

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Southwest Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

Virginia Electric and Power Company
3425 Russell Creek Road, St. Paul, Wise County, Virginia
Permit No. SWRO11526

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. The facility is also subject to the acid rain regulations at 9 VAC 5-80-360 through 9 VAC 5-80-680. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Virginia Electric and Power Company has applied for a Title V Operating Permit for its steam electric power plant in Wise County, Virginia. The Department has reviewed the application and has prepared an Article 3 Federal Operating Permit.

Air Permit Contact: _____ Date: _____
Bruce Mullins
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Rob Feagins

Regional Director: _____ Date: _____
Allen J. Newman, P.E.

FACILITY INFORMATION

Permittee

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

Facility

Virginia City Hybrid Energy Center
3425 Russell Creek Road
St. Paul, Virginia 24283

County-Plant Identification Number: 51-195-00210

SOURCE DESCRIPTION

NAICS Code: 221112 – Fossil Fuel Electric Power Generation

The Virginia City Hybrid Energy Center is an electric power generation facility. Electric power is generated using steam produced by two circulating fluidized bed (CFB) boilers, each with a maximum rated input heat capacity of 3,132 million Btu per hour (MMBtu/hr), which drives a single steam turbine generating unit. The CFB boilers are fueled with coal, coal refuse, coke-derived solid fuel and biomass (wood), which are combusted in a matrix of fuel and limestone, supported as a fluidized bed by the upward flow of combustion air. Ultra low sulfur distillate oil is used for boiler start-up. Other combustion units at the facility, each fired with ultra low sulfur distillate oil or ultra low sulfur diesel fuel, consist of an emergency generator engine with a maximum rated input heat capacity of 5.8 MMBtu/hr, and a fire-water pump engine with a maximum rated input heat capacity of 2.8 MMBtu/hr. An ultra low sulfur distillate oil-fired auxiliary boiler with a maximum rated input heat capacity of 190 MMBtu/hr is permitted for the facility. The auxiliary boiler has not been constructed by the issuance date of the permit.

Support operations at the facility include handling, processing, and storage of fuel, ash, activated carbon, limestone and lime.

Emissions of criteria and hazardous air pollutants result from combustion of the various fuels used at the facility. Emissions of particulate matter result from the operation of material handling, processing and storage equipment.

The facility is a Title V major source of particulate matter with a diameter equal to or less than 10 micrometers (PM-10), PM with a diameter equal to or less than 2.5 micrometers (PM-2.5), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), hydrogen fluoride (HF), hydrogen chloride (HCl) and greenhouse gases (GHG). This source is located in an attainment area for all pollutants, and is a Prevention of Significant Deterioration (PSD) major source. The facility is currently operating under four separate permit documents: 1) a permit issued on June 30, 2008 (as amended January 29, 2009, May 24, 2011 and October 23, 2012), that incorporates the provisions of both Article 6 (Permits for New and Modified Stationary Sources), and Article 8 (Permits for Major Stationary Sources in PSD Areas) in 9 VAC 5 Chapter 80 of Virginia air quality regulations; 2) a Case-By-Case Maximum Achievable Control Technology (MACT) permit issued June 30, 2008 (as amended September 2, 2009 and October 23, 2012), incorporating the provisions of 9 VAC 5-80 Article 7 (Permits for New Major Sources of Hazardous Air Pollutants) of Virginia air quality regulations; 3) a Phase II Acid Rain permit with an effective date of January 1, 2011 to December 31, 2015; and 4) an Article 6 permit issued on March 23, 2009.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was completed on July 2, 2012. Results of the evaluation indicate the facility was not found to be in violation of any state or federal applicable requirements at that time.

Information in the fourth quarter 2012 and first quarter 2013 Excess Emissions Reports indicate carbon monoxide emissions exceedances for the 30-day rolling average variable permit limit for CFB Units 1 and 2. A Notice of Violation concerning this matter was issued on April 10, 2013. Resolution of this matter is ongoing.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Equipment permitted for operation consists of:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment/Utility Units							
CFB1	S1	Foster Wheeler circulating fluidized bed boiler	3,132 MMBtu/hr heat input capacity, (Nominal)	Foster Wheeler limestone injection, Allied flue gas desulfurization	CFB1-1, CFB1-2	SO ₂ , HCl, HF, H ₂ SO ₄	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12), and MACT permit dated 6/30/08 (as amended 9/02/09 and 10/23/12)
				Lechler selective non-catalytic converter with ammonia injection	CFB1-3,	NO _x ,	
				Allied baghouse	CFB1-4	PM/PM-10/ PM-2.5, Hg	
				ADA activated carbon injection	CFB1-5	Hg, VOC	
CFB2	S2	Foster Wheeler circulating fluidized bed boiler	3,132 MMBtu/hr heat input capacity, (Nominal)	Foster Wheeler limestone injection, Allied flue gas desulfurization	CFB2-1, CFB2-2	SO ₂ , HCl, HF, H ₂ SO ₄	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12), and MACT permit dated 6/30/08 (as amended 9/02/09 and 10/23/12)
				Lechler selective non-catalytic converter with ammonia injection	CFB2-3,	NO _x ,	
				Allied baghouse	CFB2-4	PM/PM-10/ PM-2.5, Hg	
				ADA activated carbon injection	CFB2-5	Hg, VOC	

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
AUX	AUXS	Auxiliary boiler (not constructed)	190 MMBtu/hr heat input capacity, (Nominal)	Low-NOx burners	AUX-1	NOx	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
EDG	EDGS	Cummins model QSK23-G7 NR2 emergency diesel generator, (2009)	1,220 brake horsepower/5.8 MMBtu/hr heat input capacity, (Nominal)	Miratech Corp/HUG Engineering selective catalytic converter	SCR1	NOx	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
EFP	S4	John Deere Clarke model JW6H-UFAD70 emergency fire pump, (2009)	376 brake horsepower/2.8 MMBtu/hr heat input capacity, (Nominal)	Ignition timing retard	N/A	NOx	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
Material Receiving, Handling, Processing, and Storage Equipment							
P1	-----	Automated coal reclaim system	1,500 tons/hr	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
P2	P2S	Coal crusher building: two Pennsylvania Crusher model SXC227 reversible hammermills	750 tons/hr, each crusher	SLY baghouse	CBB	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)

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Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
P3	P3S	Coal/Limestone tripper: two cars (conveyor drop points to boiler silos)	750 tons/hr, each car	SLY baghouse	TBB	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
P4 & P5	P4S & P5S	Two fly ash silos	160 tons/hr, each silo	One Torit model 162MBT-10 baghouse, each silo	FAS1B & FAS2B	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
P6	P6S & P6Sa	Bed ash silo	160 tons/hr	Two Torit model 243MBT-10 baghouses	BASB1 & BASB2	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
HLS1 & HLS2	P7S & P8S	Two hydrated lime silos	300 tons, each	One FLSmith – Dust Collector #1 model 36TA8FM, each silo	HLSB-1 & HLSB-2	PM/PM-10/ PM-2.5	Article 6 permit dated 3/23/09
ACS1 & ACS2	P9S & P10S	Two activated carbon silos	100 tons, each	One Torit model TBV-4 cartridge collector, each silo	ACISB-1 & ACISB-2	PM/PM-10/ PM-2.5	Article 6 permit dated 3/23/09
FOM	-----	Fuel oil storage tank (above ground)	550,000 gallons	Conservation vent	N/A	VOC	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHCU	-----	Coal truck unloading facility	1,500 tons/hr	Partial enclosure & wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)

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Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
MHCS	-----	Coal screens	1,500 tons/hr	Partial enclosure & wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHCB	-----	Coal breaker	400 tons/hr	Partial enclosure & wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHST	-----	Coal stackers (stacking to storage pile)	1,500 tons/hr	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHRS	-----	Breaker reject storage silo	250 tons	Vent filter	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
LTU	LTUS	Limestone truck unloading facility	325 tons/hr	Wheelabrator model 120 TA-SB Modular Jet 3 continuous automatic pulse type dust collector	LTUSB	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHLS	-----	Limestone stacking to storage piles	325 tons/hr	Enclosure	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHLR	-----	Limestone reclaim system	400 tons/hr	Enclosure	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)

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Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
MHLC	-----	Six limestone crushers	20 tons/hr, each crusher	Vented to CFB boilers	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHBU	-----	Biomass truck unloading facility	300 tons/hr	Partial enclosure & wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHBR	-----	Biomass reclaim system	150 tons/hr	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
AHHT	-----	Ash hauling (trucks)	40 tons/truck	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
AHAP	-----	Ash placement in Solid Waste Management Facility (SWMF)	N/A	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHHR	-----	Facility haul roads	N/A	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHSP	-----	Storage pile activity	N/A	Wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
AHSC	-----	Soil cover operation at the SWMF	N/A	Vegetative cover/wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)
MHTU	-----	Railcar coal unloading facility (not constructed)	1,500 tons/hr	Partial enclosure & wet suppression	N/A	PM/PM-10/ PM-2.5	PSD permit dated 6/30/08 (as amended 1/29/09, 5/24/11 and 10/23/12)

EMISSIONS INVENTORY

The facility began normal operation on September 1, 2012; therefore, data are not sufficient to reflect annual emissions.

EMISSION UNIT APPLICABLE REQUIREMENTS – Fuel Burning Equipment: Circulating Fluidized Bed Boilers (CFB1 and CFB2), Auxiliary Boiler (AUX), Emergency Generator Engine (EDG) and Emergency Fire Pump Engine (EFP)

Limitations

The auxiliary boiler has not been constructed; however, the unit is permitted through the Virginia new source review program and is part of a major source subject to Title V permitting requirements. Therefore, all requirements applicable to the boiler are included in the Article 3 permit.

The following limitations are Best Available Control Technology (BACT) requirements from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 2: Particulate matter emissions from each CFB boiler shall be controlled by a fabric filter baghouse.

PSD Condition 3: Sulfur dioxide and sulfuric acid mist emissions from the CFB boilers shall be controlled by limestone injection into each boiler and a flue gas desulfurization system for each boiler.

PSD Condition 4: Emissions of nitrogen oxides from the CFB boilers shall be controlled by selective non-catalytic reduction using ammonia injection for each boiler.

PSD Condition 5: Carbon monoxide and volatile organic compound emissions from the CFB boilers, auxiliary boiler, emergency generator engine and fire pump engine shall be controlled by good combustion practices.

PSD Condition 6: Emissions of nitrogen oxides from the auxiliary boiler shall be controlled by low-NOx burners.

PSD Condition 7: Emissions of nitrogen oxides from the emergency generator engine and the fire pump engine shall be controlled by ignition timing retard or an equivalent control technology or method, at a minimum.

PSD Condition 19: The auxiliary boiler shall not operate more than 4,000 hours per year.

PSD Condition 20: The emergency generator engine and the fire pump engine shall be certified to the emission standards in 40 CFR 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, National Fire Protection Association nameplate) engine power.

PSD Condition 21: Operation of the emergency generator engine and fire pump engine for the purpose of maintenance checks and readiness testing shall not exceed 100 hours per year, each, provided the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. If additional time is needed for maintenance checks and readiness testing, the permittee shall submit a written request for additional time to the Director, Southwest Regional Office prior to the additional operation. A written request is not required if the permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency engines more than 100 hours per year. The engines shall not be operated more than 500 hours per year, each for any reason, including maintenance, testing and emergency purposes.

PSD Condition 22: Heat input to each CFB boiler shall not exceed $27,436,320 \times 10^6$ Btu per year.

PSD Condition 23: The approved fuels for the CFB boilers are bituminous coal, coal refuse, coke-derived solid fuel, wood/bark, distillate oil and diesel fuel.

PSD Condition 24: In the event the permittee desires to burn waste coal, it shall present a plan to DEQ, in consultation with the Virginia Department of Mines, Minerals and Energy (DMME), for approval detailing the proposed pile or piles to be burned. The DEQ, in consultation with DMME, may approve, reject, or amend the plan, including requiring the permittee to burn or remove and store safely all coal from one or more piles. The DEQ shall not require through this approval process, the use of more waste coal than would otherwise be burned in the facility.

PSD Condition 26: After the first 36 months of commercial operation, the company shall use at least 5 percent biomass per year. Starting in the fifth year of commercial operation, the company shall increase the use of biomass by an additional 1 percent per year up to no less than 10 percent per year thereafter.

PSD Condition 27: The throughput of wood/bark to each CFB boiler shall not exceed 685,000 tons per year.

PSD Condition 28: The approved fuels for the emergency generator engine, fire pump engine and auxiliary boiler are distillate oil and diesel fuel.

PSD Condition 32: Emissions from the operation of the CFB boilers shall not exceed the following limits:

	<u>Each Boiler (lb/MMBtu)</u>	<u>Each Boiler (lb/hr)</u>	<u>Combined Total (tons/yr)</u>
Filterable Particulate Matter (PM)			246.92
3-hour average	0.010	31.32	
30-day rolling average	0.009		
Total PM-10 (filterable & condensable)			329.24
3-hour average	0.012	37.58	
Total PM-2.5 (filterable & condensable)			329.24
3-hour average	0.012	37.58	
Sulfur Dioxide			603.6
3-hour average	0.035	109.62	
24-hour average	0.029	90.83	
30-day rolling average	0.022	0.21 lb/MWh (gross)	
Nitrogen Oxides (as NO ₂)			1,920.54
30-day rolling average	0.07	219.24	
Carbon Monoxide			4,115.45
30-day rolling average	0.15	469.80	
Volatile Organic Compounds			137.18
3-hour average	0.005	15.66	
Sulfuric Acid Mist (H ₂ SO ₄)			96.03
3-hour average	0.0035	10.96	
Hydrogen Fluoride			12.90
3-hour average	0.00047	1.47	
Hydrogen Chloride			181.07
3-hour average	0.0066	20.67	
Mercury	-----	-----	

The emission limits for CO and HCl in condition 13 of the MACT permit are more stringent than those in the PSD permit, and therefore, are included in the Article 3 permit instead of the PSD permit limits for those pollutants.

PSD Condition 33: Emissions from the operation of the auxiliary boiler shall not exceed the following limits:

	<u>lb/MMBtu</u>	<u>lb/hr</u>	<u>tons/yr</u>
Total PM-10	0.024	4.56	9.12
Total PM-2.5	0.024	4.56	9.12
Sulfur Dioxide	0.202	38.38	76.76
Nitrogen Oxides (as NO ₂)	0.12	22.80	45.60
Carbon Monoxide	0.040	7.60	15.20
Volatile Organic Compounds	0.004	0.76	1.52

PSD Condition 34: Emissions from the operation of the emergency generator engine shall not exceed the following limits:

	<u>g/hp-hr</u>	<u>lb/hr</u>	<u>tons/yr</u>
Particulate Matter/PM-10	0.075		
Nitrogen Oxides (as NO ₂)	2.6	5.73	1.43
Carbon Monoxide	2.6	5.73	1.43
Volatile Organic Compounds	0.3		

PSD Condition 35: Emissions from the operation of the fire pump engine shall not exceed the following limits:

	<u>g/hp-hr</u>	<u>lb/hr</u>	<u>tons/yr</u>
Particulate Matter/PM-10	0.15		
Nitrogen Oxides plus Volatile Organic Compounds	4.8	12.70	3.17
Carbon Monoxide	2.6	6.89	1.72

PSD Condition 42: Visible emissions from the common exhaust stack with individual flues for the CFB boilers and auxiliary boiler shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity.

PSD Condition 43: Visible emissions from the emergency generator engine exhaust stack and fire pump engine exhaust stack shall not exceed 10 percent opacity.

The following limitations are Maximum Available Control Technology (MACT) requirements from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). Condition numbers listed below are from the MACT permit.

MACT Condition 2: Particulate hazardous air pollutant emissions from each CFB boiler shall be controlled by a fabric filter baghouse.

MACT Condition 3: Hydrogen chloride and hydrogen fluoride emissions from the CFB boilers shall be controlled by limestone injection into each boiler, a flue gas desulfurization system for each boiler, and a fabric filter baghouse for each boiler.

MACT Condition 4: Volatile organic hazardous air pollutant emissions from the CFB boilers shall be controlled by good combustion practices, an activated carbon injection system for each boiler and a fabric filter baghouse for each boiler.

MACT Condition 5: Mercury emissions from the CFB boilers shall be controlled by a flue gas desulfurization system for each boiler, an activated carbon injection system for each boiler, and a fabric filter baghouse for each boiler.

MACT Condition 7: Heat input to each CFB boiler shall not exceed 27,436,320 × 10⁶ Btu per year.

MACT Condition 8: The approved fuels for the CFB boilers are bituminous coal, coal refuse, coke-derived solid fuel, wood/bark, distillate oil and diesel fuel.

MACT Condition 10: The throughput of coal, coal refuse and coke-derived solid fuel to each CFB boiler shall not exceed 1,760,760 tons per year.

MACT Condition 11: The throughput of wood/bark to each CFB boiler shall not exceed 685,000 tons per year.

MACT Condition 13: Emissions from the operation of the CFB boilers shall not exceed the following limits:

	<u>Each Boiler (lb/MMBtu)</u>	<u>Each Boiler (lb/hr)</u>	<u>Combined Total (tons/yr)</u>
Filterable Particulate Matter (PM)			246.92
3-hour average	0.010	31.32	
30-day rolling average	0.009		
Total PM-10 (filterable & condensable)			329.24
3-hour average	0.012	37.58	

	<u>Each Boiler (lb/MMBtu)</u>	<u>Each Boiler (lb/hr)</u>	<u>Combined Total (tons/yr)</u>
Total PM-2.5 (filterable & condensable) 3-hour average	0.012	37.58	329.24
Carbon Monoxide 30-day rolling average	0.10	313.2	2,743.63
Volatile Organic Compounds 3-hour average	0.005	15.66	137.18
Hydrogen Fluoride 3-hour average	0.00047	1.47	12.90
Hydrogen Chloride 3-hour average	0.0029	9.08	79.54
Mercury	(lb/MW hr) 0.00000088	(0.090 lb/TBtu equivalent)	

MACT Condition 14: Visible emissions from the common exhaust stack with individual flues for the CFB boilers shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity.

MACT Condition 15: The permittee shall comply with all applicable requirements contained in 40 CFR Part 63, Subpart A.

As electric utility steam generating units constructed after September 18, 1978, 9 VAC 5-50 Article 5, Subpart Da of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Da – Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978, apply to the CFB boilers:

40 CFR 60.42Da(c)(2): Emission standard for PM of 0.015 lb/MMBtu heat input;

40 CFR 60.43Da(g): Compliance with emission limits under this section are determined on a 30-day rolling average basis;

40 CFR 60.43Da(h): The applicable standard is determined by proration using the specified formula when different fuels are combusted simultaneously;

40 CFR 60.43Da(i)(1)(i): Emission standard for SO₂ of 1.4 lb/MWh gross energy output;

40 CFR 60.44Da(e)(1): Emission standard for NO_x of 1.0 lb/MWh gross energy output;

The above emission standards are not specifically included in the Article 3 permit since the BACT emission limits from Condition 32 of the PSD permit are more stringent.

40 CFR 60.48Da(a): Emission standards apply at all times except during periods of startup, shutdown, or malfunction;

40 CFR 60.48Da(b): Compliance with the SO₂ and NO_x emission limits is based on the average emission rate for 30 successive boiler operating days;

40 CFR 60.48Da(c): For the initial performance test, compliance with SO₂, NO_x and CO emission limits is based on the average emission rate for the first 30 successive boiler operating days;

40 CFR 60.48Da(d): Compliance with 30-boiler operating day rolling average SO₂ and NO_x emissions limits is determined by calculating the arithmetic average of all hourly emission rates for the 30 successive boiler operating days;

40 CFR 60.48Da(f): Compliance with daily average PM emission limit is determined by calculating the arithmetic average of all hourly emission rates for each boiler operating day;

40 CFR 60.48Da(h): Compliance determined according to applicable procedures in section 7 of Method 19 of appendix A if minimum quantity of emission data not obtained;

40 CFR 60.48Da(i): Compliance provisions for sources subject to 60.44Da(e)(1);

40 CFR 60.48Da(m): Compliance provisions for source subject to 60.43Da(i)(1)(i);

40 CFR 60.48Da(p): Compliance provisions alternative to those in paragraph (o) applicable to sources installing a PM CEMS; and

PSD and MACT permit conditions pertaining to testing, CEMS and reporting for the CFB boilers require the permittee to conduct performance tests, install, maintain and operate CEMS and report and reduce data in accordance with applicable Virginia air quality standards and each applicable subpart of federal standards of performance for new stationary sources, which includes the above compliance determination

procedures, reference methods and compliance alternatives. Therefore, while the above requirements from §60.48Da are included in the Article 3 permit, they may not appear as specifically worded in the subpart.

40 CFR 60.48Da(s): Affirmative defense for exceedance of emissions limit during malfunction.

Provisions for affirmative defense for exceedance of emissions limits during a malfunction are included in the General Conditions section of the Article 3 permit.

As existing coal-fired electric utility steam generating units (EGU), the following provisions of 40 CFR Part 63, Subpart UUUUU – National Emissions Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units apply to the CFB boilers:

40 CFR 63.9984(b): Existing EGUs must comply with the subpart no later than April 16, 2015;

40 CFR 63.9991(a)(1) and (c): Must meet the following emission limits as indicated in Table 2 for existing coal-fired units designed for low rank virgin coal and equipped with flue gas desulfurization, SO₂ CEMS and mercury sorbent trap monitoring :

Filterable PM	3.0E-2 lb/MMBtu
Sulfur Dioxide	2.0E-1 lb/MMBtu
Mercury	4.0E0 lb/TBtu,

and the following work practice standards indicated in Table 3:

Conduct a tune-up of the EGU burner and combustion controls at least each 36 calendar months, or each 48 calendar months if neural network combustion optimization software is employed; and

Operate all CMS during startup and shutdown according to conditions and procedures specified in Table 3;

These emission standards are not specifically included in the Article 3 permit since the BACT emission limits from Condition 32 of the PSD permit and the MACT emission limits from Condition 13 of the MACT permit are more stringent.

40 CFR 63.10000(a): Emission limits and operating limits apply at all times except during periods of startup or shutdown; however, for coal-fired EGUs work practice requirements apply during startup or shutdown;

40 CFR 63.10000(b): At all times the affected source, including associated air pollution control equipment and monitoring equipment must be operated in a manner consistent with safety and good air pollution control practices for minimizing emissions;

Provisions for good air pollution control practices are included in the Article 3 permit from Condition 15 of the MACT permit and the General Conditions section of the Article 3 permit.

40 CFR 63.10005(j): Follow work practice requirements for startup and shutdown as indicated in Table 3 of the subpart;

40 CFR 63.10011(f)(1) & (2): Determine cleanest fuel, either natural gas or distillate oil, for use during startup and shutdown and use that fuel during those periods; and

40 CFR 63.10011(g): Follow startup and shutdown requirements in Table 3 for coal-fired EGU.

As an industrial steam generating unit constructed after June 19, 1984, and that has a heat input capacity greater than 100 MMBtu/hr, 9 VAC 5-50 Article 5, Subpart Db of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Db-Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units apply to the auxiliary boiler:

40 CFR 60.42b(k)(2): Units firing only very low sulfur oil with a potential SO₂ emission rate of 0.32 lb/MMBtu heat input or less are exempt from the SO₂ emissions limit in paragraph (k)(1);

40 CFR 60.43b(f): Twenty percent opacity limit except for one 6-minute period per hour of not more than 27 percent;

The above opacity standard is not specifically included in the Article 3 permit since the BACT opacity limit from Condition 42 of the PSD permit is more stringent.

40 CFR 60.43b(g) and 60.46b(a): Opacity standard applies at all times, except during periods of startup, shutdown, or malfunction;

40 CFR 60.43b(h)(5): Units combusting only oil that contains no more than 0.30 weight percent sulfur and not using a post-combustion technology to reduce SO₂ or PM emission is not subject to the PM limits in (h)(1);

40 CFR 60.44b(h) and 60.46b(a): NO_x standards apply at all times including periods of startup, shutdown, or malfunction;

40 CFR 60.44b(i): Compliance with NO_x limits is determined on a 30-day rolling average basis; and

40 CFR 60.44b(l)(1): NO_x emission limit of 0.20 lb/MMBtu heat input.

The above NO_x emission standard is not specifically included in the Article 3 permit since the BACT emission limit from Condition 33 of the PSD permit is more stringent.

As a new stationary reciprocating internal combustion engine with a site rating of more than 500 brake horsepower located at a major source of hazardous air pollutants, the following provisions of 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines apply to the emergency generator engine:

40 CFR 63.6590(b)(1)(i): The affected source does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).

As a new emergency or limited use stationary reciprocating internal combustion engine with a site rating of less than 500 brake horsepower located at a major source of hazardous air pollutants, the following provisions of 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines apply to the fire pump engine:

40 CFR 63.6590(c)(6): An affected source must meet the requirements of this part by meeting the requirements of 40 CFR part 60 Subpart IIII. No further requirements apply for such engines under this part.

As a 2007 model year and later emergency stationary compression ignition engine with a displacement of less than 30 liters per cylinder that is not a fire pump engine, the following provisions of 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines apply to the emergency generator engine:

40 CFR 60.4205(b): Emissions standards indicated in §60.4202;

The above opacity standard is not specifically included in the Article 3 permit since the BACT opacity limit from Condition 43 of the PSD permit is more stringent.

40 CFR 60.4206: Operate and maintain engine that achieves emission standards over entire life of engine;

40 CFR 60.4207(b): Use diesel fuel meeting requirements of 40 CFR 80.510(b);
40 CFR 60.4211(e): Operating restrictions; and

40 CFR 60.4212 (c): Exhaust emission limits.

As a fire pump stationary compression ignition engine with a displacement of less than 30 liters per cylinder, the following provisions of 40 CFR Part 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines apply to the fire pump engine:

40 CFR 60.4205(c): Emissions standards indicated in Table 4 of the subpart;

40 CFR 60.4206: Operate and maintain engine that achieves emission standards over entire life of engine;

40 CFR 60.4207(b): Use diesel fuel meeting requirements of 40 CFR 80.510(b);
and

40 CFR 60.4211(e): Operating restrictions.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 80, Part II, Article 3 – Acid Rain Operating Permits

The Phase II Acid Rain Permit for this facility, issued pursuant to 9 VAC 5 Chapter 80, Part II, Article 3, *Acid Rain Operating Permits* (9 VAC 5-80-360 et seq), in effect from January 1, 2011 through December 31, 2015, is incorporated by reference into the Title V permit. A copy of the acid rain permit is attached to the Title V permit.

Emissions from the two CFB boilers at the Virginia City Hybrid Energy Center may not exceed any allowances that it holds under its Title IV acid rain permit. No permit revision will be required for increases in emissions that are authorized by allowances acquired pursuant to Title IV of the Clean Air Act or 9 VAC 5-80-360, et. seq., provided that such increases do not require a permit revision under any other applicable requirement. The Virginia City Hybrid Energy Center may hold any number of allowances authorized by its acid rain permit, but these allowances may not be used as a defense for a non-compliance with any other applicable requirement. Any allowance authorized by the acid rain permit must be accounted for according to procedures established under 9 VAC 5-80-360, et. seq. or under regulations pursuant to Title IV of the Clean Air Act. Nothing in the Title V permit may alter or affect the applicable requirements of the acid rain program pursuant to Title IV of the Clean Air Act. Should an applicable requirement of the Clean Air Act, or of this permit, be more stringent than an applicable requirement from state or federal regulations promulgated under Title IV of the Clean Air Act, both provisions will appear in the Title V permit and both will be enforceable by the Administrator of the U.S. EPA (40 CFR Part 70, section 70.6(a)).
9 VAC 5 Chapter 140, Part I – NO_x Budget Trading Program

The NOx Budget Trading Program was the original means by which the Virginia Air Pollution Control Board addressed the transport of ozone-generating pollutants across state lines as required by EPA's NOx SIP Call rule. The NOx SIP Call was superseded by EPA's Clean Air Interstate Rule which is implemented through 9 VAC 5, Chapter 140, Part II through IV. Therefore, the provisions of the NOx Budget Trading Program are not included in the Article 3 permit.

9 VAC 5, Chapter 140, Part II – NOx Annual Trading Program (Clean Air Interstate Rule (CAIR))

A review of the CAIR permit application submitted by Virginia Electric and Power Company indicates each of the CFB boilers is subject to the NOx Annual, SO₂, and NOx Ozone Season CAIR programs. Therefore, the Title V permit will contain a condition requiring the permittee to 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.*, 9 VAC 5-140-5010 *et seq.*, and 40 CFR Part 96) by the compliance date in the respective Part of 9 VAC 5 Chapter 140. The CAIR permit and permit application will be included in the Title V permit as an attachment.

Monitoring

The monitoring requirements included in the Title V operating permit meet Part 70 requirements.

The following monitoring requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 25: The permittee shall sample and analyze the fuel as fired in each CFB boiler for fluorides, chlorides, sulfur, and Btu content no less than once each calendar week.

PSD Condition 29: The permittee shall obtain a certification from the fuel supplier with each shipment of coal, coal refuse, coke-derived solid fuel, wood/bark, distillate oil and diesel fuel.

The fuel shipment certification plan as required in PSD Condition 29 has been submitted by the permittee, therefore, this requirement has been fulfilled and is not included in the Article 3 permit.

PSD Condition 46: The permittee shall install, calibrate, maintain, operate and record the output of continuous emission monitoring systems (CEMS) for measuring emissions of sulfur dioxide, nitrogen oxides and carbon monoxide from each CFB

boiler, and either the oxygen or carbon dioxide content of the flue gases from each CFB boiler.

PSD Condition 47: The permittee shall install, calibrate, maintain, operate and record the output of continuous flow monitoring systems for measuring the volumetric flow rate of exhaust gases discharged to the atmosphere from each CFB boiler.

PSD Condition 48: The permittee shall install, calibrate, maintain, and operate a CEMS or sorbent trap monitoring system to measure and record the concentration of mercury in the exhaust gases from each CFB boiler.

PSD Condition 49: The permittee shall install, certify, maintain, operate and record the output of CEMS for measuring filterable PM emissions from each CFB boiler.

PSD Condition 50: The permittee shall install, calibrate, maintain, operate and record the output of CEMS for measuring emissions of nitrogen oxides and either carbon dioxide or oxygen from the auxiliary boiler.

PSD Condition 51: The permittee shall monitor particulate matter emissions from the auxiliary boiler using a COMS or a CEMS for measuring CO emissions.

PSD Condition 52: The permittee shall prepare and submit for approval a unit-specific monitoring plan for each monitoring system for the CFB boilers and the auxiliary boiler.

The permittee has submitted the monitoring plan; therefore, this requirement is not included in the Article 3 permit. However, the requirement to comply with the plan is included in the Article 3 permit.

PSD Condition 53: Performance evaluations of the continuous monitoring systems shall be conducted.

The permittee has completed the performance evaluations required by PSD condition 53; therefore, this requirement no longer applies and is not included in the Article 3 permit.

PSD Condition 54: A CEMS/COMS quality control program which meets the requirements of 40 CFR 60.13 and Appendix B or F as applicable shall be implemented for all continuous monitoring systems except that Relative Accuracy Test Audits (RATA's) may be required less frequently if approved by DEQ.

PSD Condition 55: The permittee shall install, calibrate, maintain, and operate a

meter measuring gross electrical output of the facility in megawatt hours (MWh), and a meter measuring steam production for each CFB boiler.

PSD Condition 56: The permittee shall install, calibrate, maintain, and continuously operate in accordance with the manufacturer's recommendations a non-resettable hour meter to record the hours of operation of the emergency generator engine and fire pump engine.

PSD Condition 57: The permittee shall install, calibrate, maintain, and operate a system for monitoring the throughput of each type of fuel to each CFB boiler and of fuel oil to the auxiliary boiler.

PSD Condition 66: The average nitrogen oxides emission rate for each CFB boiler shall be used to demonstrate compliance with the emission limit of 0.07 lb/MMBtu applicable at loads equal to or greater than 75 percent of maximum. The permittee shall calculate the average nitrogen oxides emission rate for each CFB boiler using all valid CEMS values measured at loads of 75 percent or greater for each rolling 30-day period using the specified formula.

The 30-day load weighted average nitrogen oxides emission rate for each CFB boiler shall be used to demonstrate compliance with the emission limit calculated in accordance with Condition 32, for loads less than 75 percent of maximum. The permittee shall calculate the 30-day load weighted average nitrogen oxides emission rate for each CFB boiler using all valid CEMS values measured at all loads greater than zero using the specified formula.

PSD Condition 67: The average carbon monoxide emission rate for each CFB boiler shall be used to demonstrate compliance with the emission limit of 0.15 lb/MMBtu applicable at loads equal to or greater than 75 percent of maximum. The permittee shall calculate the average carbon monoxide emission rate for each CFB boiler using all valid CEMS values measured at loads of 75 percent or greater for each rolling 30-day period using the specified formula.

The 30-day load weighted average carbon monoxide emission rate for each CFB boiler shall be used to demonstrate compliance with the emission limit calculated in accordance with Condition 32, for loads less than 75 percent of maximum. The permittee shall calculate the 30-day load weighted average carbon monoxide emission rate for each CFB boiler using all valid CEMS values measured at all loads greater than zero using the specified formula.

Both PSD permit Condition 67 and MACT permit Condition 28 require calculation of the average carbon monoxide emission rate; however, MACT permit Condition 28 incorporates the more stringent emission limit of 0.10 lb/MMBtu in the specified equation, and therefore, is included in the Article 3 permit instead of PSD permit

Condition 67.

The following monitoring requirements are from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). Condition numbers listed below are from the MACT permit.

MACT Condition 9: The permittee shall sample and analyze the fuel as fired in each CFB boiler for mercury, fluorides, chlorides, sulfur, and Btu content no less than once each calendar week.

MACT Condition 12: The permittee shall obtain a certification from the fuel supplier with each shipment of coal, coal refuse, coke-derived solid fuel, wood/bark, distillate oil and diesel fuel.

The fuel shipment certification plan as required in MACT Condition 12, has been submitted by the permittee, therefore, this requirement has been fulfilled and is not included in the Article 3 permit.

MACT Condition 16: The permittee shall install, calibrate, maintain, operate and record the output of continuous emission monitoring systems (CEMS) for measuring emissions of carbon monoxide from each CFB boiler.

MACT Condition 17: The permittee shall install, calibrate, maintain, operate and record the output of continuous flow monitoring systems for measuring the volumetric flow rate of exhaust gases discharged to the atmosphere from each CFB boiler.

MACT Condition 18: The permittee shall install, calibrate, maintain, and operate a CEMS or sorbent trap monitoring system to measure and record the concentration of mercury in the exhaust gases from each CFB boiler.

MACT Condition 20: Performance evaluations of the continuous monitoring systems shall be conducted.

The permittee has completed the performance evaluations required by MACT condition 20; therefore, this requirement no longer applies and is not included in the Article 3 permit.

MACT Condition 21: A CEMS/COMS quality control program which meets the requirements of 40 CFR 60.13 and Appendix B or F as applicable shall be implemented for all continuous monitoring systems except that Relative Accuracy Test Audits (RATA's) may be required less frequently if approved by DEQ.

MACT Condition 22: The permittee shall install, calibrate, maintain, and operate a

meter measuring gross electrical output of the facility in megawatt hours (MWh), and a meter measuring steam production for each CFB boiler.

MACT Condition 23: The permittee shall install, calibrate, maintain, and operate a system for monitoring the throughput of each type of fuel to each CFB boiler.

MACT Condition 28: The average carbon monoxide emission rate for each CFB boiler shall be used to demonstrate compliance with the emission limit of 0.10 lb/MMBtu applicable at loads equal to or greater than 75 percent of maximum. The permittee shall calculate the average carbon monoxide emission rate for each CFB boiler using all valid CEMS values measured at loads of 75 percent or greater for each rolling 30-day period using the specified formula.

The 30-day load weighted average carbon monoxide emission rate for each CFB boiler shall be used to demonstrate compliance with the emission limit calculated in accordance with Condition 13, for loads less than 75 percent of maximum. The permittee shall calculate the 30-day load weighted average carbon monoxide emission rate for each CFB boiler using all valid CEMS values measured at all loads greater than zero using the specified formula.

Both PSD permit Condition 67 and MACT permit Condition 28 require calculation of the average carbon monoxide emission rate; however, MACT permit Condition 28 incorporates the more stringent emission limit of 0.10 lb/MMBtu in the specified equation, and therefore, is included in the Article 3 permit instead of PSD permit Condition 67.

As electric utility steam generating units constructed after September 18, 1978, 9 VAC 5-50 Article 5, Subpart Da of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Da-Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978, apply to the CFB boilers:

40 CFR 60.49Da(b)(2): Install SO₂ CEMS to monitor emissions as discharged to the atmosphere;

40 CFR 60.49Da(b)(4)(i): For SO₂ CEMS installed to meet part 75, must install CO₂ or O₂ monitors at the same location;

40 CFR 60.49Da(b)(4)(iii): For SO₂ CEMS installed to meet part 75, must meet reporting requirements of §60.51Da;

40 CFR 60.49Da(c)(1) or (c)(2): Install a NO_x CEMS or, if a NO_x CEMS is installed to meet part 75 requirements, that CEMS may be used to meet the requirements of this section, except the owner must meet the requirements of §60.51Da;

40 CFR 60.49Da(e): Operate CEMS and record data during all periods including startup, shutdown, and malfunction, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments;

40 CFR 60.49Da(f)(2): Minimum data requirements;

40 CFR 60.49Da(g): Emission calculation procedures;

40 CFR 60.49Da(h): CEMS data supplement procedures;

40 CFR 60.49Da(i): CEMS performance evaluation procedures;

40 CFR 60.49Da(j): Alternative CEMS performance evaluation procedures;

PSD and MACT permit conditions pertaining to testing, CEMS and reporting for the CFB boilers requires the permittee to conduct performance tests, install, maintain and operate CEMS and report and reduce data in accordance with applicable Virginia air quality standards and each applicable subpart of federal standards of performance for new stationary sources, which includes the above CEMS performance evaluation and operation procedures, data handling and calculation procedures and alternative procedures. Therefore, while the above requirements from §60.48Da paragraphs (e) – (j) are included in the Article 3 permit, they may not appear as specifically worded in the subpart.

40 CFR 60.49Da(k)(1): Procedures for determining gross energy output and installation of a wattmeter;

40 CFR 60.49Da(l) or (m): Flow monitoring system requirements;

40 CFR 60.49Da(s): Unit-specific monitoring plan requirements;

40 CFR 60.49Da(t) and (v): PM CEMS requirements; and

40 CFR 60.49Da(w): CEMS performance specifications.

As existing coal-fired electric utility steam generating units (EGU), the following provisions of 40 CFR Part 63, Subpart UUUUU – National Emissions Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units apply to the CFB boilers:

40 CFR 63.10000(c)(1)(iv): Conduct initial performance tests and monitor continuous performance through either use of a particulate matter continuous parametric monitoring system (PM CPMS), a PM CEMS, or quarterly performance

testing;

40 CFR 63.10000(c)(1)(iv)(B): Monitor continuous performance through use of a PM CEMS certified through specified procedures;

40 CFR 63.10000(c)(1)(v): Since each EGU uses dry flue gas desulfurization, install and operate a SO₂ CEMS as an alternative to HCl CEMS;

40 CFR 63.10000(c)(1)(vi): Demonstrate compliance with mercury standard through use of a sorbent trap;

40 CFR 63.10000(e): Perform periodic tune-ups of EGUs according to §63.10021(e);

40 CFR 63.10001(a) and (b): Affirmative defense criteria and reporting;

Provisions for affirmative defense for exceedance of emissions limits during a malfunction are included in the General Conditions section of the Article 3 permit.

40 CFR 63.10010(a)(2): CEMS location requirements for units utilizing a common stack with other affected units;

The permittee has installed CEMS at locations meeting the above requirements; therefore, §63.10010(a)(2) is not cited in the Article 3 permit.

40 CFR 63.10010(b): Oxygen/Carbon dioxide CEMS requirements;

40 CFR 63.10010(c): Stack gas flow rate monitor requirements;

40 CFR 63.10010(f)(1) – (4): Sulfur dioxide CEMS requirements;

40 CFR 63.10010(g): Mercury sorbent trap monitoring system requirements;

40 CFR 63.10010(i)(1) – (5): Particulate matter CEMS requirements;

40 CFR 63.10020(a): Monitor and collect data according to this section and the site-specific monitoring plan required by §63.10000(d);

40 CFR 63.10020(b): Operate monitoring systems and collect data at all required time intervals the EGU is operating except for periods of monitor malfunctions and QA/QC checks;

40 CFR 63.10020(c): Do not use data during EGU startup/shutdown or monitor

malfunction or QA/QC checks;

40 CFR 63.10020(d): Failure to collect data is a deviation of monitoring requirements except for periods of monitoring malfunctions, QA/QC, etc.;

40 CFR 63.10021(a): Demonstrate continuous compliance with applicable standards in this subpart according to monitoring specified in Table 6 and 7 and paragraphs (b) through (g) of this section;

40 CFR 63.10021(b): Continuous compliance requirements for CEMS and sorbent traps; and

40 CFR 63.10021(e): Conduct required periodic EGU performance tune-ups as specified in paragraphs (e)(1) through (e)(9) of this section.

PSD and MACT permit conditions pertaining to testing, CEMS and reporting for the CFB boilers requires the permittee to conduct performance tests, install, maintain and operate CEMS and report and reduce data in accordance with applicable Virginia air quality standards and each applicable subpart of federal emission standards for hazardous air pollutants, which includes the above CEMS performance evaluation and operation procedures, data handling and calculation procedures and alternative procedures. Therefore, while the above requirements from MACT Subpart UUUUU are included in the Article 3 permit, they may not appear as specifically worded in the subpart.

As an industrial steam generating unit constructed after June 19, 1984, and that has a heat input capacity greater than 100 MMBtu/hr, 9 VAC 5-50 Article 5, Subpart Db of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Db-Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units apply to the auxiliary boiler:

40 CFR 60.46b(i): Maintain fuel records according to §60.49b(r) to demonstrate compliance with PM emission requirements in §60.43b(h)(5);

40 CFR 60.47b(f): Units combusting very low sulfur oil are not subject to SO₂ emission monitoring requirements under paragraph (a) of this section if the owner maintains fuel records described in §60.49b(r);

40 CFR 60.48b(a): Except as provided in paragraph (j), opacity shall be monitored using a COMS;

40 CFR 60.48b(b)(1): Install CEMS for measuring NO_x and O₂ or CO₂;

40 CFR 60.48b(c): CEMS shall be operated and data recorded during all periods of

facility operation except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments;

40 CFR 60.48b(d): 1-hour NO_x emission rate data requirements;

40 CFR 60.48b(e)(2)(i): NO_x span value is 500 ppm;

40 CFR 60.48b(f): Minimum data requirements for NO_x emissions;

40 CFR 60.48b(g): Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section; and

40 CFR 60.48b(j): May install a CO CEMS as alternative to a COMS.

PSD permit conditions pertaining to testing, CEMS and reporting for the auxiliary boiler requires the permittee to conduct performance tests, install, maintain and operate CEMS and report and reduce data in accordance with applicable Virginia air quality standards and each applicable subpart of federal standards of performance for new stationary sources, which includes the above CEMS performance evaluation and operation procedures, data handling and calculation procedures and alternative procedures. Therefore, while the above requirements from §60.48b paragraphs (d), (f) and (g) are included in the Article 3 permit, they may not appear as specifically worded in the subpart.

A review of 40 CFR Part 64 – Compliance Assurance Monitoring (CAM) indicates an emission unit is subject to CAM if it meets all of the following criteria, as indicated by 40 CFR 64.2(a), on a pollutant-by-pollutant basis:

- a. Emits or has the potential to emit uncontrolled quantities of one or more regulated air pollutants at or above major source levels,
- b. Is subject to one or more emissions limitations for the regulated air pollutants for which it is major before control, and
- c. Uses an add-on control device to achieve compliance with the emissions limitations.

Each CFB boiler meets the above criteria for emissions of PM, NO_x, SO₂, and HCl. A continuous compliance determination method (CEMS), as defined in §64.1, is required for monitoring emissions of PM, NO_x and SO₂ from the CFB boilers; therefore, in accordance with 40 CFR 64.2(b)(1)(vi), CAM does not apply to the CFB boilers for those pollutants. The HCl emissions limit stems from section 112(g) of the Clean Air Act and therefore is an exempt emission limitation in accordance with 40 CFR 64.2(b)(1)(i) and not subject to CAM.

As stationary compression ignition engines, the following provisions of 40 CFR Part 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines apply to both the emergency generator engine and fire pump engine:

40 CFR 60.4209(a): Install a non-resettable hour meter;

40 CFR 60.4211(a): Operate and maintain engine according to manufacturer instructions or procedures; and

40 CFR 60.4211(c): Comply by purchasing an engine certified to the emission standards in §60.4205(b) or (c), as applicable.

As a fire pump stationary compression ignition engine with a displacement of less than 30 liters per cylinder, the following provisions of 40 CFR Part 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines apply to the fire pump engine:

40 CFR 60.4205(c): Emissions standards indicated in Table 4 of the subpart;

40 CFR 60.4206: Operate and maintain engine that achieves emission standards over entire life of engine; and

40 CFR 60.4207(b): Use diesel fuel meeting requirements of 40 CFR 80.510(b)

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit.

The following recordkeeping requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). The condition number listed below is from the PSD permit.

PSD Condition 70: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but are not limited to:

- a. Monthly and annual hours of operation of the auxiliary boiler, the emergency generator engine and the fire pump engine.
- b. Monthly and annual heat input to each CFB boiler.

- c. Monthly and annual throughput of each type of fuel and limestone to each CFB boiler.
- d. Emissions calculations, based on data from fuel analyses, stack tests and CEMS, for each CFB boiler and the auxiliary boiler.
- e. Nitrogen oxides and carbon monoxide emission limit calculations.
- f. Nitrogen oxides and carbon monoxide emission rate calculations.
- g. Daily throughput of fuel oil to the auxiliary boiler.
- h. All fuel supplier certifications.
- i. Results of each as-fired fuel sample analysis.
- j. Annual sulfur content of coal, coal refuse and coke-derived solid fuel.
- k. Annual capacity factor for the auxiliary boiler.
- l. Information required in each Excess Emission Report and continuous monitoring system Semi-Annual Report.
- m. Gross electrical output, in MWh, for the facility and steam production for each CFB boiler.
- n. Continuous monitoring system calibrations and calibration checks, percent operating time, excess emissions, and adjustments and maintenance performed on continuous monitoring systems and devices.
- o. Results of all stack tests, visible emission evaluations and performance evaluations.

The following recordkeeping requirements are from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). The condition number listed below is from the MACT permit.

MACT Condition 29: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but are not limited to:

- a. Monthly and annual heat input to each CFB boiler.

- b. Monthly and annual throughput of each type of fuel and limestone to each CFB boiler.
- c. Emissions calculations, based on data from fuel analyses, stack tests and CEMS, for each CFB boiler.
- d. Carbon monoxide emission limit calculations.
- e. Carbon monoxide emission rate calculations.
- f. All fuel supplier certifications.
- g. Results of each as-fired fuel sample analysis.
- h. Annual sulfur content of coal, coal refuse and coke-derived solid fuel.
- i. Information required in each Excess Emission Report and continuous monitoring system Semi-Annual Report.
- j. Gross electrical output, in MWh, for the facility and steam production for each CFB boiler.
- k. Continuous monitoring system calibrations and calibration checks, percent operating time, excess emissions, and adjustments and maintenance performed on continuous monitoring systems and devices.
- l. Results of all stack tests, visible emission evaluations and performance evaluations.

As existing coal-fired electric utility steam generating units (EGU), the following provisions of 40 CFR Part 63, Subpart UUUUU – National Emissions Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units apply to the CFB boilers:

40 CFR 63.10007(f): Make available performance test records;

40 CFR 63.10021(h): Keep records specified in §63.10032, during startup/shutdown;

40 CFR 63.10032(a): Keep records according to (a)(1) and (a)(2). Records of each notification, report, performance evaluations and test;

40 CFR 63.10032(b): CEMS records;

- 40 CFR 63.10032(c): Records required in Table 7;
- 40 CFR 63.10032(d)(1): Records of monthly fuel use including type and amount;
- 40 CFR 63.10032(f): Records of each startup/shutdown;
- 40 CFR 63.10032(g): Records of malfunctions;
- 40 CFR 63.10032(h): Records of actions taken during malfunctions;
- 40 CFR 63.10032(i): Records of types and amounts of fuel used during startup/shutdown;
- 40 CFR 63.10033(a): Keep records in a form suitable for review according to §63.10(b)(1);
- 40 CFR 63.10033(b): Keep records 5 years from the date of occurrence; and
- 40 CFR 63.10033(c): Keep records on-site a minimum of 2 years.

As an industrial steam generating unit constructed after June 19, 1984, and that has a heat input capacity greater than 100 MMBtu/hr, 9 VAC 5-50 Article 5, Subpart Db of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Db – Standards of Performance for Industrial – Commercial – Institutional Steam Generating Units apply to the auxiliary boiler:

- 40 CFR 60.49b(d)(1): Fuel combustion records;
- 40 CFR 60.49b(f)(1): Opacity records;
- 40 CFR 60.49b(g): NO_x emission records;
- 40 CFR 60.49b(o): Records required under this section shall be maintained for 2 years; and
- 40 CFR 60.49b(r)(1): Fuel supplier certification records.

Testing

The permittee has completed initial performance testing of the CFB boilers. Results of initial testing do not indicate an exceedance of applicable emission standards or limitations.

The following testing requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from

the PSD permit.

PSD Condition 60: Initial performance tests shall be conducted for sulfur dioxide, nitrogen oxides, PM-10, PM-2.5, carbon monoxide and volatile organic compounds from the auxiliary boiler exhaust flue to determine compliance with the emission limits contained in PSD Condition 33.

The USEPA has approved a test method for PM-2.5; therefore, language in PSD permit condition 60 pertaining to testing for PM-2.5, once a test method is approved has been removed and PM-2.5 added to the list of pollutants to be tested.

PSD Condition 61: Concurrently with the initial performance tests, visible emission evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the exhaust stack for the auxiliary boiler.

PSD Condition 65: Annually and upon request by the DEQ, the permittee shall conduct performance tests for sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter, PM-10, volatile organic compounds, mercury, sulfuric acid mist, hydrogen chloride and hydrogen fluoride from each CFB boiler exhaust.

The USEPA has approved a test method for PM-2.5; therefore, language in PSD permit condition 65 pertaining to testing for PM-2.5, once a test method is approved has been removed and PM-2.5 added to the list of pollutants to be tested.

The following testing requirement is from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). The condition number listed below is from the MACT permit.

MACT Condition 26: Annually and upon request by the DEQ, the permittee shall conduct performance tests for carbon monoxide, particulate matter, PM-10, volatile organic compounds, mercury, hydrogen chloride and hydrogen fluoride from each CFB boiler exhaust.

The USEPA has approved a test method for PM-2.5; therefore, language in MACT permit condition 26 pertaining to testing for PM-2.5, once a test method is approved has been removed and PM-2.5 added to the list of pollutants to be tested.

As electric utility steam generating units constructed after September 18, 1978, 9 VAC 5-50 Article 5, Subpart Da of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Da – Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978, apply to the CFB boilers:

40 CFR 60.50Da(a): The owner shall use methods and procedures in appendix A of this part in conducting performance tests required in §60.8, unless otherwise

specified in this section;

40 CFR 60.50Da(b): PM standards compliance determination procedures;

40 CFR 60.50Da(c)(4): Method 19 shall be used to determine SO₂ emission rate;

40 CFR 60.50Da(c)(5): CEMS in §60.49Da(b) and (d) shall be used to determine SO₂ and CO₂ or O₂ concentrations;

40 CFR 60.50Da(d)(1) and (2): Method 19 shall be used to determine NO_x emission rate and CEMS in §60.49Da(c) and (d) shall be used to determine NO_x and CO₂ or O₂ concentrations; and

40 CFR 60.50Da(e): Alternatives to specified reference methods and procedures.

PSD and MACT permit conditions pertaining to testing, CEMS and reporting for the CFB boilers requires the permittee to conduct performance tests, install, maintain and operate CEMS and report and reduce data in accordance with applicable Virginia air quality standards and each applicable subpart of federal standards of performance for new stationary sources, which includes the above compliance determination procedures, reference methods and compliance alternatives. Therefore, while the above requirements from §60.50Da are included in the Article 3 permit, they may not appear as specifically worded in the subpart.

As existing coal-fired electric utility steam generating units (EGU), the following provisions of 40 CFR Part 63, Subpart UUUUU – National Emissions Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units apply to the CFB boilers:

40 CFR 63.10000(c)(1): Initial performance tests are required for all pollutants to demonstrate compliance with applicable emission limits;

40 CFR 63.10005(a): General requirements for initial compliance demonstration;

40 CFR 63.10005(b): Initial performance test requirements;

40 CFR 63.10005(d)(1): Initial compliance demonstration requirements using CEMS for SO₂ and, filterable PM;

40 CFR 63.10005(d)(3): Initial compliance demonstration requirements using sorbent trap monitoring systems for mercury;

The permittee has completed initial performance testing and demonstrated initial compliance with applicable emission limits; therefore, the initial testing requirements

in §63.10000 and §63.10005, as referenced above are not included in the Article 3 permit.

40 CFR 63.10005(e): Must conduct a performance tune-up of affected EGUs as part of initial compliance demonstration;

40 CFR 63.10005(f): Tune-up schedule for existing sources;

40 CFR 63.10006(i): Conduct subsequent performance tune-ups according to §63.10021(e) and the applicable schedule specified in this section;

40 CFR 63.10007(a)(1): Performance test, site-specific test plan and CEMS data collection requirements;

40 CFR 63.10007(b): Conduct performance tests according to requirements in Table 5;

40 CFR 63.10007(e): Procedures for determining compliance with applicable emission limits in Table 2 using results from performance testing;

40 CFR 63.10011(a): Must demonstrate initial compliance with applicable emission limits by conducting performance testing;

40 CFR 63.10011(c)(1): Initial compliance demonstration requirements using sorbent trap monitoring systems; and

40 CFR 63.10011(c)(2): Initial compliance demonstration requirements using SO₂ or PM CEMS.

The permittee has demonstrated initial compliance with applicable emission limits; therefore, the initial compliance demonstration requirements in §63.10011, as referenced above are not included in the Article 3 permit.

As an industrial steam generating unit constructed after June 19, 1984, and that has a heat input capacity greater than 100 MMBtu/hr, 9 VAC 5-50 Article 5, Subpart Db of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Db – Standards of Performance for Industrial – Commercial – Institutional Steam Generating Units apply to the auxiliary boiler:

40 CFR 60.45b(j): Units that only combust very low sulfur oil are not subject to compliance and performance testing requirements (for SO₂) of this section if the owner obtains fuel receipts as described in §60.49b(r);

40 CFR 60.45b(k): Follow applicable procedures in §60.49b(r) to demonstrate compliance with SO₂ emission standard exemption in §60.42b(k)(2);

40 CFR 60.46b(c): Compliance with NO_x standards shall be determined through performance testing under paragraph (e) of this section, as applicable;

40 CFR 60.46b(d): Conduct initial performance test to determine compliance with opacity limits using Method 9;

40 CFR 60.46b(e)(1): Initial compliance determination requirements for NO_x using CEMS under §60.48b; and

40 CFR 60.46b(e)(4): NO_x compliance determination following initial performance test.

PSD permit conditions pertaining to testing, CEMS and reporting for the auxiliary boiler requires the permittee to conduct performance tests, install, maintain and operate CEMS and report and reduce data in accordance with applicable Virginia air quality standards and each applicable subpart of federal standards of performance for new stationary sources, which includes the above performance test and compliance determination procedure. Therefore, while the above requirements from §60.46b paragraphs (c) and (e) are included in the Article 3 permit, they may not appear as specifically worded in the subpart.

Reporting

The following reporting requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 58: The permittee shall submit written reports to the Director, Southwest Regional Office of excess emissions from any process monitored by a continuous monitoring system (COMS/CEMS) on a quarterly basis.

PSD Condition 59: The permittee shall submit written reports for each continuous monitoring system on a semi-annual basis.

PSD Condition 71: The permittee shall submit notifications of monitoring system evaluations and performance tests for the electric power generating equipment.

The following reporting requirements are from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). Condition numbers listed below are from the MACT permit.

MACT Condition 24: The permittee shall submit written reports to the Director, Southwest Regional Office of excess emissions from any process monitored by a continuous monitoring system (COMS/CEMS) on a quarterly basis.

MACT Condition 25: The permittee shall submit written reports for each continuous monitoring system on a semi-annual basis.

PM CEMS are used for the CFB boilers instead of COMS, in accordance with 40 CFR 60.48Da(p). Therefore, MACT Condition 25.d. pertaining to opacity reporting for the CFB boilers does not apply and is not included in the Article 3 permit.

MACT Condition 30: The permittee shall furnish written notification of monitoring system evaluations and performance tests for the CFB boilers.

As electric utility steam generating units constructed after September 18, 1978, 9 VAC 5-50 Article 5, Subpart Da of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Da-Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978, apply to the CFB boilers:

40 CFR 60.51Da(a): Submit performance test data and monitor evaluation data to the Administrator;

40 CFR 60.51Da(b): Specific information to be reported for SO₂ and NO_x;

40 CFR 60.51Da(c): Specific information to be reported if minimum quantity of data is not obtained;

40 CFR 60.51Da(f): Reporting requirements for periods of unavailable data for SO₂ or NO_x;

40 CFR 60.51Da(h): CEMS operation and data reporting requirements;

40 CFR 60.51Da(j): Submit written reports on a semiannual basis; and

40 CFR 60.51Da(k): May submit quarterly electronic reports for SO₂ and/or NO_x.

As existing coal-fired electric utility steam generating units (EGU), the following provisions of 40 CFR Part 63, Subpart UUUUU – National Emissions Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units apply to the CFB boilers:

40 CFR 63.10005(k), §10011(e) and §10030(e): Submit Notification of Compliance Status summarizing results of initial compliance demonstration;

The permittee has conducted initial compliance testing and provided notification of results; therefore, this requirement has been completed and no longer applies and is not included in the Article 3 permit.

40 CFR 63.10006(j): Reporting requirements for results of performance tests and tune-ups;

40 CFR 63.10021(f): Submit reports required under §63.10031;

40 CFR 63.10021(g): Report emissions exceedance or the failure to conduct tune-ups;

40 CFR 63.10021(i): Provide reports specified in §63.10031, for periods of startup/shutdown;

40 CFR 63.10030(a): Requirement to submit applicable notifications;

40 CFR 63.10030(b): Initial notification requirement;

The permittee has submitted the required initial notification; therefore, this requirement has been completed and no longer applies and is not included in the Article 3 permit.

40 CFR 63.10030(d): Notification of intent to conduct performance tests;

40 CFR 63.10031(a): Submit applicable reports indicated in Table 8 of this subpart;

40 CFR 63.10031(b): Reporting schedule;

40 CFR 63.10031(c): Compliance report requirements;

40 CFR 63.10031(d): Excess emissions reporting requirements;

40 CFR 63.10031(e): Semiannual monitoring reports;

40 CFR 63.10031(f): Report results of performance tests, CEMS evaluations, and electronic reporting requirements; and

40 CFR 63.10031(g): Malfunction reporting.

As an industrial steam generating unit constructed after June 19, 1984, and that has a heat input capacity greater than 100 MMBtu/hr, 9 VAC 5-50 Article 5, Subpart Db of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Db – Standards of Performance for Industrial – Commercial – Institutional Steam

Generating Units apply to the auxiliary boiler:

40 CFR 60.49b(a)(1) and (3): Requirements for submitting notification of initial startup;

40 CFR 60.49b(b): Requirement to submit performance test data from initial performance test and the performance evaluation of the CEMS;

40 CFR 60.49b(h): Excess emission report requirements;

40 CFR 60.49b(i): Submit reports containing information recorded under paragraph (g) of this section (NO_x emission data);

40 CFR 60.49b(r)(1): Fuel certification report requirements;

40 CFR 60.49b(v): Option to submit electronic quarterly reports for NO_x and opacity; and

40 CFR 60.49b(w): Written reports shall be submitted each 6 month period.

As a new stationary reciprocating internal combustion engine with a site rating of more than 500 brake horsepower located at a major source of hazardous air pollutants, the following provisions of 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines apply to the emergency generator engine:

40 CFR 63.6645(f): Initial notification requirements.

The permittee has submitted the initial notification pertaining to the emergency generator engine; therefore, this one-time requirement no longer applies and is not included in the Article 3 permit.

EMISSION UNIT APPLICABLE REQUIREMENTS – Material Receiving, Handling, Processing, and Storage Equipment

Limitations

The following limitations are Best Available Control Technology (BACT) requirements from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 8: Particulate matter emissions from unloading coal, coal refuse, coke-derived solid fuel and wood/bark delivered to the facility shall be controlled by partially enclosed unloading facilities and wet suppression.

PSD Condition 9: Particulate matter emissions from coal screens and coal breakers shall be controlled by partial enclosures and wet suppression.

PSD Condition 10: Particulate matter emissions from conveyor transfers shall be controlled by wet suppression or equivalent, at a minimum.

PSD Condition 11: Particulate matter emissions from truck loading facilities for ash and coal breaker reject material shall be controlled by partial enclosures and wet suppression. Ash shall be wetted by a pug mill prior to discharge from storage silos or loaded into tanker trucks through enclosed transfer systems. Air displaced from tanker trucks shall be vented back into the storage silos.

PSD Condition 12: Particulate matter emissions from coal crushing shall be controlled by a fabric filter baghouse.

PSD Condition 13: Particulate matter emissions from limestone crushing and drying shall be vented to the CFB boilers.

PSD Condition 14: Particulate matter emissions from handling, transfer and storage of fuel and limestone at the boiler house shall be controlled by the tripper building fabric filter baghouse.

PSD Condition 15: Particulate matter emissions from the limestone unloading facility and each storage silo shall be controlled by fabric filter baghouses.

PSD Condition 16: Fugitive dust and fugitive emission controls shall include the following, or equivalent, as approved by DEQ:

- a. Equipment for conveying or transporting coal, coal refuse, coke-derived solid fuel, wood/bark or limestone shall be covered or enclosed. Ash shall be conveyed between boiler systems, control devices and storage silos through enclosed mechanical or pneumatic transfer systems.
- b. The loading of coal, coal refuse and coke-derived solid fuel onto storage piles shall be through stackers with telescoping chutes.
- c. All material being stockpiled shall be kept adequately moist using water or surfactant to control dust during storage and handling or covered at all times to minimize emissions.
- d. Dust from haul roads, traffic areas and construction operations shall be controlled by the application of asphalt, water or suitable chemicals.

PSD Condition 17: Volatile organic compound emissions from the distillate oil storage tank, emission unit ID: FOM, shall be controlled by a conservation vent.

PSD Condition 36: Emissions from the limestone unloading facility baghouse exhaust shall not exceed the following limits:

Filterable Particulate Matter (PM)	0.005 gr/dscf	1.88 tons/yr
Total PM-10	0.38 lb/hr	1.66 tons/yr
Total PM-2.5	0.38 lb/hr	1.66 tons/yr

PSD Condition 37: Emissions from the crusher building baghouse exhaust shall not exceed the following limits:

Filterable Particulate Matter (PM)	0.005 gr/dscf	2.72 tons/yr
Total PM-10	0.55 lbs/hr	2.41 tons/yr
Total PM-2.5	0.55 lbs/hr	2.41 tons/yr

PSD Condition 38: Emissions from the tripper building baghouse exhaust shall not exceed the following limits:

Filterable Particulate Matter (PM)	0.005 gr/dscf	1.14 tons/yr
Total PM-10	0.23 lb/hr	1.01 tons/yr
Total PM-2.5	0.23 lb/hr	1.01 tons/yr

PSD Condition 39: Emissions from each fly ash silo baghouse exhaust shall not exceed the following limits:

Filterable Particulate Matter (PM)	0.005 gr/dscf	1.45 tons/yr
Total PM-10	0.29 lb/hr	1.27 tons/yr
Total PM-2.5	0.29 lb/hr	1.27 tons/yr

PSD Condition 40: Total emissions from the bed ash silo baghouse exhausts shall not exceed the following limits:

Filterable Particulate Matter (PM)	0.005 gr/dscf	3.11 tons/yr
Total PM-10	0.63 lb/hr	2.76 tons/yr
Total PM-2.5	0.63 lb/hr	2.76 tons/yr

PSD Condition 41: Total fugitive emissions from the operation of the material handling equipment shall not exceed the following limits:

Particulate Matter (PM)	22.98 lbs/hr	29.44 tons/yr
Total PM-10	6.22 lbs/hr	7.80 tons/yr

PSD Condition 44: Visible emissions from each material handling fabric filter baghouse exhaust shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).

PSD Condition 45: Visible emissions from each loading and unloading facility, coal screen and breaker enclosure, conveyor transfer, stockpile and any other material handling, processing and storage equipment shall not exceed 10 percent opacity.

As a coal preparation and processing source that commenced construction after April 28, 2008, and on or before May 27, 2009, 9 VAC 5-50-400, Subpart Y of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Y – Standards of Performance for Coal Preparation and Processing Plants apply to all coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at the facility:

40 CFR 60.254(b): Emissions standards (10% opacity limit for visible emissions from any affected unit and 0.010 gr/dscf for stack emissions). Equipment used in loading, unloading and conveying operations of open storage piles are not subject to the opacity limit.

The above grain loading limit is not specifically included in the Article 3 permit since the BACT emission standard in Conditions 37 and 38 from the PSD permit is more stringent.

As a nonmetallic mineral processing source that commenced construction after April 22, 2008, 9 VAC 5-50-400, Subpart OOO of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants apply to affected limestone processing equipment at the facility which includes each crusher, grinding mill, screening operation, bucket elevator, belt conveyor and storage bin:

40 CFR 60.672(b): Fugitive emission limits and compliance requirements indicated in Table 3, for fugitive emissions from affected facilities without capture systems (7% opacity limit for visible emissions);

40 CFR 60.672(d): Truck dumping into any screening operation, feed hopper, or crusher is exempt from the requirements of §60.672;

40 CFR 60.672(e)(1) and (e)(2): Each affected unit enclosed in a building must meet limits in §60.672(a) or (b) as may apply, or the building enclosing the units must comply with a 7% opacity limit for fugitive emissions from building openings and building vents must meet Table 2 stack limits and compliance requirements.

The limestone crushers are located in the boiler building. Therefore, the 7% opacity limit indicated in (e)(1) applies to openings in the boiler building. Limestone from the crushers is exhausted to the CFB boilers for use as a heat transfer media, not a control device as defined in the subpart. Since there are no vents in the boiler building meeting the definition in the subpart, the stack emission limits and compliance requirements indicated in (e)(2) do not apply to the boiler building.

The limestone unloading facility enclosing limestone conveying operations, must meet the 7% opacity limit for fugitive emissions from building openings indicated in (e)(1), and the stack emission limit of 0.014 gr/dscf and compliance requirements in Table 2 for the baghouse exhaust. The grain loading limit is not specifically included in the Article 3 permit since the BACT emission standard in Condition 36 from the PSD permit is more stringent.

40 CFR 60.672(f): Any baghouse (tripper building baghouse), controlling an individual enclosed storage bin, is exempt from the stack PM concentration limit of 0.014 gr/dscf, but must meet the 7% opacity limit and compliance requirements in Table 2. This exemption doesn't apply to multiple storage bins with combined stack emissions.

The above opacity standard is not specifically included in the Article 3 permit since the BACT opacity standard in Condition 44 from the PSD permit is more stringent.

The following limitations are BACT requirements from the Article 6 permit issued on March 23, 2009. Condition numbers listed below are from the Article 6 permit.

Article 6 Condition 2: Particulate emissions from pneumatic loading of the hydrated lime and activated carbon storage silos (HLS-1, HLS-2, ACT-1 and ACT-2) shall be controlled by fabric filters on the silo exhaust vents.

Article 6 Condition 4: Emissions from the operation of the hydrated lime and activated carbon storage silos shall not exceed the following limits:

Filterable Particulate Matter (PM)	0.005 gr/dscf each 0.80 tons/yr combined total
PM-10	0.05 lb/hr each hydrated lime silo 0.03 lb/hr each activated carbon silo 0.72 tons/yr combined total

Article 6 Condition 5: Visible emissions from each of the storage silos shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).

Monitoring

The coal crusher building, tripper building, limestone truck unloading facility, the two fly ash silos and the bed ash silo each meet the criteria indicated in 40 CFR 64.2(a) pertaining to emissions of PM, PM-10 and PM-2.5, and are therefore subject to the provisions of 40 CFR Part 64 – Compliance Assurance Monitoring (CAM), for those pollutants.

The applicant submitted CAM information as required by 40 CFR 64.5, Deadlines for Submittals. Since emissions from each of the units are controlled by the same type technology, bag filter systems, the permittee proposes the following CAM plan for each unit.

The permit contains requirements to monitor, operate, calibrate and maintain the fabric filter baghouses controlling the coal crusher building, tripper building, limestone truck unloading facility, the two fly ash silos and the bed ash silo according to the following table:

Coal Crusher Building, Tripper Building, Limestone Truck Unloading Facility, Fly Ash Silos and Bed Ash Silo Compliance Assurance Monitoring Plan

	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator	Baghouse Differential Pressure	Opacity	Internal Inspection
A. Measurement Approach	The permittee shall install calibrate, maintain and operate a device for measuring the pressure drop across each affected baghouse.	The permittee shall conduct Reference Method 22-like visible emission observations for the presence of visible emissions from each affected baghouse monthly, at minimum.	The permittee shall conduct an internal inspection of each affected baghouse annually, at minimum.
II. Indicator Range	An excursion is defined as a pressure drop outside of the following indicator ranges: Limestone Unloading: 1 – 15 inches of water column; Coal Crusher Building: 1 – 8 inches of water column; Tripper Building: 1 – 6 inches of water column; Bed Ash Silo: 1 – 4 inches of water column; and Fly Ash Silos (2): 0.5 – 3 inches of water column. Upon detecting an excursion, the permittee shall initiate corrective action within 24 hours to return the affected baghouse and/or emissions unit to normal operation.	An excursion is defined as the presence of visible emissions. Upon detecting an excursion, the permittee shall initiate corrective action within 24 hours to return the affected baghouse and/or emissions unit to normal operation.	An excursion is defined as failure to perform the annual inspection. An excursion shall trigger an inspection.
III. Performance Criteria	Pressure measurement devices shall be installed at the inlet and outlet of each affected baghouse. The accuracy of each device shall be commensurate with the current state of technology in the industry.	Visible emission observations are conducted at the baghouse exhaust.	Each affected baghouse shall be visually inspected for deterioration of bags/filters and structural integrity.
A. Data Representativeness			
B. Verification of Operational Status	Pressure gauges and alarms shall be installed to indicate operational status of each affected baghouse.	N/A	N/A

	Indicator No. 1	Indicator No. 2	Indicator No. 3
I. Indicator	Baghouse Differential Pressure	Opacity	Internal Inspection
C. QA/QC Practices and Criteria	Each monitoring device shall be calibrated annually, at a minimum, or more frequently in accordance with manufacturer's specifications.	The observer shall be familiar with Reference Method 22 and follow Method 22-like procedures.	Trained personnel shall perform inspections and maintenance.
D. Monitoring Frequency	Continuously	Monthly	Annually
E. Data Collection Procedures	Pressure drop of each affected baghouse shall be manually recorded each day in an operator log. Data Control System shall automatically record a reading once per hour.	Results of each observation shall be recorded and maintained on site.	Results of inspections and maintenance shall be recorded and maintained on site.
F. Averaging Period	None.	In accordance with Reference Method	N/A

The indicators to be monitored reflect the performance of each bag filter system and associated emissions unit. The range of operation for each indicator is based on manufacturer design and performance test data. Operation of the emission units and associated fabric filter baghouses so that each indicator is maintained within the appropriate range will provide a reasonable assurance of compliance with the emission limits for the subject pollutants.

The permit contains conditions requiring the permittee to conduct monitoring in accordance with 40 CFR 70.6(a)(3)(i) and 40 CFR 64.6(c).

As a coal preparation and processing source that commenced construction after April 28, 2008, and on or before May 27, 2009, 9 VAC 5-50-400, Subpart Y of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Y – Standards of Performance for Coal Preparation and Processing Plants apply to all coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at the facility:

40 CFR 60.255(f): Alternative to meeting the requirements in 40 CFR 60.255(b)(2) by conducting daily visible emission observations in accordance with (f)(1) or a site-specific monitoring plan in accordance with (f)(2);

40 CFR 60.255(g): Alternative to meeting the requirements in 40 CFR 60.255(b)(2) with the installation of a COMS; and

40 CFR 60.255(h)(2): Monthly observations of coal truck dump process and control equipment.

As a nonmetallic mineral processing source that commenced construction after April 22, 2008, 9 VAC 5-50-400, Subpart OOO of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants apply to affected limestone processing equipment at the facility which includes each crusher, grinding mill, screening operation, bucket elevator, belt conveyor and storage bin:

40 CFR 60.674(b): Monthly inspections of wet suppression systems;

40 CFR 60.674(c): Quarterly visible emission inspections of affected facility baghouses (limestone truck unloading facility baghouse and tripper building baghouse) using EPA Method 22; and

The permittee proposes a monthly visible emission inspection schedule as part of

their CAM Plan for this equipment which meets the Subpart OOO requirement and is considered more stringent. Therefore, the quarterly visible emission inspection of the limestone truck unloading facility baghouse and the tripper building baghouse required by Subpart OOO is not specifically included in the Article 3 permit, but is met by the more stringent monthly inspection included as part of the CAM Plan for this equipment.

40 CFR 60.674(d): As an alternative to paragraph (c), may use a bag leak detection system.

While this is an applicable option and cited in the Article 3 permit, the permittee has not proposed or installed a bag leak detection system; therefore, the provisions of this paragraph are not included in the Article 3 permit.

The following monitoring requirement for wood fuel handling equipment is included in the Article 3 operating permit:

The permittee will be required to visually observe all wood fuel processing, conveying and transfer equipment at least once each calendar week to determine the presence of visible emissions while operating (does not include condensed water vapor/steam). If during the observation, visible emissions are observed that appear to exceed five percent opacity, a visible emission evaluation (VEE) shall be conducted on the affected unit in accordance with 40 CFR 60, Appendix A, EPA Method 9. The VEE shall be conducted for a minimum of six minutes. If during the six minutes, any readings exceed 10 percent opacity, the VEE shall be conducted for a total of 60 minutes. A Method 9 VEE shall not be required if the visible emissions condition is corrected as expeditiously as possible such that no visible emissions exist; the emissions unit is operating at normal conditions; and, the cause and corrective measures taken are recorded. A record of each visible emissions observation shall be maintained, including, at a minimum, the date, time, name of the emission unit, the applicable emission requirement, the results of the observation and the name of the observer. A record of each VEE shall be maintained and shall include, at a minimum, any data required by the 40 CFR 60, Appendix A, Method 9. This will satisfy the periodic monitoring requirement for the visible emission limitation pertaining to wood fuel handling equipment included in the permit.

The following monitoring requirement for hydrated lime and activated carbon storage silos is included in the Article 3 operating permit:

The permittee will be required to visually observe each hydrated lime and activated

carbon storage silo exhaust vent at least once each calendar week while product is being transferred to the silos to determine the presence of visible emissions while operating (does not include condensed water vapor/steam). If during the observation, visible emissions are observed, a visible emission evaluation (VEE) shall be conducted on the affected unit in accordance with 40 CFR 60, Appendix A, EPA Method 9. The VEE shall be conducted for a minimum of six minutes. If during the six minutes, any readings exceed 5 percent opacity, the VEE shall be conducted for a total of 60 minutes. A Method 9 VEE shall not be required if the visible emissions condition is corrected as expeditiously as possible such that no visible emissions exist; the emissions unit is operating at normal conditions; and, the cause and corrective measures taken are recorded. A record of each visible emissions observation shall be maintained, including, at a minimum, the date, time, name of the emission unit, the applicable emission requirement, the results of the observation and the name of the observer. A record of each VEE shall be maintained and shall include, at a minimum, any data required by the 40 CFR 60, Appendix A, Method 9. This will satisfy the periodic monitoring requirement for the visible emission limitation pertaining to the hydrated lime and activated carbon storage silos included in the permit.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit.

The following recordkeeping requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 70.d and i: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but are not limited to:

Monthly and annual amounts of each type of fuel and limestone delivered to the facility; and

Dimensions of the distillate oil storage tank, emission unit ID: FOM, and an analysis showing the capacity of the storage vessel.

The following recordkeeping requirements are from the MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). The condition number listed below is

from the MACT permit.

MACT Condition 29.c: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but are not limited to:

Monthly and annual amounts of each type of fuel and limestone delivered to the facility.

As a coal preparation and processing source that commenced construction after April 28, 2008, and on or before May 27, 2009, 9 VAC 5-50-400, Subpart Y of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Y – Standards of Performance for Coal Preparation and Processing Plants apply to all coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at the facility:

40 CFR 60.258(a): Requirements for maintaining a written or electronic logbook.

As a nonmetallic mineral processing source that commenced construction after April 22, 2008, 9 VAC 5-50-400, Subpart OOO of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants apply to affected limestone processing equipment at the facility which includes each crusher, grinding mill, screening operation, bucket elevator, belt conveyor and storage bin:

40 CFR 60.676(b): Record periodic inspections in a logbook.

Testing

The permittee has completed initial performance testing of all material handling baghouse exhausts. Results of initial testing do not indicate an exceedance of applicable emission standards or limitations.

The following testing requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 62: Visible emission evaluations in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on fugitive emissions from screen and breaker enclosures, unloading stations, conveyor transfers and any

other equipment subject to NSPS, Subpart Y.

The permittee has completed the visible emission evaluations required by PSD condition 62; therefore, the requirement no longer applies and is not included in the Article 3 permit.

PSD Condition 63: Visible emission evaluations in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted by the permittee on fugitive emissions from conveyor transfers and any other equipment subject to NSPS, Subpart OOO.

PSD Condition 64: Visible emission evaluations required in Condition 63 may be reduced to ten (10) sets of twenty-four (24) consecutive observations (at fifteen (15) second intervals) to yield a six (6) minute average if:

- a. There are no individual readings greater than ten (10) percent opacity for each belt conveyor, and
- b. There are no more than three (3) readings of ten (10) percent opacity for the one (1) hour period for each belt conveyor.

The permittee has completed the visible emission evaluations required by PSD conditions 63 and 64; therefore, the requirements no longer apply and are not included in the Article 3 permit.

As a coal preparation and processing source that commenced construction after April 28, 2008, and on or before May 27, 2009, 9 VAC 5-50-400, Subpart Y of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Y – Standards of Performance for Coal Preparation and Processing Plants apply to all coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at the facility:

40 CFR 60.255(b)(1): Initial stack test requirements applicable to the Tripper Building and Coal Crusher Building;

The permittee has completed initial stack testing of the Tripper Building and Coal Crusher Building baghouses; therefore, the above requirement is not included in the Article 3 permit.

40 CFR 60.255(b)(1)(i) – (iii): On-going stack test requirements applicable to the Tripper Building and Coal Crusher Building;

40 CFR 60.255(b)(2): Initial visible emission evaluation (VEE) requirements applicable to all coal handling equipment subject to a Subpart Y opacity standard;

40 CFR 60.255(b)(2)(i) – (ii): On-going VEE requirements applicable to all coal handling equipment subject to a Subpart Y opacity standard;

40 CFR 60.255(c): Compliance provisions for affected units enclosed in a building;

40 CFR 60.255(d): Since the design controlled potential PM emissions rate of the tripper building baghouse equals 1.0 megagram, the tripper building is exempt from the on-going performance test requirements of 40 CFR 60.255(b)(1)(i) and (ii) provided all requirements of §60.255(d) are met;

40 CFR 60.255(h)(1) and (3): Requirements to conduct initial VEE on each coal truck dump operation and a VEE once every 5 calendar years; and

40 CFR 60.257: Test methods and procedures.

As a nonmetallic mineral processing source that commenced construction after April 22, 2008, 9 VAC 5-50-400, Subpart OOO of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants apply to affected limestone processing equipment at the facility which includes each crusher, grinding mill, screening operation, bucket elevator, belt conveyor and storage bin:

40 CFR 60.672(b): Initial visible emission evaluation requirements for fugitive emission sources as indicated in Table 3;

40 CFR 60.672(e)(2): Initial performance test requirements as indicated in Table 2, applicable to the Limestone Truck Unloading facility baghouse; and

The permittee has completed initial stack testing of the Limestone Truck Unloading facility baghouse; therefore, the above requirement is not included in the Article 3 permit.

40 CFR 60.675: Test methods and procedures.

Reporting

The following reporting requirements are from the Article 6 permit issued on March 23,

2009. The condition number listed below is from the Article 6 permit.

Article 6 Condition 7: The permittee shall furnish written notification of construction and startup of the hydrated lime and activated carbon storage silos (HLS-1, HLS-2, ACT-1 and ACT-2).

The permittee has furnished the required notifications; therefore, this one-time requirement no longer applies and is not included in the Article 3 permit.

As a coal preparation and processing source that commenced construction after April 28, 2008, and on or before May 27, 2009, 9 VAC 5-50-400, Subpart Y of Virginia air quality regulations and the following provisions of 40 CFR Part 60, Subpart Y – Standards of Performance for Coal Preparation and Processing Plants apply to all coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at the facility:

40 CFR 60.258(b)(3): Report semiannually periods of all 6-minute average opacities that exceed the applicable standard;

40 CFR 60.258(c): Submit initial performance test results; and

40 CFR 60.258(d): Submit results of each performance test electronically to the USEPA. Results of each opacity performance test are to be submitted by postal mail.

The permittee has provided notification of initial construction and startup of equipment subject to NSPS Subparts Y and OOO, therefore, the notification requirements in 40 CFR 60.7(a)(1) and (3), are not included for that equipment in the Article 3 permit.

FACILITY-WIDE REQUIREMENTS

Limitations

The following requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 30: The permittee shall convert the Bremo Power Station to natural gas within two years of commencement of commercial operation of the Virginia City Hybrid Energy Center, subject to Virginia State Corporation Commission approval.

PSD Condition 31: Except where the permit is more restrictive than the applicable requirement, equipment subject to new source performance standards shall be operated in compliance with the requirements of 40 CFR 60, Subpart Da, Subpart Db, Subpart Y, Subpart IIII and Subpart OOO, as applicable.

PSD Condition 76: The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

The following requirements are from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). The condition number listed below is from the MACT permit.

MACT Condition 34: The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.

- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

The following requirements are from the Article 6 permit issued on March 23, 2009. The condition number listed below is from the Article 6 permit.

Article 6 Condition 11: The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

Monitoring and Recordkeeping

The following monitoring and recordkeeping requirements are from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). Condition numbers listed below are from the PSD permit.

PSD Condition 68: The permittee shall conduct an ambient air quality analysis of the emissions of PM-2.5 from the facility within 180 days after USEPA promulgates final rules of PM-2.5 analysis, or USEPA promulgates revised implementation guidance or policy for PM-2.5 analysis, or DEQ establishes a more appropriate implementation methodology for PM-2.5, or as may be directed by the Director, Southwest Regional Office.

PSD Condition 69: The permittee shall upon normal operation of the facility (i.e. control of the loading of the generator is turned over to the Independent System Operator, PJM) commence ambient air quality monitoring of PM-2.5, PM-10, and sulfur dioxide. The permittee shall conduct the air quality monitoring for at least one year after normal operation of the facility is achieved. All monitoring and associated tasks shall conform to, at a minimum, the applicable requirements of 40 CFR Parts 50, 53, and 58, and any other requirements specified by DEQ.

The permittee has submitted the ambient air monitoring protocol and plan as required in PSD Condition 69; therefore, that requirement is not included in the Article 3 permit.

PSD Condition 70.p: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but not limited to scheduled and unscheduled maintenance and operator training. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

The following recordkeeping requirement is from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). The condition number listed below is from the MACT permit.

MACT Condition 29.I: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but not limited to scheduled and unscheduled maintenance and operator training. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

The following recordkeeping requirement is from the Article 6 permit issued on March 23, 2009.

On-Site Records: The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Southwest Regional Office. These records shall include, but not limited to scheduled and unscheduled maintenance and operator training. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

Testing

The following testing requirement is from the PSD permit issued on June 30, 2008 (as amended 1/29/09, 5/24/11 and 10/23/12). The condition number listed below is from the PSD permit.

PSD Condition 18: The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.

The following testing requirement is from the Article 7 (40 CFR Part 63 112(g)) Case-By-Case MACT permit issued on June 30, 2008 (as amended 9/2/09 and 10/23/12). The condition number listed below is from the MACT permit.

MACT Condition 6: The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.

The following testing requirement is from the Article 6 permit issued on March 23, 2009. The condition number listed below is from the Article 6 permit.

Article 6 Condition 3: The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.

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.

Comments on General Conditions

B. 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”.

F. 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.

U. 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.

Y. 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.

STATE-ONLY APPLICABLE REQUIREMENTS

The permittee did not identify any state-only applicable requirements in the application.

INAPPLICABLE REQUIREMENTS

40 CFR Part 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters do not apply to the CFB boilers or the auxiliary boiler. 40 CFR 63.7491(a) indicates electric utility steam generating units are not subject to the subpart and §63.7491(h) indicates any boiler or process heater that is part of the affected source subject to another subpart of the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 63.

The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of electricity generation sources subject to the Acid Rain Program, to report annual mass emissions of CO₂, N₂O, and CH₄. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit issued after January 1, 2011. The current state permits for the Virginia City Hybrid Energy Center facility contain no GHG-specific applicable requirements and there have been no modifications at the facility requiring a review of GHG emissions. Therefore, there are no applicable requirements for the facility specific to GHG.

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 ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)

Emission Unit No.	Emission Unit Description	Citation ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
IS-2	Lube oil/Used oil/Hydraulic oil systems	5-80-720 B	VOC	17,120 gallons
IS-5	Oil/Water separator	5-80-720 B	VOC	28,685 gallons
IS-6	Degreaser	5-80-720 B	VOC	N/A
IS-7	Antifreeze usage on coal conveyors	5-80-720 B	VOC	N/A
Emission Unit No.	Emission Unit Description	Citation ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
IS-8	Water treatment chemicals	5-80-720 B	Sodium hypochlorite, caustic, sulfuric acid, amines, and ammonia	6,600 (approx.)
IS-9	Ammonia storage	5-80-720 B	Ammonia	60,000 gallons each – 2 tanks
IS-10	Generator diesel day tank	5-80-720 B	VOC	150 gallons
IS-11	Fire pump diesel tank	5-80-720 B	VOC	460 gallons
IS-12	Welding shop	5-80-720 B	PM	N/A

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

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

A copy of the draft permit, Statement of Basis and public notice was sent to the EPA by e-mail on September 12, 2013. A public notice regarding the draft permit was published in the *Bristol Herald Courier* on September 16, 2013, and the *Coalfield Progress* on September 17, 2013. A copy of the public notice was sent to the affected states, which include Kentucky, Tennessee, West Virginia, and North Carolina, and to all persons on the Title IV and Title V mailing lists, by e-mail or postal mail as requested, no later than September 17, 2013. The public comment period for the draft permit started on September 18, 2013, and continued through October 17, 2013. No comments were received from the public, affected states or EPA during the public comment period concerning the draft permit.

The EPA 45-day review of the proposed permit started on October 22, 2013, and continued through December 5, 2013. The EPA provided comments on the proposed permit by e-mail on December 4, 2013, and the DEQ Southwest Regional Office responded to those comments by e-mail on December 6, 2013. EPA comments and DEQ responses are attached to this Statement of Basis in the Response to Comments document.

Response to Comments

EPA Comment:

In permit conditions III.A.1, III.A.5, III.A.8, and III.A.9 (page 8-9) the phrase “this condition applies at all times except during start up and shutdown of the CFB” should be added. This phrase is included in other instances of permit conditions referring to operation of a pollution control unit (#2, 3, etc of the same section). It is important to require the use of the pollution control equipment at all times of operation for all sets of control equipment on the CFB.

DEQ Response:

The phrase “this condition applies at all times, except during startup and shutdown of the CFB” is included in conditions for control equipment that have limited functionality at low loads associated with startup and shutdown of the CFB boilers; however, this does not provide relief during startup and shutdown from complying with emission limits applicable to the CFB boilers. It is understood that emissions of pollutants are required to be controlled at all times in conditions that do not contain that phrase. The phrase has not been added to those conditions since doing so would appear to make those conditions less stringent by providing relief from control equipment operation during startup and shutdown.

EPA Comment:

Permit condition III.D.1 (page 30) refers to initial performance testing required at most 180 days after start up of the facility. It appears this deadline has passed and the initial performance testing should have already been completed. Please clarify.

DEQ Response:

The provisions of this condition reflect testing requirements from PSD permit condition 60 that apply to the auxiliary boiler. This unit has not been constructed, and therefore, there has been no initial testing.

EPA Comment:

Permit condition III.D.1 (page 31) also refers to initial stack testing for PM_{2.5} after a test method has been approved. EPA has approved a test method for PM_{2.5} and therefore this stack test should be performed.

DEQ Response:

The auxiliary boiler to which these testing requirements apply, has not been constructed. An initial performance test for PM_{2.5} will be conducted when the unit is constructed. The requirement to test for PM_{2.5} is worded the way it is because the initial PSD permit for the facility was issued in 2008, prior to an

EPA-approved test method for PM2.5. This initial wording remains in the current PSD permit and was therefore, incorporated into the draft Title V permit for the facility. The condition in the proposed Title V permit will be revised to reflect the EPA-approved test method for PM2.5.

EPA Comment:

Permit condition III.D.3 (page 31) should also include PM2.5 in the list of pollutants for which to be tested annually (see above comment).

DEQ Response:

The condition will be revised to include PM2.5 in the list of pollutants to be tested annually.

EPA Comment:

Permit condition III.E.3.b 3AP10 should be changed to the proper mailcode of the Office of Enforcement, 3AP40.

DEQ Response:

The mailcode will be revised to 3AP40.