

TENTATIVE AGENDA AND MINIBOOK
STATE AIR POLLUTION CONTROL BOARD MEETING

FRIDAY, JUNE 17, 2016
HOUSE ROOM C
GENERAL ASSEMBLY BUILDING
9TH & BROAD STREETS
RICHMOND, VIRGINIA

Convene – 10:00 a.m.

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ADJOURN

NOTE: The Board reserves the right to revise this agenda without notice unless prohibited by law. Revisions to the agenda include, but are not limited to, scheduling changes, additions or deletions. Questions on the latest status of the agenda should be directed to Cindy M. Berndt at (804) 698-4378.

PUBLIC COMMENTS AT STATE AIR POLLUTION CONTROL BOARD MEETINGS: The Board encourages public participation in the performance of its duties and responsibilities. To this end, the Board has adopted public participation procedures for regulatory action and for case decisions. These procedures establish the times for the public to provide appropriate comment to the Board for its consideration.

For REGULATORY ACTIONS (adoption, amendment or repeal of regulations), public participation is governed by the Administrative Process Act and the Board's Public Participation Guidelines. Public comment is accepted during the Notice of Intended Regulatory Action phase (minimum 30-day comment period) and during the Notice of Public Comment Period on Proposed Regulatory Action (minimum 60-day comment period). Notice of these

comment periods is announced in the Virginia Register, by posting to the Department of Environmental Quality and Virginia Regulatory Town Hall web sites and by mail to those on the Regulatory Development Mailing List. The comments received during the announced public comment periods are summarized for the Board and considered by the Board when making a decision on the regulatory action.

For CASE DECISIONS (issuance and amendment of permits), the Board adopts public participation procedures in the individual regulations which establish the permit programs. As a general rule, public comment is accepted on a draft permit for a period of 30 days. In some cases a public hearing is held at the conclusion of the public comment period on a draft permit. In other cases there may be an additional comment period during which a public hearing is held.

In light of these established procedures, the Board accepts public comment on regulatory actions and case decisions, as well as general comments, at Board meetings in accordance with the following:

REGULATORY ACTIONS: Comments on regulatory actions are allowed only when the staff initially presents a regulatory action to the Board for final adoption. At that time, those persons who commented during the public comment period on the proposal are allowed up to 3 minutes to respond to the summary of the comments presented to the Board. Adoption of an emergency regulation is a final adoption for the purposes of this policy. Persons are allowed up to 3 minutes to address the Board on the emergency regulation under consideration.

CASE DECISIONS: Comments on pending case decisions at Board meetings are accepted only when the staff initially presents the pending case decision to the Board for final action. At that time the Board will allow up to 5 minutes for the applicant/owner to make his complete presentation on the pending decision, unless the applicant/owner objects to specific conditions of the decision. In that case, the applicant/owner will be allowed up to 15 minutes to make his complete presentation. The Board will then allow others who commented at the public hearing or during the public comment period up to 3 minutes to exercise their rights to respond to the summary of the prior public comment period presented to the Board. No public comment is allowed on case decisions when a FORMAL HEARING is being held.

POOLING MINUTES: Those persons who commented during the public hearing or public comment period and attend the Board meeting may pool their minutes to allow for a single presentation to the Board that does not exceed the time limitation of 3 minutes times the number of persons pooling minutes, or 15 minutes, whichever is less.

NEW INFORMATION will not be accepted at the meeting. The Board expects comments and information on a regulatory action or pending case decision to be submitted during the established public comment periods. However, the Board recognizes that in rare instances new information may become available after the close of the public comment period. To provide for consideration of and ensure the appropriate review of this new information, persons who commented during the prior public comment period shall submit the new information to the Department of Environmental Quality (Department) staff contact listed below at least 10 days prior to the Board meeting. The Board's decision will be based on the Department-developed official file and discussions at the Board meeting. In the case of a regulatory action, should the Board or Department decide that the new information was not reasonably available during the prior public comment period, is significant to the Board's decision and should be included in the official file, the Department may announce an additional public comment period in order for all interested persons to have an opportunity to participate.

PUBLIC FORUM: The Board schedules a public forum at each regular meeting to provide an opportunity for citizens to address the Board on matters other than those on the agenda, pending regulatory actions or pending case decisions. Those persons wishing to address the Board during this time should indicate their desire on the sign-in cards/sheet and limit their presentations to 3 minutes or less.

The Board reserves the right to alter the time limitations set forth in this policy without notice and to ensure comments presented at the meeting conform to this policy.

Department of Environmental Quality Staff Contact: Cindy M. Berndt, Director, Regulatory Affairs, Department of Environmental Quality, 629 East Main Street, P.O. Box 1105, Richmond, Virginia 23218, phone (804) 698-4378; fax (804) 698-4346; e-mail: cindy.berndt@deq.virginia.gov.

Definition of Volatile Organic Compound (9VAC5-10, Rev. C16): Section 109 (a) of the federal Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to prescribe national ambient air quality standards (NAAQS) to protect public health. Section 110 mandates that each state adopt and submit to EPA a state implementation plan (SIP) which provides for the implementation, maintenance, and enforcement of the NAAQS. Ozone, one of the pollutants for which there is a NAAQS, is in part created by emissions of volatile organic compounds (VOCs). Therefore, in order to control ozone, VOCs must be addressed in Virginia's SIP.

40 CFR Part 51 sets out requirements for the preparation, adoption, and submittal of SIPs. Section 51.100, which consists of a list of definitions, includes a definition of VOC. This definition is revised by EPA in order to add or remove VOCs as necessary. If it can be demonstrated that a particular VOC is "negligibly reactive"--that is, if it can be shown that a VOC is not as reactive and therefore does not have a significant effect on ground-level or upper atmospheric ozone--then EPA may remove that substance from the definition of VOC. On February 25, 2016 (81 FR 9339), EPA revised the definition of volatile organic compound (VOC) to remove the recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements related to the use of t-butyl acetate (also known as tertiary butyl acetate or TBAC) as a VOC. The state definition must now be revised accordingly.

The purpose of 9VAC5 Chapter 10 (general definitions) is not to impose any regulatory requirements in and of itself, but to provide a basis for and support to other provisions of the Regulations for the Control and Abatement of Air Pollution, which are in place in order to protect public health and welfare. The proposed amendments are being made to ensure that the definition of VOC, which is crucial to many of the regulations, is up-to-date and scientifically accurate, as well as consistent with the overall EPA requirements.

The department is requesting approval of a proposal for public comment that meets federal statutory and regulatory requirements. Approval of the proposal will ensure that the Commonwealth will be able to meet its obligations under the federal Clean Air Act. The proposal removes the recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements related to the use of t-butyl acetate (also known as tertiary butyl acetate or TBAC) as a VOC.

Virginia Electric and Power Company Greenville Power Station – Prevention of Significant Deterioration Permit Registration No. 52525 - Public Participation Report and Request for Board Action:

INTRODUCTION: Virginia Electric and Power Company (Dominion) has proposed to construct and operate a new natural gas-fired combined-cycle electric power generating facility in Greenville County with a nominal generating capacity of 1600 megawatts (MW) at ISO (International Organization for Standardization) conditions. Prevention of Significant Deterioration (PSD) permitting is triggered because, as a fossil fuel-fired steam electric plant of more than 250 million British thermal units (MMBtus) per hour heat input capacity, the proposed facility is a major stationary source under 9 VAC 5 Chapter 80, Article 8. The proposed site is a rural area of Greenville County, about 6 miles west of the city of Emporia.

Dominion submitted its initial air permit application on November 24, 2014. The application was deemed complete on February 10, 2016 when a revised Best Available Control Technology (BACT) analysis for the alternate operating scenarios was received.

The applicant held the required informational briefing on February 19, 2015. DEQ's public hearing for the proposed permit was held March 16, 2016. The public comment period was opened February 14, 2016 and ended March 31, 2016.

Staff analysis has shown that Dominion has met the requirements of the PSD permitting regulations at 9 VAC 5 Chapter 80, Part II, Article 8, and that the proposed facility, operating in accordance with the conditions of the

proposed permit, will not cause an exceedance of ambient air quality standards and consumption of allowable increment.

PERMIT APPLICATION REVIEW: Dominion has applied for a permit to construct and operate a natural gas-fired combined cycle electric power generating facility with a nominal generating capacity of 1600 megawatts (MW). The proposed facility is comprised of three combustion turbine (CT) generators, each having a heat recovery steam generator (HRSG) driving a common steam turbine (ST) for additional electricity generation. Each HRSG has a duct burner (DB) for supplemental firing. The CT-HRSG arrangement is commonly called combined cycle. The proposed facility also includes an auxiliary boiler, an emergency diesel firewater pump, an emergency diesel generator, two emergency propane generators, six fuel gas heaters, four turbine inlet chillers, 14 circuit breakers, and a distillate oil storage tank.

The pollutants of concern from the combined-cycle units are nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), greenhouse gases (GHG), sulfur dioxide (SO₂), sulfuric acid mist (H₂SO₄), particulate matter having an aerodynamic diameter equal to or less than ten microns (PM₁₀), and particulate matter having an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}). NO_x from the units will be controlled using dry low-NOX combustion and selective catalytic reduction (SCR). CO and VOC, and some toxic pollutants, will be controlled by oxidation catalyst. The total emissions from the proposed project are shown in Table 1.

Table 1. Total emissions from proposed GCPS

Pollutant	Emissions (tons/yr)
NO _x	370.8
CO	880.1
SO ₂	56.5
VOC	646.9
PM ₁₀	188.6
PM _{2.5}	188.1
Sulfuric acid mist	29.8
GHG	5,783,753.0
Formaldehyde	6.5
Acrolein	0.18
Cadmium	0.053
Chromium	0.068
Nickel	0.11
Mercury	0.013
Lead	0.024

Note: Emissions of regulated toxic pollutants other than those listed above are below permitting exemption thresholds and were therefore not included in Table 1

The proposed site for the GCPS is a 1,143-acre parcel on Rogers Road, near the intersection of Radium Rd (2500 Rogers Rd, Rt. 605). The site is located in a rural area consisting of tree plantations and farms. There are no Class I areas (areas such as national parks or wildlife sanctuaries) within 100 km of the proposed facility. The Federal Land Managers were notified of the project but none requested that a Class I Air Quality Related Values modeling analysis be included as part of the permit review.

DEPARTMENT ANALYSIS:

Criteria Pollutants

Applicability of PSD review is evaluated on a pollutant-specific basis. A new stationary source that has the potential to emit (PTE) major quantities of a pollutant (i.e., a fossil fuel-fired steam electric plant over 250 MMBtus per hour heat input having the PTE to emit over 100 tons per year of a pollutant) is subject to PSD review for any regulated NSR pollutant with the PTE over the PSD significant rate in 9 VAC 5-80-1615 C. Pollutants exceeding PSD major or PSD significance levels for the proposed Dominion project are NO_x, CO, VOC, GHG, PM₁₀, PM_{2.5}, SO₂ and sulfuric acid mist. GHG emissions (CO₂ equivalents or CO₂e) exceeded the PSD threshold established by EPA's PSD and Title V Greenhouse Gas Tailoring Rule, adopted in 9 VAC 5-85-50 (75,000 tons per year) and so, too, are subject to PSD review.

Emissions of pollutants subject to PSD review are required to undergo a top-down Best Available Control Technology (BACT) analysis and air quality analyses.

BACT

Pollutants subject to a PSD review from a proposed facility must undergo a rigorous “top-down” BACT analysis. The “top-down” method provides that all available control technologies be ranked in descending order of control effectiveness. The applicant first examines the most stringent or “top” alternative. The top alternative is established as BACT unless the applicant demonstrates that technical considerations or energy, environmental, or economic impacts justify that the most stringent technology is not feasible. For the proposed Dominion project, the pollutants subject to BACT are NO_x, CO, VOC, PM₁₀, PM_{2.5}, CO_{2e}, SO₂ and sulfuric acid mist.

A summary of the BACT analysis is presented in Table 2.

Table 2 – BACT for normal operation

Pollutant	Primary BACT	Control	Compliance
NO _x	Turbine 2.0 ppmvd @ 15% O ₂ (1-hour avg.)	DLN burners SCR	Annual fuel throughput Stack test NO _x CEMS
	Auxiliary Boiler and fuel gas heaters 9 ppmvd (0.011 lbs/MMBtu)	DLN burners	Annual fuel throughput Stack test
	Emergency Generators EG-1 6.4 g/kW-hr NO _x +NMHC FWP-1 4.0 g/kW-hr NO _x +NMHC EG-2&3 2.0 g/hp-hr	Good combustion practices	Annual hours of operation
SO ₂	Turbine 0.00114 lb/MMBtu	Low sulfur fuel	Fuel monitoring, stack test
	Auxiliary boiler and fuel gas heaters 0.00114 lb/MMBtu	Low sulfur fuel	Fuel monitoring
	Emergency generators 0.00154 lb/MMBtu (diesel) 0.00059 lb/MMBtu (propane)	ULSD fuel with 15 ppm S (diesel units) or propane fuel (propane units)	Fuel certification and hours of operation
H ₂ SO ₄	Turbine 0.00053 lb/MMBtu without DB 0.00060 lb/MMBtu with DB	Low sulfur fuel	Fuel monitoring
	Auxiliary boiler and fuel gas heaters 0.0000876 lb/MMBtu	Low sulfur fuel	Fuel monitoring
	Emergency generators 0.00012 lb/MMBtu (diesel) 0.00005 lb/MMBtu (propane)	ULSD fuel with 15 ppm S (diesel units) or propane fuel (propane units)	Fuel monitoring
CO	Turbine 1.0 ppmvd without DB (3-hour avg.) 1.6 ppmvd with DB (3-hour avg.)	Oxidation catalyst Good combustion practices	CO CEMS
	Auxiliary boiler and fuel gas	Clean fuel and good	Stack test

	heaters 6.6 lbs/hr (0.035 lb/MMBtu)	combustion practices	
	Emergency generators 2.6 g/hp-hr (diesel) 4.0 g/kW-hr (propane)	Good combustion practices	Fuel monitoring
PM ₁₀	Turbine 9.2 lbs/hr (0.0030 lb/MMBtu) without DB (average of three test runs) 14.1 lbs/hr (0.0039 lb/MMBtu) with DB (average of three test runs)	Low sulfur/carbon fuel and good combustion practices	Stack test
	Auxiliary boiler and fuel gas heaters 0.007 lb/MMBtu	Low sulfur/carbon fuel and good combustion practices	Fuel throughput
	Emergency generators EG-1 0.4 g/kW-hr FWP-1 0.30 g/hp-hr EG2&3 0.019 g/hp-hr	Low sulfur fuel and good combustion practices	Hours of operation
	Inlet Chillers Drift rate of 0.0005% of circulating water flow and TDS of no more than 1500 mg/l	Low total dissolved solids (TDS) and drift eliminators	Weekly water quality testing for TDS
	Auxiliary Cooler Drift rate of 0.01% and TDS content of no more than 300 mg/l	Low TDS	Weekly water quality testing for TDS
PM _{2.5}	Turbine 9.2 lbs/hr (0.0030 lb/MMBtu) without DB (average of three test runs) 14.1 lbs/hr (0.0039 lb/MMBtu) with DB (average of three test runs)	Low sulfur/carbon fuel and good combustion practices	Stack test
	Auxiliary boiler and fuel gas heaters 0.007 lb/MMBtu	Low sulfur/carbon fuel and good combustion practices	Fuel throughput
	Emergency generators EG-1 0.4 g/kW-hr FWP-1 0.30 g/hp-hr EG2&3 0.019 g/hp-hr	Low sulfur fuel and good combustion practices	Hours of operation
	Inlet Chillers Drift rate of 0.0005% of circulating water flow and TDS of no more than 1500 mg/l	Low total dissolved solids (TDS) and drift eliminators	Weekly water quality testing for TDS
	Auxiliary Cooler Drift rate of 0.01% and TDS content of no more than 300 mg/l	Low TDS	Weekly water quality testing for TDS
VOC	Turbine 0.7 ppmvd without DB 1.4 ppmvd with DB	Oxidation catalyst Good combustion practices	stack test and CO CEMS compliance

	Auxiliary boiler and fuel gas heater 0.005 lb/MMBtu	Good combustion practices, operator training, and proper design, construction and maintenance	Fuel throughput
	Emergency generators FWP-1, EG-1 (see NOx + NMHC limit) EG-2&3 1.0 g/hp-hr	Good combustion practices	Hours of operation
CO ₂ e	Turbine 7,212 Btu/kW (HHV) net after 31 years 890 lb CO ₂ e/MWh after 31 years	Energy efficient combustion practices and low GHG fuels	ASME Performance Test Code on Overall Plant Performance (PTC 46) and CO ₂ CEMS (Part 75) and maintenance.
	Auxiliary boiler and fuel gas heaters 117.1 lb/MMBtu	Natural gas and fuel and high efficiency design and operation	Manufacturer specifications and maintenance.
	Emergency Units Diesel units 163.6 lb/MMBtu Propane units 136.1 lb/MMBtu	High efficiency operation, and for propane units, good combustion practices and demonstrated compliance with NSPS JJJ	fuel usage monitoring
	Electrical Circuit breakers 0.5% leakage rate	Enclosed-pressure type breaker and leak detection	Audible alarm with decreased pressure.
	Fugitive leaks from natural gas piping components	AVO monitoring and leak repair	recordkeeping

Dominion has proposed alternative operating scenarios, such as startup, shutdown, or maintenance, for the combustion turbines, during which time the normal BACT limitations may not apply. These are summarized in Table 3.

Table 3 –BACT for alternative operating scenarios

Pollutant	Startup/Shutdown	Maintenance Activities (Tuning/Water Washing)
NOx	cold start event - 1,231 lb/turbine, warm start event - 395 lb/turbine, hot start event - 148 lb/turbine shutdown event - 65 lb/turbine	648 lb/turbine/day
CO	cold start event - 6,944 lb/turbine, warm start event - 3,316 lb/turbine, hot start event - 1,771 lb/turbine shutdown event - 1,004 lb/turbine	436 lb/turbine/day
VOC	Good combustion practices, cold start duration - 436 minutes, warm start duration - 166 minutes, hot start duration - 84 minutes, shutdown duration - 30 minutes	18 hours per day tuning & 96 hours per year, 60 minutes per wash event & 52 hours per year
PM/PM ₁₀ / PM _{2.5}	Low sulfur pipeline quality natural gas containing maximum fuel sulfur content 0.4 gr/100 scf,,	Low sulfur pipeline quality natural gas containing maximum fuel sulfur content 0.4 gr/100 scf,

Pollutant	Startup/Shutdown	Maintenance Activities (Tuning/Water Washing)
	Good combustion practices, cold start duration - 436 minutes, warm start duration - 166 minutes, hot start duration - 84 minutes, shutdown duration - 30 minutes	18 hours per day tuning & 96 hours per year, 60 minutes per wash event & 52 hours per year
SO ₂	Same as normal operation	Same as normal operation
Sulfuric Acid Mist	Same as normal operation	Same as normal operation
Greenhouse Gases	Same as normal operation	Same as normal operation

Toxic Pollutants/Hazardous Air Pollutants (HAPs)

40 CFR 63 Subpart YYYYY, National Emissions Standards for HAPs from Stationary Combustion Turbines, applies to CTs located at major HAP sources. The HAP emissions from the proposed GCPS do not exceed major source thresholds for HAPs (i.e., 10 tons per year of a single HAP or 25 tons per year of all HAPs combined). Accordingly, the proposed facility is not subject to the MACT standard.

Since the facility is not subject to the MACT standard, then emissions of toxic pollutants were examined for applicability to the toxic pollutant standards in 9 VAC 5-60-300. As a result, Dominion conducted an evaluation of toxic pollutants and compared proposed emission rates to the emission standards in 9 VAC 5-60-300. This evaluation includes a modeling analysis for eight pollutants for which permitted emissions were above the exemption levels in 9 VAC 5-60-300 (acrolein, beryllium, lead, formaldehyde, cadmium, chromium, mercury, and nickel). The modeling analysis indicates that the impacts of the eight pollutants are well below their applicable Significant Ambient Air Concentrations (SAACs).

Testing

The permit requires initial compliance testing for NO_x, SO₂, CO, PM₁₀, PM_{2.5}, and VOC from the combined-cycle units. Periodic performance testing will continue for PM₁₀, PM_{2.5}, VOC (every five years), and SO₂ (annually). Initial stack testing for NO_x and CO from the auxiliary boiler and fuel gas heaters is also required. Additional performance testing can be requested by DEQ.

Dominion must conduct an initial power block heat rate test to determine compliance with the heat rate in the permit to demonstrate efficient operation of the turbines and associated duct-fired HRSG. Periodic testing every six years is required.

Visible emissions evaluations (VEEs), concurrent with the initial CT, auxiliary boiler, and fuel gas heaters stack tests, are required by the permit.

The permit allows the permittee to use the fuel quality characteristics in a current, valid purchase contract, tariff sheet, or transportation contract for the fuel to verify that the sulfur content of the natural gas is 0.4 grains or less of total sulfur per 100 standard cubic feet. Alternatively, per 40 CFR 60.4370, the permit allows Dominion to determine the sulfur content of the natural gas by testing using two custom monitoring schedules or an EPA-approved schedule. The permit also requires the permittee to obtain fuel supplier certification for each shipment of distillate oil used in the emergency diesel generator and fire water pump.

Monitoring

The permit requires that the CT stacks be equipped with Continuous Emission Monitoring Systems (CEMS) meeting the requirements of 40 CFR Part 75 (Acid Rain Program) for NO_x, CO₂, and SO₂ (unless an alternative method of determining SO₂ emissions has been approved for that purpose). CO CEMS must meet the 40 CFR Part 60 requirements. In addition to the CEMS, the permit requires Dominion to conduct extensive, continuous monitoring of key operational parameters on the control devices to assure proper operation and performance.

Recordkeeping

The permit requires Dominion to keep records of all CEMS results; control device parametric monitoring results; results of fugitive leak inspections; monthly fuel throughput for the turbines, auxiliary boiler and fuel gas heaters; net electrical energy output of the plant; calculations of CO₂ monthly emissions; and duration of any alternative operating scenario. Dominion is further required by the permit to keep records of all fuel certifications and testing results, and monthly operating hours for the emergency generators and fire water pump.

Reporting

Dominion must provide quarterly reports to DEQ of CEMS results, including whether or not excess emissions have occurred, and emissions associated with alternative operating scenarios. Dominion is required by the permit to notify DEQ of commencement of construction, facility start-up, and to provide 30-day prior notice for each performance test conducted, and the results of performance tests. They must notify DEQ prior to each tuning and water washing event and subsequently report each instance of tuning and water washing, within 14 days of the event.

Air Quality Analyses

In addition to the BACT review, PSD regulations require an air quality analysis be performed that demonstrates the projected air emissions from the proposed facility will neither cause or significantly contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD increment. In addition, PSD regulations require that an additional impact analysis consisting of a soil and vegetation analysis, a growth analysis, and a visibility impairment analysis be conducted.

Prior to conducting the analyses, Dominion submitted a protocol outlining the intended methodology and input data for both areas. DEQ staff reviewed and approved the protocol. Based on DEQ's review of the NAAQS and PSD increment analyses, the proposed project does not cause or significantly contribute to a predicted violation of any applicable NAAQS or Class I and Class II area PSD increment.

The DEQ's review of the required air quality analyses for the GCPS for both Class I and Class II PSD areas is in the Board book. This document also includes DEQ's review of an additional impact analysis consisting of a soil and vegetation analysis, a growth analysis, and a visibility impairment analysis.

PUBLIC PARTICIPATION ACTIVITIES:

Applicant Informational Briefing

In accordance with 9 VAC 5-80-1775 C of the Regulations, the applicant held an informational briefing at 6:00 p.m. on February 19, 2015 at the Southside Virginia Education Center, Emporia Virginia. As required, the briefing was advertised in the Brunswick Times-Gazette and the Emporia Independent Messenger at least 30 days in advance (on January 14, 2015).

Public Hearing

In accordance with 9 VAC 5-80-1775 F, a public hearing announcement was published in the Emporia Independent Messenger newspaper on February 14, 2016. The public hearing was held on March 16, 2016. Thirty-two persons attended the hearing. Seventeen of the attendees offered testimony and two written comments were received and entered into the record by the Department. Of the 17 oral comments provided at the hearing, 13 were in support of the proposed facility and 4 opposed the building of the facility.

Public Comment Period

The comment period for the draft permit ran from February 14, 2016 through March 31, 2016. During the public comment period, 682 written comments and 17 oral comments were received. The written comments included one from the U.S. EPA, one from Dominion, two from environmental advocacy groups, one from the state government representatives of that district, and 677 from citizens that were similar electronic mail form letters from throughout Virginia and other states, and one email that had 166 signatures against fracked gas. Commenters requested that the State Air Pollution Control Board make the final permit determination rather than DEQ.

Copies of letters received during the public comment period are in the Board book, as is a copy of DEQ's summary of and response to the comments.

Changes to the Draft Permit

The following changes were made to the draft permit in response to comments received.

- GHG heat rate and mass emission limit were reduced.
- CO emission limits from the turbines have been reduced.
- VOC emission limits from the turbines have been reduced.
- Detection and repair requirements for fugitive methane emissions from natural gas piping components were added.
- Monitoring and periodic testing for sulfuric acid mist, PM₁₀, PM_{2.5} and VOC were added or clarified.
- Initial stack test for formaldehyde was added to show compliance with supplied emission factor.
- Reference to NSPS Subpart TTTT was moved to the permit cover letter.

Details of changes by DEQ due to typographical or minor drafting errors are provided in the Board book.

Public Notice Procedure

Before a PSD permit can be issued, the draft permit must undergo 30 days of public comment, followed by a public hearing, followed by 15 more days of public comment. The Public Notice for the start of the public comment period for the Greenville County Power Station appeared in the Independent Messenger on February 14, 2016. The draft permit and engineering analysis were posted to the DEQ public notice website for review. The public comment period ran through March 31, 2016 with a public hearing conducted on March 16, 2016.

Public Hearing

The public hearing was held at the Greenville County Board of Supervisors Meeting Room in the Greenville County Government Building, 1781 Greenville County Circle, Emporia VA. The hearing was attended by three DEQ representatives, 11 representatives from Dominion Power, 10 Government representatives (Greenville, Emporia, Chamber of Commerce), three representatives from environmental organizations (Sierra Club, Appalachian Voices, Blue Ridge Environmental Defense League) and five private citizens for a total of 32 attendees.

Comments Received

On March 14, 2016, EPA submitted written comments to DEQ in an electronic format. The comments included requesting additional stack testing and monitoring for H₂SO₄ and particulate emissions, as well as recommendations for clarifying the engineering analysis discussion of BACT for CO and VOCs.

Additionally on the 14th, EPA submitted comments on DEQ's Air Quality Analysis Report (Modeling) for the Greenville Power Station. On March 25, 2016, the DEQ modeling section responded to the EPA modeling comments. These responses are also included below. .

During the public hearing on March 16th, DEQ received one written comment and 13 oral comments in favor of the plant being built as proposed. The commenters believed that DEQ had included limitations in the permit that would protect the health of the citizens of the area and that Dominion would abide by the permit and comply with those limitations. Additionally, even though the comments were not directly related to air pollution, many cited the economic boost that the construction and operation of the plant would provide to Greenville County. Due to the general nature of these comments, there were no technical issues to be addressed by DEQ that would require a response.

During the hearing, DEQ also received one written comment and four oral comments that were not in favor of the plant being built. These commenters believed the plant, as proposed, would exceed Clean Air Act allowable

amounts of pollutants, that the environmental impact of gas hydrofracking and gas pipeline emissions were relevant to the scope of the permit, and that Dominion and DEQ did not consider some solar powered elements in conjunction with the power station.

On March 30, 2016, Dominion submitted an email with an attached document containing eight comments.

On March 31, 2016, The Sierra Club and Appalachian Voices through Appalachian Mountain Advocates (hereafter referred to as “Sierra Club”), submitted an email with an attached document containing 29 comments with 344 referenced attachments delineating what they felt as deficiencies in the draft permit and engineering analysis. They also requested consideration of the permit by the Air Pollution Control Board. Where the comments received during the hearing are substantially similar to the comments received from Sierra Club, those comments are grouped and a single response provided.

Additionally, six hundred and seventy seven individuals submitted written comments by email between March 10th and March 31st. Most of the comments were identical. In summary, the commenters believed the plant, as proposed, would exceed Clean Air Act allowable amounts of pollutants, that the environmental impact of gas hydrofracking and gas pipeline emissions were relevant to the scope of the air permit, and that Dominion and DEQ did not consider some solar powered elements in conjunction with the power station. Where the comments received from the 677 individuals are substantially similar to the comments received from Sierra Club, those comments are grouped and a single response provided.

About 61 individual commenters in this email group requested that the Air Pollution Control Board hold a hearing on the draft permit. The Sierra Club also submitted an email attachment with 14 additional signatures and addresses requesting the board to consider the permit.

SUMMARY OF EMAIL COMMENTS AND RESPONSES

A summary of the email comments and DEQ’s response to those comments is as follows:

The commenters claimed that this proposed facility would emit more emissions than allowed by the Clean Air Act, and other facilities are demonstrating lower emissions than the BACT limits in the draft permit.

DEQ Response: Comments received at the hearing with regard to BACT were not specific enough to allow the Department to properly consider and respond. However, Sierra Club provided similar comments that were specific. The Department has provided a response to Sierra Club’s specific comments.

The commenters claim that neither Dominion nor DEQ considered fugitive emissions from associated infrastructure, such as methane from natural gas drilling and transmission.

DEQ Response: A response to these comments is provided with Sierra Club’s comments on fugitive emissions (Comments 5 and 11).

The commenters claim that neither Dominion nor DEQ considered solar-powered components when evaluating the power station for PSD permitting.

DEQ Response: A response to these comments is provided with Sierra Club’s comments on solar generation (Comments 4 and 6).

The commenters requested that the Air Pollution Control Board have a hearing on the draft permit.

DEQ Response: Pursuant to 9VAC5-80-25 F., the Director of DEQ will submit the draft permit to the Virginia Air Pollution Control Board for its consideration. The permit will be presented during the Air Pollution Control Board Meeting scheduled for June 17, 2016 to be held in the Virginia General Assembly Building, House Room C,

Richmond, Virginia.

EPA COMMENTS AND RESPONSES

EPA Comments on Modeling and DEQ responses

EPA Comment 1M: The plant layout was imported into ArcGIS to examine building and stack placement along with the model receptor grid. One of the plant buildings, labeled DELUGE in the provided BPIP file, appears to be located on Rodgers Road (VA Rt 605). The plant appears to be split into three (3) non-ambient air parcels (see Figure 6.3 in AECOM report). The parcel containing the main combustion units appears to cross Rodgers Road. Rodgers Road should be considered Ambient Air and contain model receptors. Please include a map depicting the facility's full property boundary and indicate if the facility will own property in neighboring Brunswick County, VA.

DEQ Response 1M: *Rogers Road will be re-routed slightly to the north such that it does not pass through the northern extent on the plant. Since Rogers Road will be outside the plant fence line, receptors will fall on the road based on the Cartesian grid spacing used in the model).*

The plant property spans both Greensville and Brunswick Counties. The plant fence line, however, is located entirely within Greensville County.)

EPA Comment 2M: Please provide a brief summary of QA/QC procedures followed for the on-site met data collection and who is responsible for retaining these records.

DEQ Response 2M: *The Quality Assurance Project Plan (QAPP) for the ambient air quality monitoring station was prepared by TRC and was approved by the Virginia Department of Environmental Quality (DEQ). The QAPP contains all the details regarding the QA/QC procedures for the meteorological data.*

EPA Comment 3M: Please include the dates over which the background monitoring data was collected. We believe the collection period should comply with 40 CFR 52.21(m)(1)(b)(iv). Also include any documentation regarding QA/QC procedures that were followed during the collection of this data.

DEQ Response 3M: *The background data was collected over a period of time from November 1, 2013 through April 30, 2015. This period of time satisfies the one year requirement outlined in 40 CFR 52.21 (m)(1)(b)(iv).*

The Quality Assurance Project Plan (QAPP) for the ambient air quality monitoring station was prepared by TRC and was approved by the Virginia Department of Environmental Quality (DEQ). The QAPP contains all the details regarding the QA/QC procedures for the meteorological data.

EPA Comment 4M: Emissions from the ULSD Emergency Generator, two (2) propane fired emergency generators and emergency fire-water pump were excluded from the 1-hour NO₂ model runs but included in the 1-hour CO model runs for the SIL and NAAQS analysis. An operating exclusion during periods of startup and shutdown operations should be included in the final operating permit for the previously listed emergency equipment.

DEQ Response 4M: *The modeling for 1-hour NO₂ (SIL and NAAQS) excluded the emergency equipment because of the statistical nature of the 1-hour NO₂ NAAQS. The exclusion of these sources was based on guidance from DEQ and is consistent with the EPA's March 1, 2011 Clarification memo (http://www.epa.gov/ttn/scram/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf) as these sources have intermittent activity. These emergency sources are limited to 100 hours per year of non-emergency use and would meet EPA's criteria (as outlined in the March 1, 2011 Clarification memo) for an intermittent source. EPA recommends in the March 1, 2011 Clarification memo that intermittent sources can be excluded from 1-hour NO₂ modeling as they should not have a statistically significant importance on the modeling for that standard.*

Since the 1-hour CO NAAQS is not a statistically based standard, these sources were included in that modeling analysis.

EPA Comment 5M: Based on emissions information included in Table 3.3 and the modeling input files, maximum emissions during startup only appear to occur for two out of the three combustion turbines. A permit restriction on the number of units in startup mode during any hour should be considered so that operations reflect what was used in the modeling analysis.

DEQ Response 5M: For 1-hour NO₂, the modeling for startup and shutdown followed a rigorous exercise to identify the worst-case hour of the start (cold starts are the worst case as the SCR is not up to temperature). For NO₂ emission, the worst-case hour was associated with a cold start while turbines one and two were first coming online simultaneously. Turbine 3 would follow hours later on a cold start but had zero emissions while turbines 1 and 2 were starting up.

EPA Comment 6M: The PSD modeling analysis for PM-2.5 includes off-site (Virginia) sources from the NAAQS analysis. While this approach is conservative, please explain if these off-site sources would consume actual PM-2.5 increment.

DEQ Response 6M: The source file used for the PM-2.5 PSD increment consumption modeling was inadvertently named the same as the file used for the NAAQS modeling. However, the source included in the file represents just the Brunswick County Power Station (BCPS), the only PM-2.5 increment consuming source in the area.

EPA Comment 7M: VA DEQ should explain in what areas the PM-2.5 increment has been triggered. Baseline dates, their establishment and triggering sources should be properly documented.

DEQ Response 7M: The Dominion Greenville application was the first complete PSD application submitted in Greenville County. Therefore, the deemed complete date for this application established the PM-2.5 minor source baseline date for this county. VADEQ currently tracks baseline dates in Virginia. The following table lists the Virginia counties with established PM-2.5 baseline dates.

PM-2.5 Baseline Dates in Virginia

County/Independent City	Pollutant	Minor Source Baseline Date
Brunswick County	PM-2.5	December 21, 2012
Frederick County	PM-2.5	November 25, 2013
Greenville County	PM-2.5	December 9, 2015
Prince George County	PM-2.5	January 11, 2012
Pulaski County	PM-2.5	September 22, 2015

EPA Comments on Draft Permit and DEQ Responses

EPA Comment 1P: PSD and Title V permit should include monitoring, recordkeeping and reporting requirements sufficient to demonstrate compliance with emissions limits. It appears that the monitoring, recordkeeping and reporting requirements in the proposed permit do not fulfill practical enforceability requirements. The following comments indicate examples of gaps in proposed permit in relation to monitoring. Recordkeeping and reporting associated with the monitoring gaps are also missing.

- a. Combustion Turbines: Though the permit includes emissions limits for sulfuric acid mist from the combustion turbines, there are no monitoring or stack testing requirements for sulfuric acid mist.

DEQ Response 1Pa: The monitoring and recordkeeping requirements for sulfuric acid mist are the same as those for SO₂. This was an oversight and has been corrected in the draft permit by including sulfuric

acid mist requirements in those monitoring and recordkeeping conditions for SO₂.

- b. Emissions of PM₁₀, PM_{2.5} and VOC from the combustion turbines have an initial stack test requirement. However, the permit does not include ongoing monitoring, calculations, or stack testing requirements to ensure ongoing compliance with the limits. A possible strategy to fulfill ongoing monitoring requirements for PM_{2.5}, PM₁₀ and PM would be to require monthly calculations based on emission factors and fuel throughput in conjunction with periodic testing. Stack testing could be structured using a tiered approach. For instance, stack tests are required initially and two years later. If, after the second stack test the stack test results from the most recent stack test indicate emissions of 75% or less than the allowable emissions, then the next stack test could be within 5 years. Otherwise, another stack test would be required within 2 years.

DEQ Response 1Pb: The permit will include periodic testing for PM₁₀, PM_{2.5}, and VOC every 5 years. Additionally, the permittee will conduct an initial stack test for those pollutants and, based on the results, will develop approved emission factors and, with fuel throughput monitoring, will perform monthly calculations to determine a 12-month rolling total to show compliance with annual emission limits for these pollutants from the combustion turbines and associated duct burners. Particulate emissions from natural gas are mainly due to incomplete combustion of the low-ash gaseous fuel and are PM₁₀ or smaller. Incomplete combustion also results in higher VOC and CO emissions. Compliance with the CO emission limit is an indication of compliance with the VOC and all of the particulate emission limits. The indication provided by compliance with the CO emission limit in conjunction with the additional testing that has been added every five years ensures the relationship between CO, VOC, and particulate remains accurate over the life of the units and therefore provided a reasonable assurance of compliance.

EPA Comment 2P: Please ensure that the rationale presented in the engineering analysis for selecting BACT is consistent with the definition in 40 CFR §52.21(b)(12). There are several instances in the engineering analysis where the rationale appears inadequate to justify emission limits higher than those of similar units in the RACT/BACT/LAER Clearinghouse (RBLC) or demonstrated in practice. For instance,

- a) on page 22 of the engineering analysis, when discussing BACT for VOCs from combustion turbines, the statement is made "...there are a few projects with both higher and lower emissions rates." The median and mode of projects in RBLC are then presented. BACT analysis requires either the "maximum degree of reduction" or a justification for why this standard is not achievable. This discussion is not present in the engineering analysis.
- b) Similarly, on page 20 of the engineering analysis, which discusses BACT for CO from the combustion turbines, the statement is made, "...only a few projects have been permitted at CO emission rates below 2 ppmvd..." The discussion does not discuss why the lower emission rates of other projects are not achievable for this project.
- c) On page 21 of the engineering analysis, when discussing BACT for CO from emergency generators and the fire water pump, the statement is made, "The units can meet the NSPS standards for engines through proper operation and maintenance of the units, and burning cleaner fuels. Therefore BACT for CO..." The statement seems to imply that fulfilling NSPS requirements also fulfill BACT requirements. Though BACT requirements may not be less stringent than NSPS requirements, fulfilling NSPS requirements do not automatically satisfy BACT requirements.

DEQ Response 2Pa: DEQ did not mean to imply that BACT was based on the median value of VOC in RBLC. DEQ was trying to illustrate the variability in the data. Based on this and other comments, DEQ has revised the BACT determination for VOC and the analysis has been updated accordingly (see Sierra Club Comment 19 for additional discussion of the BACT review).

DEQ Response 2Pb: Based on this and other comments, DEQ has revised the BACT determination for VOC and the analysis has been updated accordingly (see Sierra Club Comment 15 for additional discussion of the BACT review).

DEQ Response 2Pc: DEQ did not mean to imply that the NSPS for the internal combustion engines was used as a BACT limit. DEQ was trying to convey that the emission limits that were selected as BACT met the requirements of the NSPS. The engineering analysis was revised to clarify this.

EPA Comment 3P: CO for combustion turbines: On page 20 of the engineering analysis, the CO limits from the combustion turbines is 1.5 ppmvd without duct burning and 2.4 ppmvd with duct burning. The engineering analysis states that the compliance with the limits is to be based on a one-hour average. This is consistent with the CO limit established in the Dominion Warren County Power Station. However, the CO limit in the permit uses a less stringent “three hour rolling average.” Please either adjust the permit to match the engineering analysis or update the engineering analysis to justify a 3-hour rolling average as BACT in light of the Warren County Power Station limit.

DEQ Response 3P: As noted in the response to Sierra Club Comment 15, the CO BACT determination has been revised. Given the stringency of the limitation, a three-hour averaging time to show compliance with the CO limit, rather than a one-hour averaging time, is appropriate. The engineering analysis was corrected to match the permit.

EPA Comment 4P: CO limit for auxiliary boiler and fuel gas heaters: On page 20 of the engineering analysis the last sentence on this page states: “...CO from auxiliary boiler and fuel gas heaters to a level of 0.022 lb/MMBtu (1.5 ppmvd w/o duct burning and 2.4 ppmvd w/duct burning).” However, the corresponding permit condition 13 cites a maximum CO emission rate of 0.0037 lb/MMBtu. Please either correct or explain the reason behind this apparent discrepancy. Please also ensure the CO limits in permit conditions 41 and 46 match the appropriate limit. Additionally, please clarify if the auxiliary boiler and fuel gas heaters have duct burning capabilities.

DEQ Response 4P: This was an error in the engineering analysis and the CO BACT determination for the turbines was inadvertently repeated for the auxiliary boiler and fuel gas heaters. This was corrected in the engineering analysis to match the permit. The auxiliary boiler and fuel gas heaters do not have duct burning capabilities.

EPA Comment 5P: Please ensure NSPS Subpart TTTT requirements are included and cited in the permit. If the NSPS subpart TTTT emissions requirements are less stringent than BACT requirements, please either include both NSPS and BACT requirements as separate conditions or include a streamlined requirement for both requirements. Similarly, please include and cite NSPS Subpart TTTT monitoring, recordkeeping, and reporting in the permit.

DEQ Response 5P: Federal rules such as NSPS, apply regardless of inclusion in an underlying NSR permit. The PSD permit program does not have a streamlining concept akin to the Title V program. Most importantly, DEQ has not yet incorporated NSPS TTTT into the Regulations; therefore, Virginia does not yet have delegation from EPA to enforce this NSPS. It is DEQ practice to reference non-delegated standards such as NSPS Subpart TTTT in the cover letter of the permit, rather than in the body of the permit. The Title V permit for this facility, when issued, will include the applicable requirements from NSPS Subpart TTTT.

SIERRA CLUB/APPALACHIAN VOICES (Sierra Club) COMMENTS AND RESPONSES

Sierra Club’s comments were very detailed (51 pages not including attachments). In lieu of summarizing each comment, the heading utilized by Sierra Club for each comment is included in this document.

Sierra Club Comment No. 1: The application fails to identify, describe, and analyze all pollutant-emitting activities of the source.

DEQ Response: The comment indicates that all activities associated with the proposed Atlantic Coast Pipeline (ACP) are in fact one stationary source with the Greenville facility. The commenter appears to rely on a connection between a utility pipeline and the Greenville facility as creating a linkage that makes all activities associated with the 600-mile ACP “contiguous.” To indicate that a utility connection creates contiguity would render the term meaningless, as all properties are contiguous in that light. Even in the original Summit aggregation determination by EPA, prior to its vacatur by the Circuit Court¹, EPA did not treat the facilities in

¹ The Department believes that the Court’s opinion in *Summit Petroleum v. EPA*, 690 F.3d 733, 738 n.3 (6th Cir. 2012) is controlling in this case, which indicates that physical proximity is the appropriate and only test when determining if operations are contiguous or adjacent. Under the physical proximity only test, the argument that activities over 600 miles are contiguous

question, connected by piping to deliver products between the facilities, as contiguous. The proposed ACP and proposed Greenville facility are not contiguous because the pollutant emitting activities are not on physically bordering properties.

As in EPA's original Summit determination, our determination regarding application of "stationary source" to this scenario therefore turns to the term "adjacent," where EPA has used a physical proximity and functional interrelatedness test. Several factors are considered regarding a review of adjacency; the Board's Regulations and historic implementation of "stationary source", EPA's Summit determination and resulting Court decision, Alabama v Costle and the 1980 preamble to the resulting PSD regulations, and most importantly, the case-specific facts here.

A review of the case-specific facts does not warrant aggregating the ACP with the Greenville facility. Utilizing EPA's historical guidance regarding "stationary source," a review of functional interrelatedness and physical proximity is provided. The test fails on both counts. As noted in the comment, the activities are spread over hundreds of miles. The Department considers this distance to be outside the concept of reasonable physical proximity for these activities. Activities at these distances do not meet the common sense notion of a plant nor do they fit within the ordinary meaning of "building," "structure," "facility," or "installation." As to functional interrelatedness, several factors are considered. As noted in the comment, the Greenville facility is served by two gas pipelines; therefore, Greenville is not solely reliant on the ACP. The ACP serves many gas customers and is not solely reliant on the Greenville facility. Therefore, these two operations are not truly interdependent and fail the functional interrelatedness test.

The Department has considered the case-specific factors and current regulatory text and guidance. The Department has determined that the ACP activities and the Greenville facility are not contiguous or adjacent, and lack functional interrelatedness therefore, the two activities are not a single stationary source.

The remaining items in this comment rely on aggregation of the activities. It is noted that the Greenville facility is a "major stationary source" under the PSD and Title V programs.

Sierra Club Comment No. 2: The application lacks information necessary to determine whether the applicant will apply the best available control technology.

DEQ Response: This comment does not specifically address a short-coming in the draft permit. The Department has reviewed the application information and drafted a permit containing provisions implementing BACT for all pollutants subject to review. The draft permit has been available for public review and comment. Comments received discuss at length various positions regarding the draft permit and the application of BACT. For example, Comment 17 addresses the commenter's review regarding fuel sulfur content BACT. Further discussion regarding BACT will be made with each specific comment.

Sierra Club Comment No. 3: The application fails to include information obtained from the manufacturer or other vendors

DEQ Response: This comment appears to be a set of general examples where the commenter would like more information. The Department reviewed the application and determined the information was sufficient to create a draft permit. This comment does not specifically address a short-coming in the draft permit. As noted in the comment, some items are "discussed in further detail below", indicating that the commenter did have sufficient information to make reasoned comments. Responses to specific comments are provided below.

Sierra Club Comment No. 4: BACT for this facility requires analysis of solar-gas hybrid configurations.

DEQ Response: The Department has reviewed the available information and the case-specific facts for the

or adjacent clearly fails. The discussion regarding adjacency is included to demonstrate that the Greenville facility and ACP are not contiguous or adjacent if Summit did not control.

Greenville facility. After that review, the Department has determined that requiring solar generation, either in its entirety or as a supplemental fuel source, constitutes redefinition of the Greenville facility. The commenter appears to indicate that requiring significantly different equipment to be designed and installed in addition to the proposed equipment is simply supplementing fuel. The Greenville facility must be able to respond to changing demands for electricity at the time it occurs. As noted in the comment, solar production is only “likely to coincide with optimal solar generation conditions.” Supplementation of power production to meet high energy demands must be available at the time needed and does not serve its purpose if its availability is limited. Solar generation requires different engineering and equipment than a combustion turbine. The Department considers solar generation to be a redesign of the source for the Greenville facility.

For additional discussion, the comment relies on the necessity of solar generation because of a comparison to the CO₂e limit at the Palmdale facility (774 lb/MWh net) to the draft limit of 903 lb/MWh. The City of Palmdale has submitted formal notification that the facility will not be constructed; therefore, the Palmdale facility limit is not a consideration for BACT at the Greenville facility since it will never be constructed and operated as permitted. The other two facilities appear to have been proposed as hybrid facilities and do not have GHG limits, circumstances that make them irrelevant to the Greenville facility GHG BACT determination. As noted in the response to Comment 16, the proposed GHG BACT limitation is the most stringent such limit in a valid permit.

Sierra Club Comment No. 5: BACT requires consideration of restricting fuel to natural gas from processing and transmission infrastructure with effective fugitive emission controls.

DEQ Response: The comment’s reference to “offsite logistical barriers” in EPA’s GHG guidance refers to the consideration of carbon capture and sequestration of GHG emissions from the stationary source. The referenced EPA guidance on GHG BACT review clearly indicates that off-site emissions are not subject to BACT: “...a BACT analysis should not include (in Step 1 of the process) energy efficient options that may achieve reductions in a facility’s demand for energy from the electric grid but that cannot be demonstrated to achieve reduction in emissions released from the stationary source (e.g., within the property boundary).”

As discussed above, the ACP and the Greenville facility do not constitute a single stationary source.

The Regulations require that “[a] new major stationary source shall apply best available control technology for each regulated NSR pollutant that it would have the potential to emit in significant amounts.” The Department does not consider the regulation of emissions that do not occur at the major stationary source to be within the purview of BACT.

Sierra Club Comment No. 6: The BACT analysis altogether ignores alternatives to duct firing.

DEQ Response: As noted in the comment, solar production is only “likely to coincide with optimal solar generation conditions.” Supplementation of power production to meet high energy demands must be available at the time needed and does not serve its purpose if only available in limited circumstances. The Department does not consider intermittently available solar generation or to require additional alternative equipment such as battery back-up or a fourth combustion turbine to be an acceptable substitution for the flexibility and reliability of duct burners. The Department has determined that requiring the cited alternative equipment would redefine the Greenville facility.

As noted in the response to Comment 16, the base case utilized to determine BACT for GHG at the Greenville facility considers 3-on-1 configuration at its most efficient operation (i.e., 100% load and no duct firing) As that case does not consider duct-firing and the resulting limit applies at all times, the facility’s performance will have to exceed the expected operation to allow for duct-firing. Duct firing at the Greenville facility can only occur in compliance with the lb CO₂e/MWh limitation. The Department has determined that the lb CO₂e/MWh limitation is BACT for all operating scenarios.

Sierra Club Comment No. 7: The BACT analysis improperly eliminates Carbon Capture and Sequestration (CCS)

DEQ Response: The Department reviewed the available information and made a draft determination that CCS is not BACT for the Greenville facility. That determination was discussed in detail in the permit support document (Analysis). The commenter requests additional possibilities to be considered but does not provide any information identifying where the Department's determination is unreasoned. In fact, the comment ignores the Department's determination and justification altogether. The Department has made a reasoned determination and the administrative record supports that decision. CCS is not cost-effective and creates an unreasonable energy penalty.

Dominion has chosen to submit additional information for the record in response to the commenter's concerns. The submitted information supports the Department's determination that CCS is not BACT for the Greenville facility.

Sierra Club Comment No. 8: The BACT analysis improperly eliminates biodiesel for limited use engines.

DEQ Response: The Department considers long-term storage implications indicative of the technical feasibility of a fuel. An emergency engine must be available but may not be operated consistently, allowing fuel to be stored for long periods of time. Possible breakdown of the fuel, which may occur with biodiesel, is contrary to the basic purpose of an emergency engine. It is important to note that EPA's definition of "diesel fuel" in 40CFR80.2 includes biodiesel. Therefore, while a requirement to only combust biodiesel is inappropriate and would be contrary to the unit's basic purpose, combustion of biodiesel is not prohibited.

Sierra Club Comment No. 9: The BACT analysis improperly eliminates a spark-ignited natural gas engine for emergency generation.

DEQ Response: Cost-effectiveness is a site-specific concept based on many factors, most important of which is the pollutant in question. Applying the same cost-effective threshold for emissions of different pollutants rules out aspects that may warrant a higher dollar value near a non-attainment area than might otherwise be allowed under the suggested approach. The comment cites cost-effectiveness values for a different pollutant at a different stationary source. In the cited Alaska Department of Environmental Conservation v. Environmental Protection Agency Supreme Court case, the permitting authority determined the values to be cost-effective and subsequently determined a lesser control technology to be BACT. The referenced permitting actions are not applicable because the facility proposed spark-ignition engines as part of the original design; therefore, cost-effectiveness was not a consideration. Such circumstances do not apply in this case. Cost-effectiveness in the case of Greenville is specific to GHG. Considering the site-specific facts, the Department has determined that a spark-ignition engine would be cost-prohibitive with respect to GHG for the Greenville facility's 3,000 kW emergency engine at \$466/ton.

Sierra Club Comment No. 10: The BACT analysis improperly eliminates an oxidation catalyst for the auxiliary boiler.

DEQ Response: The boilers in the cited permits do not have a capacity factor of 10% but instead have much higher capacity factors. Regardless of the term auxiliary, the higher utilization provided for in the other permits is not comparable. The Department has determined that oxidation catalyst is not cost-effective for the auxiliary boiler at 10% annual capacity for the Greenville facility.

Sierra Club Comment No. 11: The draft permit lacks emission limitations on fugitive emissions from the plant itself.

DEQ Response: The Department has reviewed the permits cited by the commenter and performed a search of the RBLC. BACT for fugitive emissions in each circumstance was an audio, visual, and olfactory (AVO) monitoring plan. The Department's review indicates this is the top level of control that has been demonstrated by a similar facility. The Department has reviewed the information now available and has determined that a daily AVO program is BACT for the Greenville facility. The permit now contains a requirement to develop and implement an AVO program.

Dominion submitted additional information regarding BACT for fugitive emissions, which further supports DEQ's BACT determination.

Sierra Club Comment No. 12: The draft permit lacks ammonia slip limitations.

DEQ Response: Ammonia is not a regulated NSR pollutant. Similar permits with ammonia slip limitations have other considerations, such as proximity to a Class I area or odor concerns. The Greenville facility has no such issues. In Virginia odor is regulated under a state-only enforceable program, not as a PSD permit requirement. Ammonia slip limits are not required pursuant to the PSD program in circumstances such as those present at the Greenville facility, which is the subject of the comment period.

The engineering analysis notes that a conversion of ammonia can happen that creates in-stack particulate in the form of ammonium bisulfate. The emissions of this species of particulate is already covered by the BACT determination for particulate.

SCR performance is monitored via the ammonia feedrate and the NOx CEMS.

Sierra Club Comment No. 13: BACT for auxiliary boiler emissions requires annual boiler tune-ups.

DEQ Response: CO, VOC, and GHG from the auxiliary boiler are to be controlled by good combustion practices, operator training, and proper (high efficiency) emissions unit design, construction, operation, and maintenance. Condition 13 covers any necessary tune-ups to achieve compliance with BACT emissions limits.

Sierra Club Comment No. 14: Numeric limitations for NOx from the gas turbines do not reflect the best available control technology.

DEQ Response: The comment does not identify additional information or an error in the BACT determination that would result in a lower value, nor does the comment indicate the Department's determination is unreasoned. The comment agrees that the numeric NOx limitation appears to be BACT, but wishes for other data that may support an unidentified lower number.

BACT is an emission limit that the source can meet on a continual basis over each averaging period for the lifetime of the facility. BACT limits should not necessarily reflect the maximum possible emissions control efficiency under the most favorable conditions but rather levels that will allow facilities to achieve compliance consistently over time under all operating conditions, including low-load operation and duct-burning. Consideration must also be given to the averaging time when considering a proper BACT limit. It is important to note that several pollutants, such as NOx, have a relationship with other pollutants. BACT must be considered within a larger context than finding a short-term emission rate that was achieved during ideal circumstances.

The Department has determined 2 ppm NOx at 15% oxygen for the Greenville turbines is BACT.

Sierra Club Comment No. 15: Numeric limitations for carbon monoxide from the gas turbines do not reflect the best available control technology.

DEQ Response: Based on this comment and a review of the referenced permits, the Department determined 90% control efficiency was achieved in practice at other facilities. Dominion submitted additional data regarding cost-effectiveness, indicating that the incremental cost of \$6,015/ton is not cost-effective. Incremental cost is one consideration but cannot be the only consideration. At a cost of \$790/ton CO controlled, the Department has determined that 90% control results in CO emission rates of 1.0 ppm (without duct firing) and 1.6 ppm (with duct firing), both corrected to 15% O₂. The referenced Warren County permit limits are not a valid comparison as several changes to that facility, and the resulting changes to the permit, occurred prior to commencing operation. The limits applicable to Warren are 1.5 and 2.4 ppm @ 15% O₂.

The Kleen Energy permit limits of 0.9 ppm and 1.7 ppm only apply at or above 60% load; the Greenville limit applies at all normal operation down to 50% load. Based on this comment and a review of the available data, the Department has determined that BACT for CO is 1.0 ppm @ 15% O₂ and 1.6 ppm @ 15% O₂.

Sierra Club Comment No. 16: Numeric limitations for greenhouse gases from the gas turbines do not reflect the best available control technology.

DEQ Response: This comment mentions several permits with conditions that appear more stringent than the proposed limitation. The Department received additional information from Dominion and has considered the draft permit after review of the comment, the referenced permits, and Dominion's submittals.

Dominion submitted additional information consisting of 51 different operating scenarios (cases). These cases addressed operation at various ambient conditions and operating loads. These cases were submitted in support of a possible equation-based limitation, whereby turbine operation and ambient conditions would be continuously monitored and an annual limit continuously calculated based on those data. This approach is a significant deviation from the draft permit and presented an overly complex approach. The resulting limit would have lacked clarity and presented little to no environmental benefit. The Department did not pursue this option.

However, Dominion's data indicated that the original value was based on annual operation at a short-term worst-case 98°F (Case 5). While permit limits may be properly based on worst-case operations, the GHG limit is annual (12-month rolling); some consideration must be given to expected operation over the entire period. As the proposed case is based on the short-term worst-case, the other submitted data was reviewed to determine the appropriate GHG limit.

After excluding Case 5, the Department reviewed Dominion's submitted Case 6, maximum operations of 3 turbines at ISO conditions without duct burners, which is the most efficient mode of operation for the Greenville facility. Case 6 indicates a design heat rate of 6,150 Btu/kWh net and an emission rate of 722 lb CO₂e/MWh gross. These data are used in lieu of Mitsubishi's specification sheet referenced in Comment 16 due to the differences between Greenville's specific design versus a generic rate for the combustion turbines without any consideration of site-specific design. Taking Case 6 values as a starting point, adjustments were made as follows: gross to net (2%), startup/shutdown operations (3%), degradation over 36 years (11.7%), and compliance margin (5%). The resulting values are 7,212 Btu/kWh and 890 lb CO₂e/MWh. Both values are based on higher heating value (HHV) and net power.

A review of all available data indicates this is the most stringent permitted rate that applies in all operating scenarios. A review of the Ohio Oregon Clean Energy permit referenced in the comment is not comparable. The final Ohio permit demonstrates compliance only with the lb/hr CO₂ limitation, assuming this indicates the turbine is operating as intended. There is no compliance demonstration for a lb/MWh limitation in the permit. The heat rate of 7,280 Btu/kWh similarly has no compliance demonstration in the permit. Since this permit does not actually require compliance with the stated 833 lb/MWh gross limitation, it is not considered in this BACT analysis. The values of 7,212 Btu/kWh and 890 lb CO₂e/MWh, HHV and net power, are considered BACT for the turbine-HRSG units.

A BACT determination must be achievable at all times and properly considers all proposed modes of operation. Therefore, the starting point of utilizing Case 6 must be reviewed to determine if that approach results in an achievable BACT limit. To that end, the Department reviewed all the available information submitted by Dominion and the commenters. Several scenarios were reviewed to determine if the Case 6 approach is valid, especially considering it does not represent intermediate operation, which has been proposed by Dominion and considered appropriate by the Department and represented in the draft permit. The validation began with a review of the ISO-based cases submitted by Dominion and statements by Mitsubishi regarding NSPS TTTT that were submitted by Dominion and represented as a basis for determining GHG BACT for the Greenville facility.

First, a review of the ISO cases (Cases 6, 7, 11, 14, 17, 20, 23, 29, 30, 43, 47, 50, and 51) indicates that several of these cases are likely very short-term scenarios and don't warrant consideration in an annual averaging period.

Cases 14 and 43 were not considered because the output could be met using two turbine sets. Operating with 3 turbines at such a low load is considerably less efficient than operating two turbines. While several scenarios exist where these cases would be operated, they are expected to be short-term in nature. Cases 50 and 51 were excluded because they represent chiller operation at ISO conditions. This is an unlikely long-term scenario.

The remaining cases were reviewed to consider the validity of the approach taken. Assuming equal annual operation of the facility in 3-on-1 (Case 6), 2-on-1 (Case 17), and 1-on-1 (Case 20) modes, the emission rate is 868 lb/MWh after conversion from gross to net (2%), startup/shutdown (3%), 11.7% degradation. Assuming an equal amount of operation in all of the seven remaining cases, the maximum emission rate is 881 lb/MWh after conversion.

Dominion has represented Mitsubishi's statements in comments to EPA as representing the Greensville facility. In those comments, Mitsubishi states that even assuming intermediate operation and conservative and prudent assumptions, the 501J will operate at 861 lb/MWh. Such statements by the manufacturer warrant significant consideration when reviewing the many-faceted aspects of long-term operating scenarios. Based on the review of Dominion's submitted data, including the representations in Mitsubishi's statements, the Department considers the limit of 890 lb/MWh net to be achievable.

Degradation of a turbine's efficiency is accepted as a result of normal operation. While degradation is considered for other pollutants in items such as capital recovery and catalyst replacement, GHG emissions are directly related to the mode of operation and the age of the equipment. Examples of items that affect turbine efficiency that warrant additional consideration with respect to GHG, include changes in surface roughness, changes in airfoil shape, and changes in leakage paths. These issues degrade the performance of the units and significantly affect the achievable GHG performance. However, degradation does not occur instantly upon commencing operation but occurs slowly over time.

Understanding the special GHG dynamics of efficiency degradation, a tiered approach to the degradation of the equipment has been utilized. The essence of the original draft permit condition remains unchanged, which allowed for 36 years of degradation from facility start-up. As noted above, the revised GHG BACT limits are lower than any comparable permitted value identified by the Department. While a single limit approach is acceptable and may be appropriate in many circumstances, it is not necessarily the only representation of a GHG BACT determination. Based on Dominion's knowledge of maintenance schedules for similar facilities, a proposal of tiers in either six or twelve year durations was made. The Department considers the six year duration to best represent BACT performance for the Greensville facility while balancing the complexities of such an approach. To that end, the GHG BACT determination utilizes a consistent annual degradation rate of 0.325%, based on 11.7% degradation over 36 years. Dominion has represented the life of the unit to be 36 years so no additional degradation beyond that timeframe is considered appropriate.

Due to the tiered limit, the following table is provided to illustrate how the limitation is intended to increment. The table assumes that the facility commences commercial operation on April 15, 2019.

Year	Applicable Limit	Start Date	End Date
1	812	April 15, 2019	December 31, 2020
7	828	January 1, 2026	December 31, 2026
13	843	January 1, 2032	December 31, 2032
19	859	January 1, 2038	December 31, 2038
25	875	January 1, 2044	December 31, 2044
31+	890	January 1, 2050	until shutdown

Sierra Club Comment No. 17: Numeric limitations for fuel sulfur content do not reflect the best available control technology.

DEQ Response: Sulfur content of pipeline quality natural gas has a wide range of possible values; the regulatory definition of pipeline natural gas (40CFR72.2) indicates a content of 0.5 grains or less of total sulfur per 100 standard cubic feet. As noted in previous responses, BACT must be achievable at all times. Dominion has

indicated that instantaneous values greater than 0.4 gr/100 scf have been measured. Given operation of the facility over its life, the measured sulfur data, Greenville's lack of control over the incoming sulfur content, and the higher allowed concentration in pipeline natural gas, the Department determined that a limit that provides for operation under worst-case measured values (0.4 gr S/100 scf) is appropriate BACT for the Greenville facility.

Sierra Club Comment No. 18: Numeric limitations for sulfur dioxide and sulfuric acid mist from the gas turbines do not reflect the best available control technology.

DEQ Response: As noted in the response to Comment 17, the BACT determination for sulfur content has not changed; therefore, no change to the sulfur-based emission limits is warranted. The remaining portion of the comment does not specifically address a short-coming in the draft permit.

Sierra Club Comment No. 19: Numeric limitations for volatile organic compounds from the gas turbines do not reflect the best available control technology.

DEQ Response: Commenters submitted the Chouteau facility located in Oklahoma as representing BACT. However, this facility is not subject to a 0.3 ppm limit for VOC; the permit contains a pound/hour limit. As no compliance determination for the ppm value is required, the Chouteau facility is not comparable. The remainder of the comment indicates other facilities are meeting a limit of 0.7 ppm without duct firing and therefore the Department has included these facilities in a revised BACT analysis.. As a result, the Department has determined that 0.7 ppm (without duct firing) and 1.4 ppm (with duct firing), both corrected to 15% O₂ is BACT for the Greenville facility.

Sierra Club Comment No. 20: Numeric limitations for nitrogen oxides from the auxiliary boiler do not reflect the best available control technology.

DEQ Response: The permits referenced by the comment all pertain to units that have a higher capacity factor and have add-on controls. Based on the capacity factor for Greenville's auxiliary boiler (10% annually), the Department has determined that add-on controls are not cost-effective and a limit of 0.011 lb/MMBtu is BACT for the Greenville facility.

Sierra Club Comment No. 21: Numeric limitations for carbon monoxide from the auxiliary boiler do not reflect the best available control technology.

DEQ Response: The comment mentions two facilities with oxidation catalyst, already discussed as not cost-effective for a boiler with a 10% capacity factor. The CPV St. Charles permit is based on 4,000 hours of operation per year, a significant difference from Greenville's auxiliary boiler. The Iowa Fertilizer Company auxiliary boiler is permitted for a gas consumption level equating approximately to a 75% capacity factor. The next lowest VOC limit is 0.035 lb/MMBtu. In light of the comment and further review of the available data, the Department has determined that a VOC emission rate of 0.035 lb/MMBtu is BACT for the auxiliary boiler.

Sierra Club Comment No. 22: Numeric limitations for volatile organic compounds from the auxiliary boiler do not reflect the best available control technology.

DEQ Response: The Cheyenne auxiliary boiler referenced in the comment is permitted for a capacity factor of 100%. The boiler is not comparable to the 10% capacity factor for the Greenville boiler.

Sierra Club Comment 23: Additional analysis is required to determine whether the project is a major source of hazardous air pollutants. Before exempting the turbines from 9 VAC 5-80-1470, the Department must determine their absolute, "maximum capacity" to emit formaldehyde under every conceivable scenario allowed by their "physical and operational design."³¹⁶ Section 5-80-1480 prohibits issuance of a permit until such the Department makes this determination.

DEQ Response: The comment requests that the Department determine applicability of Chapter 80, Article 7 of

Virginia's Regulations for the turbines. Article 7 applies to major-emitting process or production units that are not subject to a promulgated MACT standard. Combustion turbines at a HAP-major facility are subject to MACT YYYY; Article 7 does not apply to the Greenville facility.

HAPs are not regulated NSR pollutants unless part of a larger pollutant grouping (e.g., formaldehyde is part of VOC); therefore, the specific emission rate of formaldehyde is not a subject of this permit action. For the purpose of discussion only, Dominion has submitted an emission rate for formaldehyde from the vendor that is applicable to this boiler. The Department places a higher expected level of accuracy on such numbers. As the commenter notes in Comment 19, the vendor data is likely an over-statement of the actual emission rate of the unit. This type of over-statement is frequently proper for determination of a limit that must be achievable under worst-case circumstances.

A performance test for formaldehyde has been added to the permit to verify the applicant's emission factor.

Sierra Club Comment No. 24: The draft permit fails to incorporate applicable monitoring standards under the NSPS for greenhouse gas emissions from electric utility generating units.

DEQ Response: The referenced Clean Air Act language states the emissions of a project may not violate such standards, not that a permit must include them. Federal rules such as NSPS, apply regardless of inclusion in an underlying NSR permit. Most importantly, NSPS TTTT has not yet been delegated to Virginia. The condition referenced in the comment was inadvertently left in the draft when the references to NSPS TTTT were removed. The condition has been deleted. The applicable requirements will be incorporated into the Title V permit.

Sierra Club Comment No. 25: The draft permit fails to incorporate applicable monitoring standards under the NSPS for sulfur dioxide emissions from stationary combustion turbines.

DEQ Response: The referenced Clean Air Act language states the emissions of a project may not violate such standards, not that a permit must include them. Federal rules such as NSPS, apply regardless of inclusion in an underlying NSR permit. Compliance with the draft permit does not provide for emissions in excess of the NSPS KKKK standard. The applicable requirements will be incorporated into the Title V permit.

Dominion must meet all requirements of NSPS Subpart KKKK. 40CFR60.4365 allows natural gas-fired units to use tariff sheets from the gas supplier rather than monitor the sulfur content themselves. Dominion plans to use this strategy.

Sierra Club Comment No. 26: The draft permit's one-time testing requirement for particulate matter is insufficient.

DEQ Response: Particulate emissions from natural gas are mainly due to incomplete combustion of the low-ash gaseous fuel. Incomplete combustion also results in higher CO emissions. Compliance with the CO emission limit is sufficient to indicate compliance with the particulate emission limits. Additional testing has been added every five years to ensure the relationship between CO and particulate remains accurate over the life of the units.

Sierra Club Comment No. 27: The draft permit's quinquennial testing of heat rate is insufficient.

DEQ Response: The heat rate condition in the draft permit was based on 100% load, correction to ISO conditions, net power output, and higher heating value. A compliance test every 5 years was proposed. The purpose of this limit was to verify that the plant was designed, constructed, and continues to be maintained in a manner consistent with BACT. It is important to note that the limit and testing were based on several operating parameters that do not necessarily reflect continuous operation. The sentence stating, "This limit applies at all times" was in error because of the nature of the limit and testing regime. The mass emission limit (lb/MWh) is the limitation that applies at all times. Additionally, the testing mechanism made it clear the intent of the limit by providing for a maintenance plan, not a violation, should a test result exceed the 7,356 Btu/kWh heat rate (original draft Condition 8). In reviewing the comments, additional information from Dominion, and purpose of the limit, the condition has been revised to clearly state the intent. Following the discussion of the tiered approach in the response to

Comment 16, the testing condition is revised to require a test in the 12 month period immediately preceding an increment in the numeric value. This approach provides for the worst-case degradation for each particular degradation period. Each tier is a 6-year period; testing in the 6th year provides time for the maximum amount of degradation to occur during the period prior to demonstrating compliance. This test will reflect the design of the system at its most efficient operating scenario, not all periods of operation. The language excluding the limit from a violation of the permit has been removed. The purpose of this limit is to maintain an apples-to-apples comparison of the units' thermal efficiency, unrelated to any relative changes to emissions factors/rates. This approach is consistent with the original purpose of the limit and properly reflects the Department's desire to understand the long-term effects of degradation on a unit's base-case operating scenario. This testing continues every six years until the units cease operation.

Sierra Club Comment No. 28: The draft permit omits continuous monitoring for greenhouse gas emissions.

DEQ Response: CO₂ CEMS are now required in the draft permit; however, no CEMS exist for methane and nitrous oxide. Those two constituents of GHG from combustion and the global warming potentials are calculated using Part 98 factors.

Sierra Club Comment No. 29: The draft permit omits continuous monitoring for ammonia.

DEQ Response: As noted in the response to Comment 12, the permit does not contain an ammonia emission limit. No monitoring is necessary.

Dominion Comment 1: Condition 9.b — As written, this condition suggests that any time a turbine drops below 50 percent load, the unit must shutdown within 30 minutes. In some instances load may drop below 50% load temporarily without a shutdown. Shutdown is the process of ending fuel flow to the unit. Consequently, the shutdown definition should be tied to fuel cessation, not dropping below a percent load. Dominion requests the condition be re-worded as follows: "For the purpose of this permit, shutdown is defined as the period of time when the unit (CT-1, CT-2, or CT-3) falls below 50 percent load that ends with and at the cessation of fuel feeding, not to exceed 30 minutes; or the last 30 minutes of operation immediately preceding the cessation of fuel feeding, whichever is shorter."

DEQ Response: Dominion commented that units will occasionally drop below the 50% load threshold and the condition as written may require the unit to shutdown. The intent of the condition was to reflect a drop below 50% load with the intent of shutting down and to ensure the exclusion for shutdown does not include periods of operation above 50%. The condition has been adjusted to clarify the intent. Dominion's comment is addressed and the Department's original intent is properly reflected.

Dominion Comment 2: Condition 9.e — In order to be consistent with other permit conditions, Dominion requests the condition to state, "During startup and shutdown, the combustion turbine SCR system, including ammonia injection, and oxidation catalyst shall be operated in a manner to minimize emissions, as technologically feasible, based on the manufacturer's recommendations and/or best engineering practices, at a minimum and following the SCR manufacturer's written protocol for minimizing emissions.

DEQ Response: Dominion comments that over the life of the unit best engineering practices may become available that would improve operations beyond the original manufacturer's specifications. Over that time, scenarios may arise that are not covered by manufacturer's documentation. The revised condition language makes clear that best practices may be used where they provide equivalent or improved minimization of emissions.

Dominion Comment 3: Condition 10.a — We agree that only qualified professionals should be allowed to conduct tuning due to the complexity of the activity, significant expense of the equipment, and our commitment to emissions compliance and proper operation; however, the term "qualified professional" is not defined. It is unclear how we would be able to demonstrate that a particular individual involved in a tuning event is a "qualified professional". Dominion requests removal of "by a qualified professional".

DEQ Response: The condition now requires Dominion to maintain, and submit prior to a tuning event, documentation that each person is qualified to perform tuning. The Department will determine if the person is qualified based on this information. Failure to maintain documentation or where the Department deems the individual unqualified will negate the exclusion from the emission limitations for that tuning event.

Dominion Comments 4 and 5

Condition 10.c — "Annual tuning events shall be limited to 96 hours per CT per 12-month rolling period.

Comment — Dominion requests the ability to request more tuning hours, if needed. Additional tuning hours would require prior DEQ approval.

Condition 11.c — "Annual on-line water wash events shall not exceed 52 hours per CT per 12-month rolling period."

Comment — Dominion requests the ability to request more on-line water wash hours, if needed. Additional on-line water wash hours would require prior DEQ approval.

DEQ Response: Dominion comments that additional hours of operation in the tuning and water wash scenarios, activities that are intended to improve operation, may be needed. The values in the draft permit were taken from Dominion's application. Dominion requests an allowance for additional hours in the tuning and water wash exclusions. The additional hours would be approved by the Department outside of the PSD permit. Such a request provides for undefined future operation in the excluded scenarios. Permit limits must be well-defined and permanent. While tuning and water wash are intended to provide for improved operation, the requested change cannot be granted. Should such a need actually arise, Dominion may request a change to the permit at that time.

Dominion Comment 6: The Condition 38.b emission limits are based on operating at maximum load, not under startup or shutdown conditions and the facility already has startup and shutdown emission limits. Consequently, Dominion requests to include the following clarifying footnote to the table:

"When determining compliance with the lb/day/turbine limits above for tuning and on-line water wash events, emissions from startup and/or shutdown that may also occur on that calendar day are not included."

DEQ Response: Dominion commented that additional clarification was needed to ensure startup/shutdown emissions were not added to the tuning and water wash limitations. That was the intent of the condition. Additional language has been added to clarify the compliance demonstration.

Dominion Comment 7: Condition 39

Comment a — For the purpose of clarity, Dominion requests the language in the first sentence be amended as follows: "CO₂e emissions from the combined cycle gas turbine generators and associated duct-fired HRSG (CT-1, CT-2, CT-3 combined) plus the steam turbine shall not exceed 903 lbs/MWh gross (410 kg/MWh) calculated monthly on a 12-operating month rolling average basis. For the purpose of the CO₂, emission limit, the gas turbine generators, duct burners and steam turbine are considered a single emission unit."

Comment b — Due to fuel combustion in the electric generating equipment before electric generating capabilities are complete, Dominion requests that this condition become effective upon successful completion of the power block heat rate limit test.

DEQ Response

- a. *Dominion commented that it must be clear the steam turbine is considered in the lb/MWh CO₂e condition. This clarification has been made in the revised GHG conditions.*
- b. *Dominion commented that the condition should be effective upon successful completion of the compliance test. The intent of the comment, to clarify that debug operations are not included, is accurate. The condition becomes effective on the date the unit commences commercial operation.*

Dominion Comment 8: For the purpose of clarity, Dominion requests the following wording change to Condition 68, "Every five calendar years after initial evaluation of the heat rate limit of the power blocks, the permittee shall conduct a heat rate evaluation of the power blocks to show compliance with the heat rate limit contained in

Condition 8. The details of the evaluation are to be arranged with the Piedmont Regional Office."

DEQ Response: Dominion requests the word "calendar" be added to the once per five year testing requirement. The condition has been revised and language added to ensure clarity around the testing timeframes.

High Priority Violations (HPVs) For the Second Quarter 2016

NOV's Issued from January through March

BRRO	Radford Army Ammunitions Plant Radford, Virginia Registration No. 20656	Discovery Date: 11/24/2015 Alleged Violations: Exceeded opacity limits.	NOV: Issued 3/17/2016
NRO	Trae-Fuels LTD Bumpass, Virginia Registration No. 41057	Discovery Date: 12/17/2015 Alleged Violations: Particulate matter emissions from 2 transfer points on conveyor system; ongoing violations of facility's fugitive dust plan; exceedance of visible emissions limit from Earth Care Dryer exhaust stack; record-keeping; accumulation of dust	NOV: Issued 1/28/2016
VRO	O'Sullivan Films Inc. Winchester, Virginia Registration No. 80333	Discovery Date: 2/1/2016 Alleged Violations: Exceeded required NOx concentration limit for low NOx burners in Thermal Oil Heater.	NOV: Issued 2/29/2016

Consent Orders issued from January through March

BRRO	INGENCO – New River Dublin, Virginia Registration No. 21548	Discovery Date: 7/1/2015 Alleged Violations: Exceeded CO emissions limit during stack test.	NOV: Issued 10/5/2015 Consent Order effective 3/25/2016 including civil charge of \$7427.00.
BRRO	U.S. Army/Radford Army Ammunition Plant Radford, Virginia Registration No. 20656	Discovery Date: 4/9/2015 Alleged Violations: Exceeded emissions limit for low volatile metals during stack test.	NOV: Issued 3/23/2015, 7/15/2015 Consent Order effective 3/4/2016, including civil charge of \$204,329.00.

BRRO	WestRock Virginia Corporation – Covington (former MeadWestvaco Packaging Resource Group) Covington, Virginia Registration No. 20328	Discovery Date: 3/31/2015 Alleged Violations: Exceeded PM emissions limit during stack test.	NOV: Issued 7/8/2015 Consent Order effective 2/18/2016 including civil charge of \$28,788.00.
PRO	Richmond Energy LLC Henrico, Virginia Registration No. 52198	Discovery Date: 4/17/2015 Alleged Violations: Exceeded CO emissions limits during stack test.	NOV: Issued 8/27/2015 Consent Order effective 2/11/2016 including civil charge of \$7815.00.

Consent Orders in Development – Previously Reported NOV's

BRRO	Radford Army Ammunitions Plant Radford, Virginia Registration No. 20656	Discovery Date: 11/24/2015 Alleged Violations: Exceeded opacity limits.	NOV: Issued 12/14/2015
BRRO	NOVEC Energy Production Halifax County Biomass South Boston, Virginia Registration No. 21526	Discovery Date: 5/6/2014 Alleged Violations: Exceeded CO emissions limit.	NOV: Issued 12/14/2015
NRO	Trae-Fuels LTD Bumpass, Virginia Registration No. 41057	Discovery Date: 6/9/2015 Alleged Violations: Particulate matter emissions from 2 transfer points on conveyor system; ongoing violations of facility's fugitive dust plan; exceedance of visible emissions limit from Earth Care Dryer exhaust stack; record-keeping; accumulation of dust	NOV: Issued 6/19/2015
PRO	Honeywell Resins and Chemicals LLC - Hopewell	Discovery Date: 5/13/2015 Alleged Violations:	NOV: Issued 12/3/2015

	Hopewell, Virginia Registration No. 50232	Exceeded PM2.5 and SO2 emissions limits during stack test. Late submittal of test results.	
VRO	O-N Minerals (Chemstone) Company – Strasburg Lime Strasburg, Virginia Registration No. 80252	Discovery Date: 8/26/2015 Alleged Violations: Exceeded PM limit during stack test.	NOV: Issued 11/12/2015
VRO	Merck Sharp & Dohme Corporation Elkton, Virginia Registration No. 80524	Discovery Date: 10/20/2015 Alleged Violations: Report indicates exceedance of combined hazardous air pollutant (HAP) limits	NOV: Issued 11/10/2015