

**Dominion - Warren County Facility**  
**Virginia DEQ Air Reg. No. 81391**  
**Responses to Comments on Air Modeling Protocol Dated January 2010**

**Section 2.2 Process Description**

**DEQ Comment:** The protocol indicates the proposed facility has the potential to emit 100 tons per year or more of the regulated pollutant particulate matter having an aerodynamic diameter equal to or less than 2.5 microns (PM<sub>2.5</sub>). Therefore, PM<sub>2.5</sub> would also be subject to PSD review.

**Dominion Response:** Dominion agrees PM<sub>2.5</sub> is subject to PSD review. The language has been updated in the revised protocol.

**Section 2.3.1 Criteria Pollutant Emissions**

- 1. DEQ Comment:** The permit may need to contain an enforceable condition to limit the hours of operation as specified in the protocol for the diesel-fired emergency generator and diesel-fired fire-water pump.

**Dominion Response:** The diesel-fired generator and the diesel-fired fire water pump are emergency equipment and will not operate more than 500 hours per year. For modeling purposes, only non-emergency use will be analyzed, which is 1 hour/week and 52 hours/year. Dominion recognizes this assumption has a potential restriction on non-emergency use.

- 2. DEQ Comment:** The Table 2-1 column heading “*Maximum Hourly Emission Rates (lb/hr)*” contains footnotes (1) and (2). However, the inclusion of footnote (2) in the column heading can be confusing since it is applicable only to the inlet turbine chiller and not all of the auxiliary equipment in the table. Therefore, it would appear to be more appropriate to include footnote (2) with the inlet turbine chiller emission unit entry.

**Dominion Response:** Table 2-1 has been updated in the revised protocol; footnote (2) has been removed from the column heading and has been included with the inlet turbine chiller emission unit entry.

- 3. DEQ Comment:** The modeling protocol contains the following statement in a few sections:

*“Therefore, the proposed facility will be subject to PSD review and applicable PSD modeling for NO<sub>x</sub>, CO, H<sub>2</sub>SO<sub>4</sub>, and PM<sub>10</sub>.”*

This statement is confusing because there is no applicable PSD modeling requirement for sulfuric acid (H<sub>2</sub>SO<sub>4</sub>). Please clarify.

**Dominion Response:** The protocol has been updated removing H<sub>2</sub>SO<sub>4</sub> from the list of pollutants requiring PSD modeling.

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**Section 2.3.2 Toxic Air Pollutant Emissions**

**DEQ Comment:** The protocol states “*the electric generating units proposed by Dominion are not subject to the toxic pollutant standards in 9 VAC 5-60-300.*” Additionally, “*the fire-water pump engine and fuel gas heater are the two sources potentially subject to toxics modeling.*” The determination of which sources at the facility are subject to the requirements of 9 VAC 5 Chapter 60, Article 5 - Emission Standards for Toxic Pollutants from New and Modified Source (i.e., state air toxics rule) will be made by the DEQ Valley Regional Office (VRO). Regardless whether or not a specific emission unit (e.g., electric generating units) at an affected facility is exempt from the state air toxics rule, any modeling analysis “shall include all emissions from the stationary source, including those from sources exempted under 9 VAC 5-60-300 C,” per 9 VAC 5-60-350 C.

**Dominion Response:** Per this comment, DEQ VRO will be contacted to determine which sources and pollutants need to be addressed in the toxics analysis for the proposed project.

**Section 3.1 Background Discussion**

**DEQ Comment:** The protocol states the facility is a major source for H<sub>2</sub>SO<sub>4</sub>. However, the maximum potential annual emissions presented in the protocol for H<sub>2</sub>SO<sub>4</sub> are 9.55 tons per year which are below the applicable PSD major source threshold but above its applicable PSD significant emission rate. Therefore, the facility is not a major source for H<sub>2</sub>SO<sub>4</sub> but the H<sub>2</sub>SO<sub>4</sub> emissions are subject to PSD review.

**Dominion Response:** Dominion agrees the facility is not a major source of H<sub>2</sub>SO<sub>4</sub>, but that the emissions exceed the significant emission rate making H<sub>2</sub>SO<sub>4</sub> subject to PSD review. Section 3.1 has been revised by removing the H<sub>2</sub>SO<sub>4</sub> reference in the revised protocol.

**Section 3.2 Source Data**

- 1. DEQ Comment:** Emission rates and stack source parameters are subject to VRO approval. These parameters will be verified against the permit application. Changes to these rates or parameters may require a reanalysis of air quality impacts.

**Dominion Response:** Comment noted.

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2. **DEQ Comment:** Please specify the maximum rated heat input in million British thermal units per hour (MMBtu/hr) for each proposed combustion unit.

*Dominion Response:* The nominal heat input capacity (MMBtu/hr) for each proposed combustion turbine has been added in Sections 3.2.1 through 3.2.3 in the revised protocol. Note that the maximum heat input may vary based on ambient conditions, especially with varying air temperature.

3. **DEQ Comment:** A comparison of the hourly emission rates in Table 3-2 to Table 2-1 reveals a few inconsistencies. For example, the carbon monoxide (CO) emission rate for the auxiliary boiler in Table 3-2 is 3.17 lb/hrs versus 3.26 lb/hr in Table 2-1. It is imperative that the contents of the protocol are consistent and accurate. Please review and make any necessary revisions.

*Dominion Response:* The correct CO emission rate for the auxiliary boiler is 3.26 lb/hrs. Table 3-2 has been corrected in the revised protocol. All other emission rates have been checked for consistency and accuracy.

4. **DEQ Comment:** The title for Table 3-2 contains footnote (1). However, text for footnote (1) is not provided. Please clarify.

*Dominion Response:* A footnote has been added in the revised protocol. The note states that the data in the table are preliminary and subject to change.

5. **DEQ Comment:** The modeling protocol suggests the minimum load the facility will be operating at is 60%. Modeling of additional load scenarios below 60% may be necessary if it is anticipated that the facility will be operating at a load(s) less than 60%. The range of loads modeled should conform to the guidance contained in Section 8.1.2(a) of 40 CFR Part 51, Appendix W - Guideline on Air Quality Models (GAQM).

*Dominion Response:* A correction has been made to the emissions data for the proposed GE 7FA05 combustion turbines to revise the 60% load rating to 50/55% load. Please note that there are no changes in the emissions for that load; only the load rating has been corrected. The original description of 60% load for the GE turbine was a typographical error. The GE turbines are capable of 50% load at 0°F. and 59°F. and 55% load at 100°F. Please note that the low load point for the Siemens and Mitsubishi turbines is 60% load.

6. **DEQ Comment:** The AQAG is aware that simulating startup and shutdown conditions from the proposed facility using existing regulatory models is difficult. Specifically, startup and shutdown conditions are transient in nature and are not handled well by steady-state air quality models. Nevertheless, startup and shutdown operations, including the estimated emissions, must be addressed in the protocol and final report.

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*Dominion Response:* A section addressing the startup and shutdown emissions has been added in the revised protocol for each of the three turbine configurations. However, a startup/shutdown (SUSD) modeling analysis is proposed only for those pollutants which have emissions higher during the SUSD operations (based on averaging periods) than during the normal operations.

7. **DEQ Comment:** It is recommended that the values in Tables 3-3, 3-5 and 3-7 be highlighted to assist in the identification of the source for the values presented in Tables 3-4, 3-6 and 3-8, respectively.

*Dominion Response:* The values have been bolded and italicized in the Tables 3-3, 3-5 (now 3-6) and 3-7 (now 3-9) in the revised protocol.

8. **DEQ Comment:** Please include the heat input for the combustion turbines for each scenario presented in Tables 3-3, 3-5 and 3-7.

*Dominion Response:* The heat input for the combustion turbines has been added to Tables 3-3, 3-5 (now 3-6), and 3-7 (now 3-9) in the revised protocol.

### **Section 3.3 Model Selection**

1. **DEQ Comment:** Please provide a detailed explanation for the selection of the 0.05 parts per million (ppm) background ozone concentration. It appears that an annual average ozone concentration of 53 parts per billion (ppb) was used for the previous PLUVUE II analysis and hourly ozone values (OZONE.DAT in CALPUFF) were used in the Class I deposition analysis.

*Dominion Response:* The two values cited (0.05 ppm and 53 ppb) are essentially equivalent accounting for round-off. However, to make the two values used in the nitrogen deposition calculations and the PLUVUE modeling identical, we will use 0.053 ppm for the refinement for the annual nitrogen deposition modeling.

2. **DEQ Comment:** Please explain the nitrogen and sulfur deposition calculation in more detail. It is unclear how the nitrogen deposition will be calculated using the transformation equation. It appears that it may be necessary to calculate hourly concentrations for input to the equation. Please also explain how the sulfur deposition will be calculated using the AERMOD concentrations.

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***Dominion Response:*** Since the project does not trigger PSD review for SO<sub>2</sub>, and the Q/D for SO<sub>2</sub> is well below the FLAG (2008) screening value of 10 (it is, in fact, about 2), we are proposing not to model sulfur deposition.

Since deposition is a long-term (annual) calculation, we propose to conduct our analyses using annual averages. The "Tier 1" method assumes that all of the emitted NO<sub>x</sub> chemically transforms immediately and becomes available for deposition (as either nitric acid or ammonium nitrate). However, for transport to only about 10 km (approximately the distance to the peak impact), only a small fraction of the emitted NO<sub>x</sub> will actually transform. Therefore, if the Tier 1 method results in a deposition rate above the screening level Deposition Analysis Threshold (DAT), we propose to conduct a Tier 2 analysis that more realistically computes the fraction of emitted NO<sub>x</sub> that is chemically transformed and available for deposition. This tiered approach is similar to the tiered approach for computing the NO<sub>2</sub> concentration, for which there are various levels of refinement to predict the conversion of emitted NO to NO<sub>2</sub>.

The MESOPUFF-II refinement approach that we propose was referenced in another comment (see response to item 6 in this section below) in the VADEQ letter of February 2, 2010. Section 3.1 of the IWAQM Phase 2 document (1998) describes the CALPUFF approach. There is a nighttime chemical transformation of 2% referenced in the IWAQM document, while the daytime chemical transformation varies as a function of stability class as well as ozone and NO<sub>x</sub> concentration. The form of the transformation as  $(1 - \exp(-(\text{rate}) \cdot \text{time}))$  is a classic mathematical approach that is also reflected in the CALPUFF implementation of the MESOPUFF-II chemistry (see CALPUFF code, subroutine CHEMTF, for example). This approach is also documented as Equation 2-32 in the OCD manual supplement available at <http://www.epa.gov/scram001/userg/regmod/ocdugsup.pdf>.

The implementation of the Tier 2 approach was proposed as an annual average for several reasons:

- The nighttime rates are constant throughout the year.
- Although the daytime rates vary, the use of the proposed annual average values for the terms in the transformation equation would likely result in a similar outcome to conducting an hourly computation and averaging the hourly deposition rates.
- The hourly stability classes are not directly computed by AERMOD.
- The method does not have a solution (or any predicted concentrations) for hours with calm winds.
- For either an annual or hourly approach, the method must be conducted using an Excel spreadsheet because there is no existing model code for its implementation.

However, VADEQ suggests that it might be necessary to conduct an hourly computation for the refined approach; the resulting annual value would be computed as an average over all hourly deposition values available for the year. To remove uncertainty between the results of an annual vs. hourly approach, both the annual and hourly approaches would be applied, but limited to the worst-case Shenandoah receptor (highest annual NO<sub>2</sub> concentration) for the

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worst-case year. The protocol specifies how the annual approach would be applied. For the hourly approach, the following hourly data are used to implement the refined method:

- hourly ozone data from the Shenandoah Big Meadows CASTNET site (concurrent with the AERMOD meteorological data)
- stability class computed from the AERMET-provided friction velocity and Monin-Obukhov length using the Golder (1972) algorithm to calculate the stability class (code from the AERMOD subroutine "LTOPG" will be used)
- hourly NO<sub>x</sub> predictions at the selected receptor
- hourly wind speed from Dulles airport data.

Hourly data for calm wind hours will not be available, and will not be included in the annual average.

- 3. DEQ Comment:** Please provide the reference for the first-order transformation equations presented for the daytime and nighttime nitrogen deposition.

**Dominion Response:** Please see response to item 2 in this section, immediately above.

- 4. DEQ Comment:** Please specify the proposed meteorological station that will be used to calculate the annual average 10-meter wind speed (u) in the first-order transformation equations for the daytime and nighttime nitrogen deposition.

**Dominion Response:** Dominion will use data from Dulles airport, consistent with what was used for the previous modeling analysis.

- 5. DEQ Comment:** The protocol states the following:

*"The screening distance is determined by adding the permitted short-term emissions from proposed routine (non-emergency) point sources for SO<sub>2</sub> + NO<sub>x</sub> + PM<sub>10</sub> + H<sub>2</sub>SO<sub>4</sub>. The sum of these emissions for the scenario with the highest emissions is not expected to exceed 600 tons per year, based upon information provided in Section 2."*

A review of the information provided in Section 2 appears to indicate the Mitsubishi combustion turbine scenario would slightly exceed 600 tons per year.

**Dominion Response:** An adjustment will be provided in the revised protocol, adjusting the stated value of 600 TPY to 610 TPY in the revised protocol.

- 6. DEQ Comment:** The range for the stability category (S) in the nitrate transformation rate equation for daytime conditions is from 2 to 6 and not 1 to 6 as indicated in the protocol

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per the *Interagency Workgroup On Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts (December 1998)*. Stability category 2 includes stability classes A and B.

**Dominion Response:** The revised modeling protocol states that the stability classes 1 and 2 will be mapped into class 2 for purposes of implementing this algorithm on an hourly basis.

**Section 3.4 Meteorological Data for AERMOD and PLUVUE**

- 1. DEQ Comment:** The following statement “*Within each 2-minute period, the ASOS system stores 24 5-minute averages.*” appears to have a typographical error. Please review and make the necessary revisions.

**Dominion Response:** The phrase “5-minute averages” has been corrected to read “5-second averages” in the revised protocol.

- 2. DEQ Comment:** Please provide an explanation why the 30-year precipitation data set proposed to be used for determining the monthly surface moisture condition input to AERSURFACE is from Plains 2NNE, Virginia and not Dulles International Airport (IAD).

**Dominion Response:**

The precipitation data recorded from IAD will be used as the determining factor for the Bowen ratio selection.

- 3. DEQ Comment:** The title of Figure 3-7 states the 1-kilometer radius circle is around the Reading Spaatz Field while the actual figure presents a 1-kilometer radius circle around the proposed facility location. Please correct this error.

**Dominion Response:** The corrected title of Figure 3-7 now reads “1- km Radius Circle for the Project Site with Surface Roughness Sectors Shown on Land Use Imagery.”

**Section 3.6 Receptor Grid and AERMAP Processing**

- 1. DEQ Comment:** The AQAG recommends 25-meter receptor spacing along the facility’s ambient air boundary (e.g., fenceline) for the Class II receptor grid. In addition, it is suggested that 50-meter receptor spacing be used within 1 kilometer of the facility instead of 500 meters as proposed in the protocol. Also, it is recommended that refined modeling be conducted using 50-meter receptor spacing in the event that any maximum impact occurs beyond the initial 50-meter receptor grid.

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***Dominion Response:*** The receptor grid description has been updated in the revised protocol to include the revised receptor grid spacing and refinements.

The Class II grid will consist of receptors spaced 25 m apart along the facility's fence line. Starting at and extending 1000 m from the fence line 50 m spaced receptors will be used. Between 1 and 2.5 km, a spacing of 100 m will be used. Between 2.5 and 5 km, a spacing of 500 m will be used. Between 5 and 10 km, a spacing of 1000 m will be used. Beyond 10 km, a spacing of 2000 m will be used. No receptors within the Shenandoah National Park will be included in the Class II analysis. Receptors with 1000-m spacing will be placed at the boundary of the Class I Area extending out to 20 km.

The extent of this grid is expected to be sufficient to capture maximum impacts in the Class II area. However, if highest impacts are predicted at the edge of the grid at a distance of 20 km from the project site, additional receptors may be required to ensure that the distance covered by the SIA is determined. Furthermore, for those pollutants and averaging periods that are modeled to be insignificant and whose impacts are predicted outside the 50-m spaced receptors in the Class II area, a refined receptor grid (50-m spacing) will be used to ensure the maximum impacts are resolved. For those pollutants and averaging periods that are modeled to have significant impacts, 50-m spaced receptors will be used to resolve the highest concentrations as a part of the SIA determination. Cumulative NAAQS and increment modeling will be limited to those receptors for which the SILs are exceeded by modeling the project impacts alone.

2. **DEQ Comment:** The applicant shall specify the geodetic datum used to generate all coordinates contained in the modeling analysis. The current protocol does not reference any coordinates or datum.

***Dominion Response:*** The geodetic datum has been included in the revised protocol.

3. **DEQ Comment:** The protocol should clearly document the source of elevation data used for the AERMOD application, including the resolution and geodetic datum. The elevation data used should be based on the highest resolution available from the United States Geological Survey (USGS).

***Dominion Response:*** The protocol has been revised to include the source of the elevation data used for AERMOD, include the resolution and geodetic datum. The elevation data used will be the highest resolution available (10-m) from the USGS. This resolution will be used when generating the elevation data for both the Class II and Class I receptor grids.

4. **DEQ Comment:** According to the AERMAP User's Guide (USEPA, 2004c), the elevation data array and domain boundary must include all terrain features that exceed a

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10% elevation slope from any given receptor. The final modeling report shall include a description of how this guidance was addressed.

***Dominion Response:*** The domain will be sufficient to ensure that all significant nodes are included such that all terrain features that exceed a 10% elevation slope from any given receptor are considered. The final modeling report will include a description of how this guidance was addressed.

5. **DEQ Comment:** The most recent version of the AERMOD Implementation Guide (March 19, 2009) encourages the use of elevation data from the National Elevation Dataset (NED) developed by the USGS instead of the Digital Elevation Model (DEM) in AERMAP. While AERMAP still supports terrain elevations in the DEM format, problems can exist with the DEM data such as incorrect geo-referencing information for entire DEM files and elevations that reflect the tops of buildings and trees. The use of NED data is expected to prevent these problems. Therefore, DEQ requests the applicant use NED data, where possible, in the modeling analysis.

***Dominion Response:*** NED data will be used for the modeling analysis.

**Section 3.7.1 Class II Area SIL Analysis**

**DEQ Comment:** The AQAG is unclear about the modeling requirements for H<sub>2</sub>SO<sub>4</sub> since it is unaware of a significant impact level (SIL) for this pollutant. Please explain.

***Dominion Response:*** The protocol has been revised to remove the reference of significant impact level modeling for H<sub>2</sub>SO<sub>4</sub>.

**Section 3.7.2 Compliance with Class II Area Ambient Air Quality Standards and PSD Increments**

1. **DEQ Comment:** The protocol indicates that for the cumulative NAAQS analyses all major sources of the applicable pollutant from nearby source inventories obtained from the appropriate state agencies will be included. The cumulative NAAQS analyses should include all nearby sources, regardless whether or not it is a major source, that cause a significant concentration gradient in the vicinity of the proposed facility (see Section 8.2.3 of 40 CFR Part 51, Appendix W (GAQM)).

***Dominion Response:*** The cumulative NAAQS analysis will include all the nearby sources and not just the major sources. The sentence has been revised in the protocol by removing the “major” reference.

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- 2. DEQ Comment:** The analysis of PM<sub>10</sub> emissions with respect to the annual NAAQS of 50µg/m<sup>3</sup> presented in Table 3-14 is no longer required because the standard has been revoked.

*Dominion Response:* The PM<sub>10</sub> annual NAAQS has been removed from Table 3-14 (now 3-17) in the revised protocol.

**Section 3.8.1 Class I Area SIL Analysis**

- 1. DEQ Comment:** The protocol states the proposed SILs in Table 3-16 for the Class I area modeling are based on the proposed values contained in the July 23, 1996 Federal Register. A comparison of the SILs from the July 23, 1996 Federal Register to the SILs presented in Table 3-16 of the protocol identified discrepancies. For example, the 24-hour PM<sub>10</sub> SIL from the Federal Register is 0.3 µg/m<sup>3</sup> versus 0.32 µg/m<sup>3</sup> in Table 3-16. Please provide an explanation for the discrepancies.

*Dominion Response:* The SILs in Table 3-16 (now Table 3-19) have been updated in the revised protocol to correspond to the SILs presented in the July 23, 1996 Federal Register.

- 2. DEQ Comment:** Please provide an explanation for the asterisks contained in the column headings “3-hour”, “24-hour” and “Annual” for Table 3-16.

*Dominion Response:* Table 3-16 (now Table 3-19) has been updated in the revised protocol. The asterisks were not relevant to this analysis and were removed.

**Section 4.2 Pre-construction Monitoring Waiver Request**

- 1. DEQ Comment:** A facility may propose to be exempt from preconstruction monitoring if its source-only modeled impacts are below the significant monitoring concentrations. This analysis is subject to review and approval by the AQAG. Alternatively, if the facility cannot be exempted from the preconstruction monitoring requirement based on modeling, the applicant may propose use of existing monitoring data. It is required that the applicant make the appropriate justification for use of existing data to the AQAG.

The fulfillment of the preconstruction monitoring requirement can be met in the following ways:

Existing ambient data may be used if the AQAG determines that these data are representative and can establish the attainment status of a particular region.

Establishment of a site-specific monitoring network.

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*Dominion Response:* Comment noted. The text of the protocol has been revised in accordance with these concepts.

2. **DEQ Comment:** The need for post-construction monitoring will be addressed as part of DEQ's comprehensive application review and draft permit development. DEQ reserves the right to include this requirement in the PSD permit should it be deemed necessary.

*Dominion Response:* Comment noted.

**Section 4.3.2 Refinement of Emission Data and Permit File Review**

**DEQ Comment:** Please provide additional details on the proposed inventory screening methodology. This should include the origin of the screening technique and how this approach will result in an inventory that encompasses nearby sources that cause a "significant concentration gradient" as described in the GAQM.

*Dominion Response:* The section has been revised with the details on the screening and refinement of the nearby source inventory.

**Section 5.4 Soils and Vegetation Analysis**

**DEQ Comment:** The protocol contains the following statement:

*"These counties were chosen because the project site is within Warren County, and Clarke, Frederick and Shenandoah Counties are either within a 10 km radius of the project site or will be used to represent typical soil type within Shenandoah National Park (Shenandoah County)."*

It is unclear what the intent of "(Shenandoah County)" is at the end of this statement. There is no portion of Shenandoah County that lies within Shenandoah National Park. Therefore, "(Shenandoah County)" should be removed from the end of this statement.

*Dominion Response:* The soil assessment is proposed to include areas within 10 km of the project site as well as areas within Shenandoah National Park. A small portion of Shenandoah County is within 10 km of the project site, although it is not within the park boundaries. The notation "(Shenandoah County)" has been removed from the sentence.

**Section 5.5 PM<sub>2.5</sub> NAAQS Compliance Analysis**

**DEQ Comment:** The protocol states the proposed PM<sub>2.5</sub> SILs for the PSD Class I modeling are based on the proposed Option 3 values contained in the September 21, 2007 Federal

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Register (72 FR 54139-54140). A review of the September 21, 2007 Federal Register indicates the 24-hour and annual PSD Class I modeling SILs should be  $0.07 \mu\text{g}/\text{m}^3$  and  $0.06 \mu\text{g}/\text{m}^3$ , respectively, instead of  $0.7 \mu\text{g}/\text{m}^3$  and  $0.6 \mu\text{g}/\text{m}^3$  as presented.

*Dominion Response:* The PSD Class I SILs have been corrected in the revised protocol.

**Section 5.7 Conversion of NO to NO<sub>2</sub>**

**DEQ Comment:** The annual default value of 0.75 that may be necessary for the applicant to use for the Tier 2 analysis in the multi-tiered approach to estimate maximum annual NO<sub>2</sub> concentrations is located in Section 5.2.4(c) of 40 CFR Part 51, Appendix W (GAQM) and not Section 6.3.2(c) as referenced in the protocol.

*Dominion Response:* The reference to the conversion of NO to NO<sub>2</sub> has been corrected in the revised protocol.

**Section 6.0 Submittal of Analysis Results**

**DEQ Comment:** As stated in the protocol, all input and output files (e.g., AERMOD, BPIP-PRIME, AERMET, AERMAP, PLUVUE, pre-processing and post-processing files), including any 3<sup>rd</sup> party software project files (e.g., BEEST, Lakes, Trinity, utility programs) shall be provided to DEQ in electronic format.

*Dominion Response:* Dominion will provide all input and output files on a DVD as part of the application submittal

**General Comments**

1. **DEQ Comment:** The proposed facility would be a major source of PM<sub>2.5</sub> since it has the potential to emit 100 tons per year or more of this pollutant based on the protocol.

*Dominion Response:* Dominion agrees PM<sub>2.5</sub> is subject to PSD review. The language has been updated in the revised protocol.

2. **DEQ Comment:** There are a number of instances throughout the protocol where NO<sub>x</sub> is referred to as an ambient air quality standard or increment rather than nitrogen dioxide (NO<sub>2</sub>). For example, there is a SIL for NO<sub>2</sub> as opposed to NO<sub>x</sub> which is specified in Table 3-1.

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*Dominion Response:* With regards to regulatory thresholds and standards, the reference to NO<sub>2</sub> as NO<sub>x</sub> has been corrected in the revised protocol. References to emissions remain as NO<sub>x</sub>.

3. **DEQ Comment:** DEQ would prefer that the phrase “nearby source inventory” be used in lieu of “background source inventory” for the title of Section 4.3 and when discussing the cumulative modeling analysis. The use of “nearby source” for such an analysis is consistent with 40 CFR Part 51, Appendix W (GAQM) and this would help minimize confusion with the phrase “background concentration.”

*Dominion Response:* The phrase “background source inventory” has been replaced with “nearby source inventory” in the revised protocol.

4. **DEQ Comment:** The AQAG strongly recommends that the applicant receive concurrence from VRO on its control technology review (e.g., Best Available Control Technology (BACT)) and all modeled scenarios and emission rates prior to submitting the final air quality analysis. Prior approval usually helps minimize delays in the modeling review and the overall project.

*Dominion Response:* The final emission rates determined by the VA DEQ to represent BACT are expected to be equal to or lower than the proposed emission rates. Therefore, modeling conducted with the proposed emission rates will present a conservatively high impact if one or more emission rates are revised downward. Dominion will seek the Valley Regional Office’s concurrence that the proposed emission rates represent BACT.

5. **DEQ Comment:** The final modeling report shall include graphics (e.g., contour maps) that show the extent of the air quality impacts and shall utilize a base map that is readily understandable by the general public. Each map should also clearly identify the proposed plant location relative to these air quality impacts.

*Dominion Response:* The final modeling report will included graphics (e.g., contour maps) that show the extent of the air quality impacts for the worst-case year for each turbine. The figures will utilize a base map that is designed to be readily understandable by the general public. Each map will clearly identify the proposed plant location relative to these air quality impacts.

6. **DEQ Comment:** The final report should include a readable scaled map (i.e., not a copy) of all source locations and buildings and include the property boundary. Any design changes to structures prior to or after issuance of the permit may require additional modeling. DEQ encourages the applicant to also submit a Geographic Information System (GIS) shape file of the property line and structures if available.

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*Dominion Response:* Comment noted.

7. **DEQ Comment:** A copy of **all Class I and Class II modeling correspondence** throughout the duration of this project should be provided to the AQAG, VRO, USEPA Region III and the appropriate Federal Land Manager (FLM) technical contacts listed in the Attachment.

*Dominion Response:* A copy of all Class I and Class II modeling correspondence throughout the duration of this project will be provided to the AQAG, VRO, USEPA Region III and the appropriate Federal Land Manager (FLM) technical contacts listed in the Attachment.