COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Northern Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Dominion Transmission, Inc.
Leesburg Compressor Station
Loudoun County, Virginia
Permit No. NRO71978

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Dominion Transmission, Inc. has applied for a Title V Operating Permit renewal for its natural gas pipeline compressor station in Loudoun County, Virginia. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact: _____ Date: _____
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James B. LaFratta

Regional Director: _____ Date: _____
Thomas A. Faha

FACILITY INFORMATION

Permittee
Dominion Transmission, Inc.
445 West Main Street
Clarksburg, West Virginia 26302-2450

Facility
Leesburg Compressor Station
40620 Consolidated Lane
Leesburg, Virginia 20175

County-Plant Identification Number: 51-107-01016

SOURCE DESCRIPTION

NAICS: 486210 SIC Code: 4922 - Natural Gas Transmission.
The Leesburg Compressor Station is a natural gas transmission facility located in Loudoun County, Virginia. Natural gas is received via pipelines from upstream compression stations, compressed, and returned to pipelines for transmission downstream.

The Leesburg facility utilizes two (2) natural gas-fired stationary reciprocating internal combustion engines (RICE) – each being a spark ignition, two stroke lean burn RICE and rated power output of 3,010 horsepower (HP), to drive natural gas compressors. Each engine is equipped with an oxidation catalyst to control carbon monoxide (CO) emissions. The facility also utilizes one natural gas-fired Solar Taurus 60 model turbine, rated at 8,036 horsepower to compress natural gas. The turbine is equipped with a special low-NO_x burner (SoLoNOx) to control NO_x emissions and a NO_x continuous emissions monitor system (CEMS). Auxiliary equipment at the facility includes one 2.75 MMBtu/hr natural gas-fired boiler used for space heating, and one spark ignition four stroke lean burn 550 HP natural gas-fired emergency engine-generator.

The facility is a Title V major source of nitrogen oxides and carbon monoxide emissions. The source is located in an area which is classified as 'marginal nonattainment' for ozone. The Leesburg Compressor Station is a major source for the nonattainment new source review (NSR) program, and a Prevention of Significant Deterioration (PSD) minor source. The facility is an area source for hazardous air pollutants (HAP).

The combustion turbine at the facility is subject to the New Source Performance Standards (NSPS) Subpart GG – Standards of Performance for Stationary Gas Turbines because the Solar Taurus 60 Model natural gas-fired turbine was constructed in 2004 and has a maximum rated heat input of 58.1 MMBtu/hr (greater than 10 MMBtu/hr).

An initial minor NSR permit was issued to the facility on July 22, 1992, for construction and operation of two IC engines and an emergency auxiliary generator. The July 22, 1992, permit was amended on February 10, 1998, to correct equipment capacity and lower the associated emission rates. The July 22, 1992, permit document (amended February 10, 1998) was

superseded by the permit document dated January 21, 2000. The January 21, 2000, permit document was issued to modify the provisions for compliance testing. The facility is subject to reasonably available control technology (RACT) and was issued a RACT state operating permit (SOP) permit on May 22 2000. The NO_x emission limits and controls established as BACT in the July 22, 1992, permit were proposed and established as RACT for the IC engines and the auxiliary generator. The combustion turbine was originally permitted by a March 26, 2004 permit to modify and operate. The March 26, 2004, permit was amended on November 2, 2004, to incorporate the use of a NOx continuous emissions monitoring system (CEMS) in lieu of parametric monitoring. On August 13, 2009, the DEQ issued an exemption for the 2.9 MMBtu/hr heater. An administrative amendment permit document was issued December 10, 2009, that combined and superseded permits dated January 21, 2000 and November 2, 2004.

The facility currently operates under the minor new source review (NSR) permit issued on December 10, 2009, and amended on January 28, 2015. The January 28, 2015, amendment permitted the facility to operate the combustion turbine without the SoLoNOx control when the inlet temperature to the turbine was less than zero degrees Fahrenheit.

The facility was issued a Title V permit to operate on May 5, 2010, which expires on May 4, 2015. The Department of Environmental Quality (DEQ) received a Title V renewal application on August 29, 2014. Upon request by the DEQ, updates were submitted on February 6, February 11, 2015 and March 3, 2015. The facility currently operates under the Title V permit issued May 5, 2010.

Significant changes since the issuance of the Title V permit issued May 5, 2010, include the changes to federal regulations particularly the inclusion of 40 CFR 63 Subpart ZZZZ requirements.

COMPLIANCE STATUS

The facility normally undergoes a full compliance evaluation (FCE) biennially. The most recent FCE, including a site visit, was conducted on August 22, 2013. In addition, all reports, notifications, and other data as required by permit conditions or regulations, which are submitted to the DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units and air pollution control devices for the Leesburg Station are identified in Table 1 below.

TABLE 1. Summary of Emission Units and Control Devices at the Leesburg Station

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
TUR01	S05	Solar Taurus 60 Model Natural Gas-fired Turbine (Constructed 2004)	8036 HP (Power Output) 58.1 MMBtu/Hr (Heat Input)	Solar SoloNOx Burner Combustion Control (constructed 2004)	C03	NOx	1/28/15
EN01	S01	Dresser Rand Model TLAD8 Natural Gas-fired Two Stroke Lean Burn SI IC Compressor Engine (Constructed 1992)	3,010 HP (Power Output) 24.08 MMBtu/Hr (Heat Input)	Johnson Matthey LHC Catalyst (constructed 1993)	C01	CO	1/28/15
EN02	S02	Dresser Rand Model TLAD8 Natural Gas-fired Two Stroke Lean Burn SI IC Compressor Engine (Constructed 1992)	3,010 HP (Power Output) 24.08 MMBtu/Hr (Heat Input)	Johnson Matthey LHC Catalyst (constructed 1993)	C02	CO	1/28/15
AUX01	SO3	Caterpillar Model 3508 Natural Gas-fired Four Stroke Lean Burn SI IC Auxiliary Engine Generator (Constructed 1992)	550 HP (Power Output) 4.4MMBtu/Hr (Heat Input)	---	---	---	1/28/15
B01	S04	Ajax Model WGFD-2750 Natural Gas-fired Boiler (Constructed 1992)	2.75 MMBtu/hr (Heat Input)	---	---	---	1/28/15

EMISSIONS INVENTORY

The facility emission data below is actual emission data based on the 2013 annual emission update; the most current data validated by DEQ, and is summarized below in the Criteria and Hazardous Air Pollutant tables.

TABLE 2.
2013 Actual Emissions of Criteria Pollutants for the Leesburg Compressor Station

	Criteria Pollutant Emission in Tons/Year				
Emission Unit	**VOC**	**CO**	**SO_2**	**PM-10**	**NO_x**
TUR01	0.661	2.215	0.013	1.388	8.315
EN01	0.721	2.228	0.002	0.323	5.061
EN02	0.588	2.154	0.002	0.353	12.036
AUX01	0.009	0.032	0.0	0.001	0.105
B01	0.010	0.155	0.001	0.014	0.185
FUG[1]	7.900				
Total	9.889	6.784	0.018	2.079	25.702

[1] Fugitive emissions include those from blowdowns, valves, flanges, fittings, etc. The fugitive emissions are included in the calculation for emission inventory submittal and emission fees purposes and are not subject to any other applicable requirements.

TABLE 3.

2013 Actual Facility Emissions of Hazardous Air Pollutants for the Leesburg Compressor Station

Pollutant	**Hazardous Air Pollutant Emission in Tons/Year**
Formaldehyde	2.089

EMISSION UNIT APPLICABLE REQUIREMENTS –

- **Combustion Turbine (TUR01)**
- **Compressor Engines (EN01 and EN02)**
- **Auxiliary Engine-generator (AUX01)**
- **Boiler (B01)**

Combustion Turbine (TUR01)

Limitations

The basis for the following requirements is the minor NSR Permit issued December 10, 2009, as amended January 28, 2015, which incorporates applicable provisions of NSPS Subpart GG.

Title V
Condition #

1. NOx emissions shall be controlled by Solar's SoLoNOx burner, a dry-low NOx burner.

2. The approved fuel for the turbine is pipeline natural gas as defined in 40 CFR §72.2. This requirement meets or exceeds the NSPS Subpart GG natural gas requirement.

3. Limits annual fuel consumption for the turbine.

4. Limits annual emissions of NOx, CO, VOC, PM, PM-10, and formaldehyde. Limits concentration of NO_x and hourly emissions of NOx as NO_2. An hourly NO_x emission limit when temperatures are below 0°F was included as part of the January 28, 2015 amendment. This was due to a design issue in which the SoLoNOx control is designed to shut off when the turbine inlet temperature is below zero.

5. Visible emissions limit of five percent opacity for the turbine.

6. Requires the turbine to be operated in compliance with 40 CFR 60, Subpart GG.

Monitoring

Title V
Condition #

7. A continuous emissions monitoring system (CEMS) replaced the parametric monitoring initially used to monitor NO_x emissions. The NOx CEMS data shall be used to determine compliance with the NO_x limits in Condition 4. Malfunction of the CEMS may be grounds for DEQ to request stack testing to demonstrate compliance.

8. A CEMS quality control program, which meets the requirements of 40 CFR §60.13 and Appendix B and F, as applicable, is required.

9. The sulfur content monitoring shall be in accordance with the most recent NSPS Subpart GG requirements. This was changed to just require compliance with monitoring requirements of 40 CFR §60.334(h).

10. This condition was included as a way of determining compliance with proper operation of the NO_x controls. The SoLoNO$_x$ control is designed to shut off when the inlet temperature to the turbine is less than 0°F at which time the 31.6 lbs NO_x/hr limit takes effect. The temperature monitoring can be used as evidence that it was permissible for the SoLoNO$_x$ controls to shut off and for the NO_x emissions to exceed 6.5 lbs./hr.

11. Engine speed is recorded to determine the number of startup/shutdown cycles and the duration of such cycles for the combustion turbine. This condition requires reporting of exceedances of emission limits, in accordance with Condition 14 when start up cycle time lengths exceed 9 minutes, shutdown cycle time lengths exceed 5 minutes and there are

greater than 365 startup/shutdown cycles performed in a consecutive 12 month period. Compliance with the visible emission limits in the permit is expected from the natural gas fired combustion turbine as long as the unit is fueled with pipeline quality natural gas and operated and maintained in accordance with manufacturer recommendations, at a minimum, by trained operators. Condition 2 establishes that the combustion turbine be fueled only with pipeline quality natural gas. Documentation provides assurance that the combustion turbine only operates on pipeline quality natural gas. Condition 52 establishes equipment inspection, maintenance, and operator training as a federally enforceable requirement in lieu of periodic monitoring for opacity. This inspection, maintenance, and operator training program along with the required documentation provides assurance of continued proper operation of the combustion turbine.

Recordkeeping

Title V
Condition #

12. The permit includes provisions for maintaining records of all required emissions data and operating parameters necessary to demonstrate compliance. These records include: the consumption of natural gas by the turbine, scheduled and unscheduled maintenance on the turbine, NOx CEMS data on the turbine, the time lengths for startup and shutdown, and emissions data to determine compliance with annual emission limits. The permittee must maintain written operating procedures for the engines and the related air pollution control equipment and must train all operators on the proper operation of the equipment. The proper operation and maintenance of the turbine functions as air pollution control for all criteria pollutants.

Testing

Title V
Condition #

13. The turbine employs a NOx CEMS, which continuously measures NO_x emissions when the turbine is operating. The facility is required to implement a CEMS quality assurance and quality control program to ensure accuracy and reliability of the data. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

Title V
Condition #

14. Excess emissions reporting requirement. The permit requires the permittee to report excess emissions. The permit also establishes time schedules for submitting copies of test reports and quarterly CEMS reports to the DEQ. The general reporting requirements enumerated in the General Requirements section of the permit also apply. Documents must be certified by a responsible official.

Streamlined Requirements

NSPS Subpart GG: The combustion turbine has the following applicable requirements established in NSPS Subpart GG, which is included in 9 VAC 5-50-410 by reference:

a. 60.332(a)(2): Standard for Nitrogen Oxides

where:

$$STD = 0.0150 \frac{(14.4)}{Y} + F$$

STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).
Y = Manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.
F = NO_x emission allowance for fuel-bound nitrogen as defined in ∋ 60.332 (a)(3)

The allowable NO_x emission limit for the Solar turbine with inlet temperature at and above 0°F (25 ppmvd @ 15% O_2) is more stringent than the limits established by NSPS Subpart GG (150 ppmvd @ 15% O_2). The emission limit for the Solar turbine with the the inlet temperature below 0°F is equal to the NSPS limit for NO_x (150 ppmvd @ 15% O_2).

b. 60.333: Standard for sulfur dioxide:

SO_2 # 0.015 percent by volume, dry basis, at 15% O_2, OR, fuel sulfur content # 0.8 percent by weight.

The fuel sulfur content requirement is based on the standard contained in NSPS Subpart GG. The facility may demonstrate compliance with the standard for sulfur dioxide by keeping documentation that shows that the natural gas used to fuel the turbine meets the definition of pipeline quality natural gas.

Compressor Engines (EN01 and EN02)

Limitations

The basis for the following requirements are the minor NSR Permit issued December 10, 2009, as amended January 28, 2015, and 40 CFR 63, Subpart ZZZZ.

Title V
Condition #

15. Requires that CO be controlled by an oxidation catalyst on each engine.

16. The approved fuel for the compressor engines is natural gas.

17. Combined engine fuel consumption is limited.

18. Emissions of NO_x as NO_2, CO, VOC, and formaldehyde are limited. The emissions controls and limitation of the State Air Pollution Control Board permit to construct that was issued on July 22, 1992 were determined to represent the required best available control technology, and therefore, for emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOC) are not less stringent than RACT. The NO_x emissions from the Dresser Rand compressor engines shall be controlled by lean-burn design, and averaged over a 3-hour period the emissions of NO_x (as NO_2) shall not exceed 1.5 g/bhp-hr and the emissions of VOC shall not exceed 0.46 g/bhp-hr. Included in this condition is a requirement that the facility calculate the rolling 12 month emissions based on actual engine operating hours.

19. Visible emissions are limited to five percent opacity for the engines.

20. 40 CFR 63 Subpart ZZZZ specific maintenance requirements for stationary non-emergency non-black start two stroke lean burn spark ignition internal combustion engines located at an area source of HAPs.

21. 40 CFR 63 Subpart ZZZZ reference to general requirements.

22. 40 CFR 63 Subpart ZZZZ operation and maintenance requirements.

23. 40 CFR 63 Subpart ZZZZ idle and start-up time limitation.

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements have been modified to meet Part 70 requirements, with additional monitoring and recordkeeping provisions added, as needed, to establish sufficient periodic monitoring to document compliance with the applicable requirements for the engines.

Title V
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24. The permit requires a method of monitoring the hours of operation. This condition was added to this permit renewal since emissions are calculated from hours and maintenance is requirements are performed based on hour of operation.

25. The permit establishes periodic monitoring requirements for the oxidation catalyst by requiring the permittee to monitor the exhaust gas temperature at the inlet to the oxidation catalyst and pressure drop across the catalyst. These parameters, in conjunction with the periodic testing to evaluate CO emissions, will provide a reasonable assurance that the catalyst remains effective and that the CO emissions are in compliance. The permit specifies the indicator ranges and requires the report establishing the ranges to remain on the premises. It also lists actions to be taken if the temperature or pressure drop is outside of the established ranges. The word 'change' following temperature was deleted as suggested by a comment received by EPA during the comment period.

26. The permit requires semi-annual testing for NO_x, CO and VOCs on the exhaust from each engine. This testing is conducted to provide a reasonable assurance of compliance with the short term (lb/hr) emission limits. Testing involves the use of portable analyzers to measure NO_x, CO, and diluent O_2 concentrations. The procedures shall be approved by the DEQ. VOC emissions will be measured by collecting a sample of exhaust gas and measuring for total hydrocarbons, methane, and ethane. The methane and ethane emissions will be subtracted from the total hydrocarbon emissions to obtain non-methane, non-ethane hydrocarbon emissions.

    The periodic testing serves several purposes. First, the testing will be used to demonstrate that proper operation and maintenance of the engines and control system continues to achieve compliance with the established permit limits for NO_x, CO, and VOC. Additionally, the periodic testing for CO and VOC will provide a measure of the engine operation and combustion efficiency. Compliance with the formaldehyde emission limits will be inferred by demonstrating compliance with criteria pollutant emission limits (namely, CO and VOCs). Second, the measurements will be used to confirm the emission factors which will be employed to demonstrate compliance with annual permit limits. Third, the CO testing will provide an indication of the continued effectiveness of the oxidation catalyst in controlling CO emissions.

    If the periodic testing indicates an exceedance of an emission limit, the permittee is required to take action to correct any equipment which is not operating properly. If corrective action does not eliminate the emissions excursion, the permittee is required to conduct an EPA reference method test in accordance with test methods identified in the permit, or other procedures approved by the DEQ. The reference method testing will be used to determine the compliance status of the engine(s). It is worth noting that an excursion above an emission standard which is measured using a portable gas analyzer may be considered credible evidence of a violation, however, it does not necessarily establish or correspond to a violation of the permit.

27. The permit includes provisions for maintaining records of all required emission data and operating parameters necessary to demonstrate compliance. These records include: the

consumption of natural gas by the compressor engines, scheduled and unscheduled maintenance on the engines, periodic NO_x, CO, and VOC measurements on each engine, and temperature change and pressure drop readings across the oxidation catalyst for each engine. Additionally, the permittee must maintain written operating procedures for the engines and the related air pollution control equipment and must train all operators on the proper operation of the equipment. The proper operation and maintenance of the compressor engines functions as air pollution control for all criteria pollutants.

Pollutant-specific emission factors will be used in conjunction with operational data to calculate annual emissions on a monthly basis for each engine. The emission factors and equations shall be approved by the DEQ. The use of these emission factors provides a reasonable assurance of compliance with emission limitations, and underscores that the operational and fuel restrictions are the controlling parameters limiting emissions from the engines. The periodic measurement of NO_x, CO, and VOC emissions will serve as a check on the continued representativeness of the manufacturer supplied emission factors.

Compliance with the visible emission limits in the permit is expected from the natural gas fired compressor engines as long as the units are fueled with pipeline quality natural gas and operated and maintained in accordance with manufacturer recommendations, at a minimum, by trained operators. Condition 16 establishes that the compressor engines be fueled only with pipeline quality natural gas. Documentation provides assurance that the compressor engines only operate on pipeline quality natural gas. Condition 52 establishes equipment inspection, maintenance, and operator training as a federally enforceable requirement in lieu of periodic monitoring for opacity. This inspection, maintenance, and operator training program along with the required documentation provides assurance of continued proper operation of the engines.

Testing

Title V
Condition #

28. The permit requires the permittee to conduct an EPA reference method test program once during the five-year permit term. Testing shall be conducted to evaluate the compliance of the engines with respect to the applicable NO_x, CO, and VOC emission standards. Initial performance testing in accordance with 40 CFR 63 ZZZZ was completed on February 4, 2015. The test protocol included testing for CO and formaldehyde.

29. A table of test methods has been included in the permit to identify the current reference method test procedures for the subject pollutants. EPA retains the authority to approve alternative test methods. In accordance with 40 CFR 60.4244 of Subpart JJJJ, Table 2 – Requirements for Performance Tests approves the use of Method 320 as an acceptable test method for volatile organic compounds (VOCs). For this reason Method 320 has been included in the table of approved test methods in Condition 29. Note: This facility is not subject to the requirements of 40 CFR 60 Subpart JJJJ since the engines EN01 and EN02 were manufactured prior to the applicability date in 40 CFR 60 Subpart JJJJ. The use of Method 320 was requested by the facility and approved for use for spark ignition internal combustion engines in 40 CFR Subpart JJJJ.

Reporting

Title V
Condition #

30. through 33. – the permittee is required to report excursions outside of the established indicator ranges for the oxidation catalyst monitoring, and excursions above emission limits revealed during the periodic emissions monitoring. The permit also establishes time schedules for submitting copies of test reports to the DEQ. The general reporting requirements enumerated in the General Requirements section of the permit also apply. Documents must be certified by a responsible official.

Auxiliary Engine-Generator (AUX01)

Limitations

The basis for the following requirements are the minor NSR Permit issued December 10, 2009, as amended January 28, 2015, and 40 CFR 63, Subpart ZZZZ.

Title V
Condition #

34. The auxiliary generator (AUX01) is an emergency use only engine generator. Emergency engine generator AUX01 may only be operated for the purposes listed in this condition. EPA comments indicate that the term 'operational training' appears to be non- emergency use. Granting hours of operation for certain non-emergency uses has be challenged and may not be allowed. Since 'operational training' is not specifically mentioned in 40 CFR §63.6640, it has been removed from the permit. It is possible that operational training can be conducted to coincide with maintenance and testing operation.

35. The approved fuel for auxiliary generator is natural gas.

36. Limit on natural gas throughput for the auxiliary generator. The twelve-month cumulative fuel throughput limitation is based on the maximum hourly fuel consumption rate and the allowable annual operating hours.

37. Limit on annual operating hours for the auxiliary generator.

38. NO_x and CO emission limits established for the auxiliary generator. The short term NO_x and CO emission limits are based on manufacturer emissions data. The annual emission limits are based on the maximum hourly emission rates and allowable operating hours. The emissions controls and limitations of the State Air Pollution Control Board permit to construct that was issued on July 22, 1992 were determined to represent the required best available control technology, and therefore, for emissions of nitrogen oxides (NO_x) are no less

stringent than RACT. The NO_x emissions from AUX01 averaged over a three (3) hour period shall not exceed 2.0 g/bhp-hr.

39. Visible emissions limit of five percent opacity established for the boiler and auxiliary generator.

40. 40 CFR 63 Subpart ZZZZ maintenance requirements for stationary emergency non-black start four stroke lean burn spark ignition internal combustion engines located at an area source of HAPs.

41. 40 CFR 63 Subpart ZZZZ operation and maintenance requirements.

42. 40 CFR 63 Subpart ZZZZ reference to general requirements.

43. 40 CFR 63 Subpart ZZZZ requirement for a non-resettable hour meter.

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements of the NSR permit have been modified to meet Part 70 requirements.

Title V
Condition #

44. The permit includes requirements for maintaining records of all emission data and operating parameters. These records include the consumption of natural gas by the auxiliary generator, and the annual operating hours of the auxiliary generator. Additionally, the permit requires that an inspection and maintenance schedule be established for the auxiliary generator to assure that the unit is operated in accordance with good air pollution control practices.

As long as the natural gas throughput limit and operating hours limit are not violated, there is very little chance that criteria pollutant annual emission limits will be violated. Therefore records of the natural gas throughput and operating hours for the auxiliary generator can be used to demonstrate compliance with NO_x and CO, satisfying the periodic monitoring requirements. Compliance with short term emission limits can be demonstrated through operation and maintenance and training as well as this being a relatively small emission unit

Emissions from the operation of the auxiliary generator shall be calculated on a monthly basis to demonstrate compliance with annual limits. Annual emissions shall be calculated monthly as the sum of each consecutive twelve-month period using the actual operating hours or fuel throughput and DEQ approved pollutant-specific emission factors and equations.

There is no monitoring for the visible emissions limitation. Compliance with the visible emission limits in the permit is expected from the natural gas fired engine generator as long as the unit is operated on pipeline quality natural gas in accordance with Condition 2 and maintained and operated properly in accordance with Condition 52. Condition 52 establishes equipment

inspection, maintenance, and operator training as a federally enforceable requirement in lieu of periodic monitoring for opacity. This inspection and maintenance program along with the required documentation provides assurance of continued proper operation of the engines.

Testing

Title V
Condition #

45. A table of test methods has been included in the permit to identify the current reference method test procedures for the subject pollutants. EPA retains the authority to approve alternative test methods. The permit does not require source emission tests. A table of test methods has been included in the permit if testing is performed. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.
(9 VAC 5-80-110 and Title V permit)

Reporting

No specific reporting requirements have been included in the permit.

Boiler (B01)

Limitations

Title V
Condition #

46. The approved fuel for the boiler is natural gas.

47. Limit on natural gas throughput for the boiler. The twelve-month cumulative fuel throughput limitation is based on the maximum hourly fuel consumption rate and the annual operating hours.

48. NO_x emission limits established for the boiler. This is a BACT requirement. The short term (e.g. hourly) NO_x emission limit for the boiler is based on manufacturer emissions data. The annual emission limit is based on the maximum hourly emission rate and 8760 operating hours per year.

49. Visible emissions limit of five percent opacity established for the boiler. This is a BACT requirement. The boiler burns natural gas. As long as the boiler is properly maintained and operated, there is very little likelihood that the opacity standards will be violated. Therefore, the permit conditions requiring proper operation and maintenance of the boiler, with associated training and recordkeeping, establish a federally enforceable maintenance program which provides a reasonable assurance of compliance with the opacity standards.

50. The permit includes requirements for maintaining records of all emission data and operating parameters. These records include the consumption of natural gas by the boiler. Additionally, the permit requires that an inspection and maintenance schedule be established for the boiler to assure that the unit is operated in accordance with good air pollution control practices.

Recordkeeping demonstrating compliance with the natural gas throughput limits for the boiler shall be used to demonstrate compliance with NO_x annual limits and to satisfy the periodic monitoring requirements. Recordkeeping of scheduled/unscheduled maintenance and operator training shall demonstrate compliance with the short term NO_x limit.

Compliance with the visible emission limits in the permit is expected from the natural gas fired engine generator as long as the unit is operated on pipeline quality natural gas in accordance with Condition 46 and maintained and operated properly in accordance with Condition 52. Condition 52 establishes equipment inspection, maintenance, and operator training as a federally enforceable requirement in lieu of periodic monitoring for opacity. This inspection and maintenance program along with the required documentation provides assurance of continued proper operation of the engines.

Testing

51. The permit does not require source emission tests. A table of test methods has been included in the permit if testing is performed. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.
(9 VAC 5-80-110 and Title V permit)

FACILITY WIDE CONDITIONS

Title V
Condition#

52. Compliance with the emission limits established for NO_x, CO, VOC, and formaldehyde is achieved by proper operation and maintenance of the engines, and by abiding by the fuel throughput restrictions established in the permit. Additionally, CO is controlled by oxidation catalyst for each engine. The permit requires the permittee to develop an inspection and maintenance schedule for the engines and control systems and maintain records of all scheduled and non-scheduled maintenance. The permit also requires written operating instructions for all equipment, that all operators are trained on the proper operation of the process and air pollution control equipment, and that records of the training be maintained.

INSIGNIFICANT EMISSION UNITS

Title V
Condition #

53. Table of insignificant units/Permit Shield

Title V
Condition#

54. This condition explains that compliance with the permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in the permit and specifically lists certain inapplicable requirements.

GENERAL CONDITIONS

Title V
Condition #

55. **General Condition – Federal Enforceability** – The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upset conditions, within one business day.

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

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

    This general condition cites the sections that follow:
    9 VAC 5-80-80. Application
    9 VAC 5-80-140. Permit Shield
    9 VAC 5-80-150. Action on Permit Applications

60. **General Condition – Failure/Malfunction Reporting –** Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections.

A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

This general condition cites the sections that follow:

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

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

64. **General Condition – Permit Modification** – This general condition cites the sections that follow:

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

75. **General Condition** – **Malfunction as an Affirmative Defense** – The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition 75 and General Condition 60. For further explanation see the comments on general condition 60.

This general condition cites the sections that follow:
9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction
9 VAC 5-80-110. Permit Content

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

This general condition contains a citation from the Code of Federal Regulations that follow:
40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:
9 VAC 5-60-70. Designated Emissions Standards
9 VAC 5-80-110. Permit Content

RACT Requirements

The requirement for NO_x and VOC RACT controls is established in 9 VAC 5 Chapter 40, Article 51 of the state regulations. The state RACT regulations were promulgated in response to requirements of the federal Clean Air Act (Section 182) targeted at reducing emissions of nitrogen oxides (NO_X) and volatile organic compounds (VOC) which contribute to the formation of tropospheric (lower atmosphere) ozone.

The Leesburg Station is a major source of NO_x emissions located in the Northern Virginia Ozone Nonattainment Area and is required, at a minimum, to institute Reasonably Available Control Technology (RACT) for the control of NO_x. The source is also required to institute RACT for control of VOC emissions as the facility had an uncontrolled emission rate of VOC greater than 25 tons per year, which was the RACT threshold for areas classified as 'serious' for ozone non-attainment.

The State Operating Permit issued June 2, 2000, implementing NO_x and VOC RACT provisions for the Leesburg Station, establishes as RACT the same emission controls and limitations as contained in the State Air Pollution Control Board permit that was issued on July 22, 1992, and superseded with the January 21, 2000, and the December 10, 2009, permit amendments. These controls and limitations were determined to represent the required best available control technology in the initial permit review, and therefore, for emissions of NO_X and VOC are no less stringent than RACT. The NO_x RACT emission level from each of the two compressor engines is 1.5 grams per brake horsepower-hour (g/bhp-hr). This rate equates to the 10 lbs/hr established in the initial permit for the facility. The VOC RACT emission level from each of the two compressor engines is 0.46 g/bhp-hr, which equates to the 3.0 lbs/hr limit established in the initial permit. These emission rates, in grams-per-brake-horsepower-hr, represent the manufacturer-guaranteed emission rates while each engine operates at design capacity. Design capacity is defined to mean operation at 95 percent or greater of rated horsepower.

INAPPLICABLE REQUIREMENTS

It was determined that 40 CFR 63 Subpart ZZZZ was applicable to the engine compressors (EN01 and EN02) and the emergency engine generator (AUX01). The reason for inapplicability, 'Stationary RICE subject to limited requirements do not have to meet the requirements of Subpart ZZZZ…', cited in the previous permit applies to such RICEs located at a major source of HAPs. This facility is not considered to be major source of HAPs (i.e. it has a potential to emit less than 10 tons per year of any single HAP and less than 25 tons per year of combined HAPs) and for this reason 40 CFR 63 Subpart ZZZZ is applicable.

The following requirements have been identified as inapplicable:

<u>40 CFR Part 64 - Compliance Assurance Monitoring: The Compliance Assurance Monitoring</u> (CAM) rule applies to pollutant-specific emission units with pre-control device emissions of

regulated pollutants exceeding major source thresholds. The units must have control devices in place and applicable requirements for the subject pollutant. The rule requires sources to monitor the operation and maintenance of the control devices to ensure compliance with applicable requirements. The Leesburg Station does not have any emission units which emit pre-control device emissions above the major source thresholds. The pre-control device CO emissions on one (1) of the compressor engines was calculated to be 75.5 tons per year.

40 CFR Part 63, Subpart B - Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections, Sections 112(g) and 112(j): This subpart establishes the requirements for determining case-by-case maximum achievable control technology standards (MACT) for major sources of hazardous air pollutants which include one or more stationary sources included in a source category or subcategory for which the EPA Administrator has failed to promulgate an emission standard. The Leesburg Station is not a major source of hazardous air pollutants.

40 CFR Part 82 – Protection of Stratospheric Ozone: The Leesburg Station does not use any ozone depleting substances regulated by the subject rule.

40 CFR Part 68 – Chemical Accident Prevention Provisions: The Leesburg Station does not exceed the applicability thresholds of regulated substances needed to trigger risk management plant applicability.

40 CFR Part 60 Subpart KKKK: the combustion turbine (TUR01) was constructed later than October 3, 1977 and before the applicability date for 40 CFR 60, Subpart KKKK, February 18, 2005.

COMPLIANCE PLAN

As part of its Title V Permit Renewal Application, Dominion Transmission, Inc. has certified that the facility is currently in compliance with all applicable requirements. No compliance plan was included in the application or the permit.

INSIGNIFICANT EMISSION UNITS – are listed for informational purposes to show that these units were given consideration in the permitting process but were found to be insignificant contributors to air pollution. The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation[1]	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
HW01	AO Smith Model FSGL40216 hot water heater	9 VAC 5-80-720 C	---	0.04 MMBtu/hr

Emission Unit No.	Emission Unit Description	Citation[1]	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
PW01	Zep Super Brute Model 906601 parts washer	9 VAC 5-80-720 A and B	VOC	---
PW02	Zep Super Brute Model 906601 parts washer	9 VAC 5-80-720 A and B	VOC	---
TK01	Ethylene glycol storage tank	9 VAC 5-80-720 A and B	VOC	5,000 gallons
TK02	Floor drain waste storage tank	9 VAC 5-80-720 A and B	VOC	2,000 gallons
TK03	Reclaim oil storage tank	9 VAC 5-80-720 A and B	VOC	2,000 gallons
TK04	Waste oil storage tank	9 VAC 5-80-720 A and B	VOC	2,000 gallons
TK05	Lube oil storage tank	9 VAC 5-80-720 A and B	VOC	8,000 gallons
TK06	Pipeline fluid storage tank	9 VAC 5-80-720 A and B	VOC	2,000 gallons

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

CONFIDENTIAL INFORMATION

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

PUBLIC PARTICIPATION

The proposed permit was placed on public notice in the "Loudoun Times Mirror" from May 7, 2015 to June 8, 2015. EPA was sent a copy of the draft permit and statement of basis and notified of the public notice on April 29, 2015. All persons on the Title V mailing list were notified of the public comment period by electronic mail or by letter prior to the publication of the notice in the newspaper. The affected States of West Virginia, Maryland, and Pennsylvania as well as Washington, D.C. were sent notice via electronic mail on April 29, 2015. The EPA provided comments on June 12, 2015 within the EPA's 45 day review period. No other comments were received during the comment period.