dryer and the baghouse inlet to show that the lime-water injection spray is operating. During the test to show compliance with the PM emissions limits, the source will collect information about the gas temperature and opacity from the COM.

DEQ considers that the exhaust gas temperature monitoring system and the COM system “provide a reasonable assurance of compliance with the emission limits” as specified in 40 CFR 64.3 and the use of this information is adequate to meet CAM. Most of the CAM conditions are found in the current draft Title V permit in Section III.B – Monitoring, C – Reporting, D – Record keeping.

The CAM language in Section III.B – Monitoring is the language from the currently approved state Title V boilerplate.

Recordkeeping – Primary Boilers

The source shall keep the following records for the primary boilers (001, 002): maximum hourly firing rate, annual heat input, continuous emission monitoring results, stack test results, records of primary and auxiliary boiler concurrent operation and biomass and natural gas fuel quality data.

Recordkeeping – Primary Boilers

Initial stack tests for SO₂, NO_x, CO, VOC, Sulfuric Acid Mist and Fluorides are required.

Four, “quarterly” initial stack tests are required for each of the following: Filterable PM, Total PM, Filterable PM₁₀, Total PM₁₀, Total PM_{2.5}; including concurrent fuel quality analyses and Visible Emissions Evaluations (by Method 9 or COM).

Reporting – Primary Boilers

Prior to the biomass conversion project, the primary boilers (001, 002) were coal fired and therefore subject to NSPS Da. This is no longer applicable, so the NSPS Da recordkeeping requirements have been removed.

Streamlining – Primary Boilers

NSPS Subparts Da and Db General Applicability: In their letter dated 02/21/12, EPA Region III concluded that “...NSPS Da will no longer apply to this operation [the primary boilers 001, 002] as wood (biomass), under Section 60.40Da, is not considered, and not defined, as a fossil fuel but Subpart Db will apply...” As discussed in this section of the SOB, generally compliance with the standards that resulted from the NSR process insures compliance with the NSPS Db applicable requirement and therefore the NSPS requirement is “streamlined out” of the current Title V permit. (In accordance with current guidance, citation of the NSPS requirement is included in the relevant TV condition.) In several cases noted below, applicable requirements from NSPS Db are explicitly added to the current Title V permit.

SO₂ standards (NSPS 60.42b)

Biomass combustion at HPS is not subject to SO₂ standards. Biomass is not among the fuels for which there are SO₂ emission limits in 60.42b(a) through (d), and since the biomass potential SO₂ emission rate is less than 0.32 lb/MMBtu the primary boilers are exempt from the percent reduction requirements in 60.42b(k). In the permit, the SO₂ emissions from biomass is limited to 0.0125 lb/MMBtu.

PM standards (NSPS 60.43b)

The PM limit that resulted from the NSR review is 0.019 lb/MMBtu: while the most stringent limit in NSPS Db is 0.085 lb/MMBtu. Also, opacity from the NSR review is 10%, with one 6-minute period ≤ 20%; while the NSPS requirement is 20%, with one 6-minute period ≤ 27%. Citation of 40 CFR 60.43b is included Conditions III, Table III (Primary Boiler emissions limits), and III.A.4, 9 (Primary Boiler limitations).

NOx standards (NSPS 60.44b)

The NOx limit that resulted from the NSR review is 0.135 lb/MMBtu: while the most stringent limit for biomass combustion in NSPS Db is 0.2 lb/MMBtu. Citation of 40 CFR 60.44b is included Condition, III, Table III (Primary Boiler emissions limits)

The primary boilers (001, 002) allowable startup fuel is natural gas and the startup burner size is 27.5 MMBtu/hr. The minimum statement of the rated capacity is 379 MMBtu/hr; with the resulting effective annual capacity factor for fossil fuel ~ 7% (i.e., 27.5/379). Per NSPS 60.44b, units with an annual capacity factor less than 10% are not subject to the subpart NOx standards.

SO2 compliance & testing (NSPS 60.45b)

Since biomass combustion is not subject to any 60.42b SO2 standards, it follows that there are no compliance and testing requirements for this fuel.

PM& NOx compliance & testing (NSPS 60.46b)

PM/Opacity Compliance with the NSR condition to perform the four, quarterly initial performance tests for PM insures compliance with the NSPS Db PM testing requirements in 40 CFR 60.46b(b). Citation of 40 CFR 60.46b for PM is included Condition III.E.2 (Primary Boilers testing).

Compliance with the NSR conditions for concurrent, initial Visible Emission Evaluations (VEE) insure compliance with the opacity testing requirements in 40 CFR 60.46b(d)(7). Citation of 40 CFR 60.46b for opacity is included Conditions III.E.3 (Concurrent VEE), and III.E.4 (use of COM in lieu of VEE).

NOx Compliance with the NSR requirement to have a NOx CEM system for the primary boilers insures compliance with the NSPS Db NOx compliance methods and procedures requirements in 40 CFR 60.46b(b). Citation of 40 CFR 60.46b for NOx is included Conditions III.B.1, 2 (Primary boiler CEM systems)

SO2 monitoring (NSPS 60.47b)

The primary boilers (001, 002) do not use oil, so there are no applicable requirements.

PM & NOx monitoring (NSPS 60.48b)

PM Compliance with the NSR requirement to have a COM system for the primary boilers (001, 002) insures compliance with the NSPS Db PM monitoring requirements in 40 CFR 60.48b(a) for sources subject to the opacity standard. Citation of 40 CFR 60.48b for PM is included Conditions III.B.1 (Primary boiler CEM systems)

NOx Compliance with the NSR requirement to have a NOx CEM system for the primary boilers insures compliance with the NSPS Db NOx monitoring requirements in 40 CFR 60.48b(b). Citation of 40 CFR 60.48b for NOx is included Conditions III.B.1 (Primary boiler CEM systems)

Reporting & Recordkeeping (NSPS 60.49b)

60.49b(a) requires that an affected facility must submit notification of initial startup. Compliance with the NSR notification requirements insures compliance with the 60.49b(a) requirement. Citation of 40 CFR 60.49b for this notification is included Condition III.C.4 (Primary boiler reporting)

60.49b(b) requires submittal of (1) (NSPS required) initial performance test data and (2) CEM performance evaluation data. At HPS, NSPS initial performance tests are required for PM and NOx, and in both cases the NSR condition requires submittal of the test results. Similarly, performance evaluations are required for all continuous monitoring systems and the NSR condition requires submittal of the performance evaluation reports. Citation of 40 CFR 60.49b for these submittals is included Conditions III.B.4 (CEM performance evaluations), and III.E.1 & 2 (Initial Performance Tests)

60.49b(d) requires records of the amounts of each fuel combusted each day. Compliance with the NSR recordkeeping requirements insures compliance with the 60.49b(d) requirement. Citation of 40 CFR 60.49b for these is included Conditions III.D.3. (Primary boiler recordkeeping)

60.49b(o) requires all records required by NSPS Db to be maintained for 2 years. The current NSR permit requires records to be kept for 5 years. Citation of 40 CFR 60.49b for these is included Conditions III.D.3 (Primary boiler recordkeeping)

60.49b(r) requires demonstration that fuel combusted meets the definition of VLSO. The primary boilers at HPS do not combust fuel oil, so there is no applicable requirement.

60.49b(w) specifies the NSPS Db reporting period to be 6 months. Compliance with the general duty requirement to report excess emissions quarterly for continuous monitoring systems used directly for compliance determinations insures compliance with the 60.49b(w) requirement.

The following NSPS Db applicable reporting and recordkeeping requirements have been added to Title V permit. See Conditions III.D.3.o & p

Reports

- 60.49b(h) => an affected facility shall submit excess emissions reports for opacity and NOx
- 60.49b(i) => an affected facility shall report the steam generating unit operating day data required to be recorded under 60.49b(g)

Records

- 60.49b(f) => an affected facility subject to the opacity standard shall maintain records of opacity
- 60.49b(g) => an affected facility subject to the NOx standards shall maintain records of specified data for each steam generating unit operating day

Auxiliary Boilers (Ref. Nos. 003, 005)

The significant modification to the PSD permit on 05/23/2012 as amended on 11/26/2012 to convert the HPS's two primary boilers (001, 002) from burning coal as a fuel to burning woody biomass did not affect the requirements of the auxiliary boilers (003, 005).

Combined Boilers (Ref. Nos. 001, 002 003 and 005 combined)

The emission limits for the combined operation of the primary and the auxiliary boilers were revised to incorporate the new limits of the primary boilers burning biomass.

The applicability of the 40 CFR 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters), also called the Boiler MACT to the two primary boilers (001, 002) and the auxiliary boilers (003, 005) was included in this section.

Emergency Diesel Engines (Ref. Nos. 007, 009)

The significant modification to the PSD permit on 05/23/2012 as amended on 11/26/2012 to convert the HPS's two primary boilers (001, 002) from burning coal as a fuel to burning woody biomass did not affect the requirements of the emergency diesel engines (007, 009).

Bed, Flyash, Lime Handling Biomass and Ash Storage Systems (Ref. Nos. 010, 012, 013, 014 and 017)

The emission unit description and air pollution control equipment references for biomass have replaced the references for coal.

The fugitive dust emissions from the furnace bottom ash drag, the boiler ash collection drag and the mechanical collector ash collection drag are controlled by water spray nozzles in Section VIII.A.3.

The annual throughput of biomass is limited Section III.A.12.

The reporting required by NSPS Y, coal preparation and processing, does not apply to this biomass facility and has been removed.

Streamlined Requirements

See Primary Boilers – Streamlining on page 17.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that

apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-2003".

This general condition cite(s) the Article(s) that follow(s):
Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources

This general condition cites the sections that follow:

- 9 VAC 5-80-80. Application
- 9 VAC 5-80-140. Permit Shield
- 9 VAC 5-80-150. Action on Permit Applications

Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

In order for emission units to be relieved from the requirement to make a written report in 14 days the emission units must have continuous monitors meeting the requirements of 9 VAC 5-50-410 or 9 VAC 5-40-41.

This general condition cites the sections that follow:

- 9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources
- 9 VAC 5-40-50. Notification, Records and Reporting
- 9 VAC 5-50-50. Notification, Records and Reporting

This general condition contains a citation from the Code of Federal Regulations as follows:
40 CFR 60.13 (h). Monitoring Requirements.

Permit Modification

This general condition cites the sections that follow:

- 9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
- 9 VAC 5-80-190. Changes to Permits.
- 9 VAC 5-80-260. Enforcement.
- 9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources
- 9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas
- 9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

- 9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction
- 9 VAC 5-80-110. Permit Content

Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:
40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.

40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

- 9 VAC 5-60-70. Designated Emissions Standards
- 9 VAC 5-80-110. Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:

9 VAC 5-50-310, Odorous Emissions
 9 VAC 5-50-320, Toxic Pollutants

FUTURE APPLICABLE REQUIREMENTS

The two primary boilers (001, 002) and the auxiliary boilers (003, 005) will be subject to the Boiler MACT (40 CFR 63, Subpart DDDDD) when it is promulgated.

INAPPLICABLE REQUIREMENTS

Citation	Title of Citation	Determination of Applicability
9 VAC 5-40-60 (Rule 4-1)	Emission Standards for Visible Emissions and Fugitive Dust /Emissions	Units 001 & 002 are subject to opacity standards listed in Db which are more stringent than this rule.
9 VAC 5-40-900 (Rule 4-8)	Particulate Matter Standard for Fuel Burning Equipment	This standard does not apply to stationary internal combustion engines, which include the emergency diesel feed water pump and the diesel firewater pump. Units 001 & 002 and the auxiliary boilers are subject to NSPS Subparts Db, which have more stringent particulate matter emissions limits.
9 VAC 5-40-930 (Rule 4-8)	Sulfur Dioxide Standard for Fuel Burning Equipment	This standard does not apply to stationary internal combustion engines, which include the emergency diesel feed water pump and the diesel firewater pump. Units 001 & 002 are subject to NSPS Db and the auxiliary boilers are subject to NSPS Subparts Dc, which have more stringent SO ₂ emissions limits.
40 CFR 60 Subpart D,	Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971	Units 001 and 002 covered by Db, therefore not covered under this subpart, reference 60.40 (a)(2)(e).
40 CFR 60 Subpart K,	Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and prior to May 19, 1978	No emissions sources at this facility are subject to these NSPS requirements.
40 CFR 60 Subpart Ka	Standards of Performance for Storage Vessels for	This standard does not apply to the fuel oil storage tanks because it is not

Citation	Title of Citation	Determination of Applicability
	Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and prior to July 23, 1984	applicable to units storing petroleum liquids with a vapor pressure less than 1.5 pounds per square inch
40 CFR 60, Subpart Kb	Volatile Organic Liquid Storage Vessels Standards	This Subpart does not apply to the distillate oil storage tanks because the fuel has a maximum true vapor pressure of less than 15 kPa.
40 CFR 60, Subpart IIII	Stationary Compression Ignition Internal Combustion Engines Standards	This Subpart does not apply to the diesels on site because they were constructed before July 11, 2005.
40 CFR 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	This standard does not apply to the Coal crushers and conveyors because coal does not meet the definition of a nonmetallic mineral
9 VAC 5-40-5220 (Rule 4-37)	VOC Standards for Petroleum Liquid Storage and Transfer Operations	This standard does not apply to the fuel oil storage tanks because it is not applicable to units storing petroleum liquids with a vapor pressure less than 1.5 pounds per square inch.
40 CFR 60, Subpart Y	Standards of Performance for Coal Preparation and Processing Plants	This standard does not apply because the facility is being converted to a biomass fired station; no coal on site

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A.4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

COMPLIANCE PLAN

In accordance with the requirements of Section D and Appendix A of the July 10, 2008 Consent Order for the Hopewell Power Station, the following monitoring and recordkeeping requirements have been added to the Title V Permit:

- A. Grit Screen* inspections to access physical wear shall be performed every day of operation. Virginia Electric and Power Company shall keep a daily log of all inspections.
- B. Grit screens shall be replaced every 31 operational days or sooner if daily inspections indicate otherwise. Virginia Electric and Power Company shall keep a log of all replacements.

All logs and records maintained for each of the grit screen inspections and replacements shall be made available to the DEQ upon request.

*Grit screens are the final filtering screen for the lime slurry before it mixes with the ash for supply to the atomizers.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation (9 VAC_)	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
--	Turbine Lube Oil Reservoir	9 VAC 5-80-720 B.2	VOC	3,434 Gallons
--	Used Oil Tank	9 VAC 5-80-720 C.3	VOC	500 Gallons
--	Portable Welder Engine	9 VAC 5-80-720 B.1	Nox,SO2, VOC, PM, PM-10, CO	0.21 mm BTU/Hr 30 BHP
--	Oil/Water Separator (Oil Sump)	9 VAC 5-80-720 C.3	VOC	280 Gallons

¹The citation criteria for insignificant activities are as follows:
 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
 9 VAC 5-80-720 B - Insignificant due to emission levels
 9 VAC 5-80-720 C - Insignificant due to size or production rate

CROSS-STATE AIR POLLUTION CONTROL RULE (CSAPR)

The current affected CAIR units will be subject to the Cross-State Air Pollution Control Rule (CSAPR) (effective October 7, 2011) which replaces the Clean Air Interstate Rule (CAIR) on January 1, 2012. Virginia at this time will implement the CSAPR requirements through the federal implementation plan (FIP) as per Chapter 291 of the 2011 Virginia Acts of Assembly and 40 CFR 97.

On August 21, 2012, the U.S. Court of Appeals for the District of Columbia vacated the 2011 Cross-State Air Pollution Rule (CSAPR) in *EME Homer City Generation, L.P. v. EPA*, No. 11-1302 (D.C. Cir. 2012). In a memorandum to EPA Air Division Directors on November 19, 2012, Gina McCarty, EPA Assistant Administrator, stated that EPA has filed a petition for a rehearing of the Court's decision. McCarty said that CSAPR has been stayed and the 2005 Clean Air Interstate Rule (CAIR) remains in effect, until a Court decision has been made.

CLEAN AIR INTERSTATE RULE (CAIR) REQUIREMENTS

The Primary Spreader Stoker Boilers #1 and #2 (001, 002) are subject to federal CAIR requirements for NO_x, SO₂ and NO_x Ozone Season, and the following permit condition was included to address this rule.

1. The permittee shall comply with all applicable CAIR requirements (9 VAC 5-140-1010 *et seq.*, 9 VAC 5-140-2010 *et seq.*, 9 VAC 5-140-3010 *et seq.*, and 40 CFR Part 96) by the compliance date in the respective Part of 9 VAC 5 Chapter 140. The CAIR application in Attachment A to this document contains specific conditions and expires upon expiration of this Title V permit.
(9 VAC 5-80-110, 40 CFR Part 96 and 9 VAC 5 Chapter 140)

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit was placed on public notice in the Hopewell News from January 31, 2013 to March 2, 2013 for the state 30-day review period. The concurrent 45-day EPA review ended on March 17, 2013. The Department of Environmental Quality did not receive any comments during state and EPA review periods.