Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 FAX (804) 698-4178
www.deq.virginia.gov

Travis A. Voyles
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

Thomas A. Faha
Regional Director

November 17, 2022

Dr. Ben Stewart
Senior Vice President of Operations
NTT Global Data Centers Americas, Inc.
PO Box 348060
Sacramento, CA 95834

Location: Loudoun County
Registration No.: 74120

Dear Dr. Stewart:

Attached is a permit to construct and operate a project at a data center in accordance with the provisions of the Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This permit document supersedes your permit document dated February 19, 2021.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on November 10, 2022.

This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and/or civil charges. Please read all permit conditions carefully.

This permit approval to modify and operate shall not relieve NTT Global Data Centers Americas, Inc. of the responsibility to comply with all other local, state, and federal permit regulations.

The proposed engine generator-sets (gen-sets) may be subject to 40 CFR 63, Maximum Achievable Control Technology, (MACT) Subpart ZZZZ and 40 CFR 60, New Source Performance Standard (NSPS), Subpart IIII. Virginia has not accepted delegation of either rule.

In summary, the units may be required to comply with certain federal emission standards and operating limitations. The Department of Environmental Quality (DEQ) advises you to review the referenced MACT and NSPS to ensure compliance with applicable emission and operational limitations. As the owner/operator you may be also responsible for any monitoring, notification, reporting and recordkeeping requirements of the MACT and NSPS. Notifications shall only be sent to EPA, Region III.

To review any federal rules referenced in the above paragraph or in the attached permit, the US Government Publishing Office maintains the text of these rules at www.ecfr.gov, Title 40, Part 60 and 63.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. Please consult the relevant regulations for additional requirements for such requests.

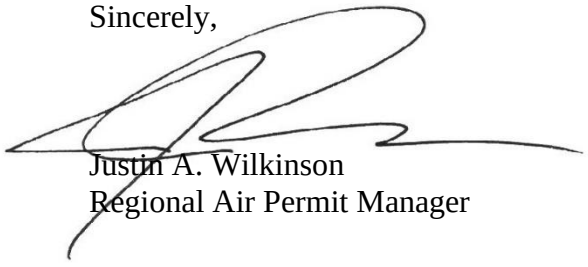
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

Michael S. Rolband Director
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact Ms. Katie DeVoss at **katie.devoss@deq.virginia.gov**.

Sincerely,



Justin A. Wilkinson
Regional Air Permit Manager

JAW/KD/74120 mNSR (2022-11-17)

Attachment: Permit

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

Thomas A. Faha
Regional Director

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit document supersedes your permit document dated February 19, 2021.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

NTT Global Data Centers Americas, Inc.
PO Box 348060
Sacramento, CA 95834
Registration No.: 74120

is authorized to construct and operate,

emergency diesel engine generator sets (gen-sets)

located at:

44245 Gigabit Plaza, Ashburn, VA 20147 (VA3)
44760 Gigabit Plaza, Ashburn, VA 20147 (VA4)
44761 Gigabit Plaza, Ashburn, VA 20147 (VA5)
44371 Gigabit Plaza, Ashburn, VA 20147 (VA6)
(Loudoun County)

in accordance with the Conditions of this permit.

approved on November 17, 2022.

Justin A. Wilkinson
Regional Air Permit Manager

Permit consists of 19 pages.
Permit Conditions 1 to 34.
Attachment A - Source Testing Report Format (1 page).

INTRODUCTION

This permit approval is based on the permit application dated April 1, 2022, October 21, 2020, October 18, 2019, July 2, 2018, February 20, 2018, and March 23, 2017 and supplemental information dated April 24, 2017, April 25, 2017, April 28, 2017, May 5, 2017, May 8, 2017, May 9, 2017, July 19, 2018, January 11, 2019, March 24, 2020, December 21, 2020, and November 17, 2022. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9VAC5-10-10 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9VAC5-170-60 of the State Air Pollution Control Board Regulations. Specifications included in the above tables are for informational purposes only and do not form enforceable terms or conditions of the permit.

Equipment List - Equipment at this facility covered by this permit consists of:

Equipment to be constructed:

Engine Group	Reference No(s).	Equipment Description	Standby Rated Capacity	Delegated Federal Requirements	Original Permit Date
VA6	Gen6101-01, -02, -03, -04; Gen6102-01, -02, -03, -04; Gen6201-01, -02, -03, -04; Gen6202-01, -02, -03, -04	Sixteen (16) Cummins Engine Model QSK95-G12 emergency diesel engine gen-sets	4,701 bhp and 3,250 ekW (each unit)	None	November 17, 2022
Gen6H	Gen6H	One (1) Cummins Engine Model QSK50-G5 emergency diesel engine gen-set	2,220 bhp and 1,500 ekW	None	November 17, 2022

Equipment permitted prior to the date of this permit:					
Engine Group	**Reference No(s).**	**Equipment Description**	**Standby Rated Capacity**	**Delegated Federal Requirements**	**Original Permit Date**
VA3	301A, 301B, 302A, 302B, 303A, 303B, 304A, 304B, 305A, 305B, 306A, 306B, 307A, 307B, 308A, 308B, 309A, 309B, 310A, 301B, 311A, 3HA, 3HB, 3ZA, 3ZB	Twenty-five (25) Kohler Engine Model KD45V20 emergency diesel engine gen-sets	2,353 bhp and 1,600 ekW – de-rated to 2,218 bhp and 1,500 ekW (each unit)	None	June 1, 2017
VA4	Gen4101-01, -02, -03, -04, -Z; Gen4102-01, -02, -03, -04, -Z; Gen4201-01, -02, -03, -04, -Z; Gen4202-01, -02, -03, -04, -Z	Twenty (20) Kohler Engine Model KD83V16 emergency diesel engine gen-sets	4,680 bhp 3,250 ekW (each unit)	None	February 12, 2019
Gen4H	Gen4H	One (1) Kohler Engine Model KD45V20 emergency diesel engine gen-set	2,353 bhp and 1,600 ekW – de-rated to 2,218 bhp and 1,500 ekW (each unit)	None	February 12, 2019
VA5	Gen5101-01, -02, -03, -04, -Z; Gen5102-01, -02, -03, -04, -Z; Gen5201-01, -02, -03, -04, -Z; Gen5202-01, -02, -03, -04, -Z	Twenty (20) Kohler Engine Model KD83V16 emergency diesel engine gen-sets	4,680 bhp 3,250 ekW (each unit)	None	February 12, 2019
Gen5H	Gen5H	One (1) Kohler Engine Model KD45V20 emergency diesel engine gen-set	2,353 bhp and 1,600 ekW – de-rated to 2,218 bhp and 1,500 ekW (each unit)	None	February 12, 2019

Specifications included in the above tables are for informational purposes only and do not form enforceable terms or conditions of the permit.

PROCESS REQUIREMENTS

1. **Emission Controls** – Emissions from the emergency diesel engine gen-sets shall be controlled by the following:

   a. Nitrogen oxides (NO_X) emissions from the emergency diesel engine gen-sets (Engine Groups VA3, VA4, Gen4H, VA5, and Gen5H) shall be controlled by electronic fuel injection, turbocharged engine, and aftercoolers. The permittee shall maintain documentation that demonstrates the control device has been installed on each emergency diesel engine gen-set.

   b. Nitrogen oxides (NO_X) emissions from each emergency diesel engine gen-set (Engine Groups VA6 and Gen6H) shall be controlled by engine design.

   c. Visible emissions, particulate matter ($PM_{10}/PM_{2.5}$) emissions, carbon monoxide (CO) emissions, volatile organic compounds (VOC) emissions, and nitrogen oxide (NO_X) emissions from the emergency diesel engine gen-sets (Engine Groups VA3, VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) shall be controlled by the use of good operating practices and performing maintenance in accordance with the manufacturer recommendations. In addition, the permittee may only change those settings that are permitted by the manufacturer and does not increase air emissions.

   (9VAC5-80-1180 and 9VAC5-50-260)

2. **Engine Electrical Power Output** – Each emergency diesel engine gen-set (Engine Groups VA3, Gen4H, and Gen5H) shall be equipped with a Kohler APM802 controller to limit the electrical power output of each diesel engine gen-set to not more than 1,500 ekW. Each APM802 controller shall be programmed to initiate a shutdown timer of no more than 60 seconds, if the generator exceeds its capacity limit.
   (9VAC5-80-1180 and 9VAC5-50-260)

3. **Monitoring Devices** – Each emergency diesel engine gen-set (Engine Groups VA3, VA4, Gen4H, VA5, Gen5, VA6, and Gen6H) shall be equipped with:

   a. A non-resettable hour metering device to monitor the operating hours. The non-resettable hour meter used to continuously measure the hours of operation for each emergency diesel engine gen-set shall be observed by the owner with a frequency of not less than once each day the emergency diesel engine gen-set is operated. The owner shall keep a log of these observations.

   b. A device to continuously measure and record fuel consumption (in gallons) for each emergency diesel engine gen-set. The device used to continuously measure fuel consumption for each emergency diesel engine gen-set shall be observed by the owner with a frequency of not less than once each day the emergency diesel engine gen-set is operated. The permittee shall keep a log of these observations.

Each monitoring device shall be installed, maintained, calibrated (as appropriate), and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the emergency diesel engine gen-sets are operating.
(9VAC5-80-1180 D)

4. **Monitoring Devices** – Each emergency diesel engine gen-set (Engine Groups VA3, Gen4H, and Gen5H) shall be equipped with a device to continuously monitor and record the electrical power output (ekW) of the emergency diesel engine gen-sets. The electrical power output (ekW) data shall be reduced to one-hour averages for each engine gen-set each time the emergency diesel engine gen-set is operated.

   Each monitoring device shall be installed, maintained, calibrated (as appropriate), and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the emergency diesel engine gen-sets are operating.
   (9VAC5-80-1180 D)

OPERATING/EMISSION LIMITATIONS

5. **Operation of the Engine Gen-sets** – The permittee shall operate and maintain each emergency diesel engine gen-set (Engine Groups VA3, VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) and control device according to the manufacturer’s written instructions or procedures developed by the permittee that are approved by the engine manufacturer. In addition, the permittee may only change those settings that are permitted by the manufacturer and does not increase air emissions.
   (9VAC5-80-1180)

6. **Operating Limitations (Ozone Season)** – No emergency diesel engine gen-set (Engine Groups VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) shall be operated for scheduled maintenance and readiness testing (Scheduled MCRT), stack testing, or operational training (that involves fuel combustion) between the hours of 7 a.m. to 5 p.m. any day during the ozone season of May 1 through September 30. The permittee may petition the DEQ - (Northern Regional Office) Air Compliance Manager for exceptions to this requirement, with approvals made on a case-by-case basis.
   (9VAC5-80-1180)

7. **Operating Limitations (Ozone Season) – Integration Operational Period –** During the integration operational period of each emergency diesel engine gen-set (Engine Groups VA6 and Gen6H), any operation of the unit (that involves fuel combustion) between the hours of 7 a.m. to 5 p.m. any day during the ozone season of May 1 through September 30 shall only occur if the forecast Air Quality Index (AQI) for ozone as published on the

AirNow website (**https://airnow.gov**) for Northern Virginia for that day is less than or equal to 100. In the event that AirNow-EnviroFlash (**www.enviroflash.info**) issues an Air Alert for Metropolitan Washington, D.C. for a day which the forecasted AQI for ozone was less than or equal to 100, operation of each unit (which involves fuel combustion) shall be minimized to the maximum extent practical.
(9VAC5-80-1180)

8. **Operating Limitations (Blackout Testing)** – For annual blackout tests, a maximum of 21 emergency diesel engine gen-sets (Engine Groups VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) can be tested on the same day.
(9VAC5-80-1180)

9. **Emergency Power Generation** – The emergency diesel engine gen-sets (Engine Groups VA3, VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) shall only be operated in the following modes:

   a. In situations that arise from sudden and reasonably unforeseeable events where the primary energy or power source is disrupted or disconnected due to conditions beyond the control of an owner or operator of a facility including:

      i. A failure of the electrical grid;

      ii. On-site disaster or equipment failure; or

      iii. Public service emergencies such as flood, fire, natural disaster, or severe weather conditions.

   b. For participation in an ISO-declared emergency, where an ISO emergency is:

      i. An abnormal system condition requiring manual or automatic action to maintain system frequency, to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property;

      ii. Capacity deficiency or capacity excess conditions;

      iii. A fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel;

      iv. Abnormal natural events or man-made threats that would require conservative operations to posture the system in a more reliable state; or

      v. An abnormal event external to the ISO service territory that may require ISO action.

c. For scheduled maintenance checks and readiness testing (Scheduled MCRT).

d. For unscheduled maintenance, testing, and operational training.

e. For the integration operational period which is the period of time beginning with the first time the affected unit is started on-site and ending when the affected unit is fully integrated with the source's electrical system.

(9VAC5-80-1180)

10. **Operating Limits** – Each emergency diesel engine gen-set (Engine Groups VA3, Gen4H, and Gen5H) shall not operate more than 1,500 ekW electrical power. Compliance with this condition shall be demonstrated utilizing the electric output data from the required monitoring device in Condition 4.
(9VAC5-80-1180)

11. **Operating Hours** – The operating hours of the emergency diesel engine gen-sets (Engine Groups VA3, VA4, Gen4H, VA5, and Gen5H) are limited to the following:

    a. No single unit shall operate more than 500 hours per year for all purposes (as provided in Condition 9), calculated monthly as the sum of each consecutive 12-month period.

    b. No single unit shall operate more than 100 hours per year for maintenance checks and readiness testing, calculated monthly as the sum of each consecutive 12-month period.

    Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
    (9VAC5-80-1180)

12. **Operating Hours** – The operating hours of the emergency diesel engine gen-sets (Engine Groups VA6 and Gen 6H) are limited to the following:

    a. No single unit shall operate more than 500 hours per year for all purposes (as provided in Condition 9), calculated monthly as the sum of each consecutive 12-month period.

    b. No single unit shall operate more than 24 hours per year for scheduled maintenance checks and readiness testing (Scheduled MCRT, as provided in Condition 9.c), calculated monthly as the sum of each consecutive 12-month period.

    Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
    (9VAC5-80-1180)

13. **Fuel Specification** – The approved fuel for the emergency diesel engine gen-sets (Engine Groups VA3, VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) is diesel fuel. The diesel fuel shall meet the American Society for Testing and Materials (ASTM) D975 specification for Grade No. 1-D S15 or Grade No. 2-D S15 and have a maximum sulfur content of 15 ppm, per shipment. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits. A change in the fuel may require a permit to modify and operate.
(9VAC5-80-1180 and 9VAC5-50-260)

14. **Fuel Certification** – The permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel. Each fuel supplier certification shall include the following:

    a. The name of the fuel supplier;

    b. The date on which the diesel fuel was received;

    c. The quantity of diesel fuel delivered in the shipment;

    d. A statement that the diesel fuel complies with the American Society for Testing and Materials specifications (ASTM D975) for S15 diesel fuel oil; and

    e. The sulfur content of the diesel fuel.

    Alternatively, the permittee must obtain approval from the Regional Air Compliance Manager of the DEQ's NRO if other documentation will be used to certify the diesel fuel type.

    Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 13. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
    (9VAC5-80-1180)

15. **Diesel Fuel Throughput Limit –**

    a. The emergency diesel engine gen-sets (Engine Group VA3) <u>combined</u>, shall consume no more than 75,000 gallons of diesel fuel per year, calculated monthly as the sum of each consecutive 12-month period;

    b. The emergency diesel engine gen-sets (Engine Groups VA4 and Gen4H) <u>combined</u>, shall consume no more than 160,000 gallons of diesel fuel per year total and no more than 65,000 gallons per year for maintenance checks and readiness testing, calculated monthly as the sum of each consecutive 12-month period;

c. The emergency diesel engine gen-sets (Engine Groups VA5 and Gen5H) combined, shall consume no more than 160,000 gallons of diesel fuel per year total and no more than 65,000 gallons per year for maintenance checks and readiness testing, calculated monthly as the sum of each consecutive 12-month period; and

d. The emergency diesel engine gen-sets (Engine Groups VA6 and Gen6H) combined, shall consume no more than 160,000 gallons of diesel fuel per year total, calculated monthly as the sum of each consecutive 12-month period.

Maintenance checks and readiness testing fuel consumption limits do not include initial (one-time) commissioning, unplanned maintenance, manufacturer recall updates, and repairs.

Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9VAC5-80-1180)

EMISSION LIMITS

16. **Emission Limits (Hourly)** – Emissions from the operation of each emergency diesel engine gen-set shall not exceed the limits specified below:

Pollutant	Engine Groups VA3, Gen4H, and Gen5H	Engine Groups VA4 and VA5	Engine Group VA6	Engine Group Gen6H
Nitrogen Oxides (as NO_2)	28.77 lb/hr	61.48 lb/hr	59.45 lbs/hr	28.36 lbs/hr
Carbon Monoxide (CO)	5.45 lb/hr	13.86 lb/hr	8.21 lbs/hr	6.98 lbs/hr
Volatile Organic Compounds (VOC)	0.35 lb/hr	2.81 lb/hr	2.65 lbs/hr	0.97 lbs/hr
Particulate Matter (PM_{10})	0.48 lb/hr	1.06 lb/hr	0.97 lbs/hr	0.41 lbs/hr
Particulate Matter ($PM_{2.5}$)	0.48 lb/hr	1.06 lb/hrb	0.97 lbs/hr	0.41 lbs/hr

Compliance with these emission limits shall be based on the proper operation and maintenance of the emergency diesel engine gen-sets or by testing, if required.
(9VAC5-80-1180 and 9VAC5-50-260)

17. **Emission Limits (Annual)** – Emissions from the combined operation of the emergency diesel engine gen-sets shall not exceed the limits specified below:

Pollutant	Engine Group VA3	Engine Groups VA4 and Gen4H	Engine Groups VA5 and Gen5H	Engine Groups VA6 and Gen6H
Nitrogen Oxides (as NO_2)	11.3 tpy	24.0 tpy	24.0 tpy	20.65 tpy
Carbon Monoxide (CO)	6.9 tpy	15.6 tpy	15.6 tpy	4.68 tpy
Volatile Organic Compounds (VOC)	0.4 tpy	3.1 tpy	3.1 tpy	1.89 tpy
Particulate Matter (PM_{10})	0.6 tpy	1.3 tpy	1.3 tpy	0.90 tpy
Particulate Matter ($PM_{2.5}$)	0.6 tpy	1.3 tpy	1.3 tpy	0.90 tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 1, 2, and 15.
(9VAC5-80-1180)

18. **Visible Emission Limit** – Visible emissions from each emergency diesel engine gen-set included in the Equipment List section of this permit exhausts shall not exceed 5% opacity except during one 6-minute period in any one hour in which visible emissions shall not exceed 10% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.

    During startup and shutdown, visible emissions from each emergency diesel engine gen-set shall not exceed 10% opacity except during one 6-minute period in any one hour in which visible emissions shall not exceed 20% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
    (9VAC5-80-1180 and 9VAC5-50-260)

INITIAL COMPLIANCE DETERMINATION

19. **Stack Test –** Initial performance tests shall be conducted on three (3) emergency diesel engine gen-sets (Engine Group VA6) for NO_X (as NO_2) and CO using appropriate EPA reference methods as approved by the Regional Air Compliance Manager of the DEQ's NRO to determine compliance with the emission limits contained in Condition 16.

    a. Emissions testing of each pollutant for each selected emergency diesel engine gen-set shall consist of three one-hour test runs under load. The average of the three runs shall be reported as the short-term emission rate for that emergency diesel engine gen-set.

b. Testing shall be performed on the exhaust stack of the emergency diesel engine gen-sets to demonstrate compliance with the NO_X and CO emission limits specified in Condition 16. Testing shall be conducted with the emergency diesel engine gen-set operating at ≥ 90 percent of its rated capacity, unless multiple load band testing is approved by DEQ;

c. Recorded emergency diesel engine gen-set operational information shall include, but not be limited to:

   i. Generator load/kilowatt output.

   ii. Fuel consumption and fuel sulfur content of the diesel fuel oil.

d. Perform testing to demonstrate compliance within 120 days after the integration operational period has commenced. The integration operational period is defined as: the period of time beginning with the first time the affected unit is started on-site and ending when the affected unit is fully integrated with the source electrical system. In no case shall the integration operational period exceed 30 days. If this deadline falls within the ozone season (May 1 through September 30) the facility shall perform testing to demonstrate compliance within 30 days after the end of the ozone season. Tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30;

e. The details of the tests are to be arranged with the Regional Air Compliance Manager of DEQ's NRO. The permittee shall submit the test protocol to the Regional Air Compliance Manager of DEQ's NRO, at least 30 days prior to testing to ensure adequate time for DEQ approval. If the test protocol is received by the DEQ with less than 30 days for review and acceptance, DEQ approval may not be issued in a timely manner to allow for testing to take place according to the permittee's schedule;

f. Should conditions occur which would require rescheduling the testing, the permittee shall notify the Regional Air Compliance Manager of DEQ's NRO, in writing, within seven days of the scheduled test date or as soon as the rescheduling is deemed necessary; and

g. Two copies, one paper copy and one on removable electronic media, of the test results shall be submitted to the Regional Air Compliance Manager, DEQ's NRO within 60 days after test completion and shall conform to the test report format enclosed with this permit.

(9VAC5-50-30 and 9VAC5-80-1200)

20. **Visible Emissions Evaluation –** Concurrent with the initial performance tests required in Condition 19, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the selected emergency diesel engine-generator sets selected for initial performance testing. Each test shall consist

of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO. The permittee shall submit a VEE protocol in conjunction with the initial stack test protocol required by Condition 19, at least 30 days prior to testing.

a. Should conditions prevent concurrent opacity observations, the Regional Air Compliance Manager of the DEQ's NRO shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests.

b. Two copies of the test result (one hard copy and one on electronic media) shall be submitted to the Regional Air Compliance Manager of the DEQ's NRO within 60 days after test completion and shall conform to the test report format enclosed with this permit (Attachment A).

(9VAC5-50-30 and 9VAC5-80-1200)

21. **Electrical Power Output Control Device Validation** – The permittee shall conduct a demonstration to validate that each electrical power output control device (required by Condition 2) prevents the emergency diesel engine gen-sets (Engine Groups VA3, Gen4H, and Gen5H) from exceeding their permitted capacity. The validation shall be performed, reported, and demonstrate compliance within 60 days after achieving the maximum production rate at which the emergency diesel engine gen-sets will be operated but in no event later than 180 days after startup of the permitted emergency diesel engine gen-sets. The validation shall also be completed before the applicable compliance determinations. The details of the validation are to be arranged with the Regional Air Compliance Manager of the DEQ's NRO. The permittee shall submit a protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit. (9VAC5-80-1180)

CONTINUING COMPIANCE DETERMINATION

22. **Facility Construction** – The emergency diesel engine gen-sets included in the Equipment List section of this permit shall be constructed so as to allow for emissions testing upon reasonable notice at any times, using appropriate methods. This includes constructing the facility/equipment such that volumetric flow rates and pollutant emission rates can be determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
(9VAC5-50-30 F and 9VAC5-80-1180)

23. **Emission Testing/Visible Emissions Evaluation** – Upon request by the DEQ, the permittee shall conduct additional stack tests and/or VEEs of the emergency diesel engine

gen-sets included in the Equipment List section of this permit to demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO.
(9VAC5-80-1200 and 9VAC5-50-30 G)

RECORDS

24. **On Site Records** – The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO. These records shall include, but are not limited to:

    a. Documentation from the manufacturer that each emergency diesel engine gen-set included in the Equipment List section of this permit is certified to meet the EPA Tier 2 emission standards.

    b. Engine information including make, model, serial number, model year, maximum engine power (bhp), and engine displacement for each emergency diesel engine gen-set included in the Equipment List section of this permit.

    c. A monthly log of monitoring device observations, as required by Conditions 3 and 4.

    d. The manufacturer's written operating instructions or procedures developed by the owner/operator that are approved by the engine manufacturer for each emergency diesel engine gen-set included in the Equipment List section of this permit.

    e. Records of the reasons for operation for each emergency diesel engine gen-set included in the Equipment List section of this permit including, but not limited to: the date, cause of operation, cause of the emergency, the ISO-declared emergency notification, and the hours of operation.

    f. Records, as necessary, to demonstrate compliance with the operating limitations of Condition 6; which includes but is not limited to: times, dates, and reasons for operation of each emergency diesel engine gen-set (Engine Groups VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H) that was operating between May 1 and September 30.

    g. To verify compliance with Condition 7, maintain records of:

        i. The forecasted AQI, as determined by the AirNow website for Northern Virginia, for ozone for the days that an emergency diesel engine gen-set operated during the integration operational period;

ii. The measured AQI, as determined by the AirNow website for Northern Virginia, for ozone for the days that an emergency diesel engine gen-set operated during the integration operational period;

iii. Documentation recording any Air Alerts issued for that operating day, as determined by Airnow-EnviroFlash; and

iv. Details of commissioning activities, to include, but not limited to, clock hours, and duration.

h. Records, as necessary, to demonstrate compliance with the operating limitations of Condition 8; which includes but is not limited to: times and dates of annual blackout tests for each emergency diesel engine gen-set (Engine Groups VA4, Gen4H, VA5, Gen5H, VA6, and Gen6H)

i. Annual hours of operation of each emergency diesel engine gen-set included in the Equipment List section of this permit, with annual hours of operation calculated monthly as the sum of each consecutive 12-month period.

j. Annual hours of operation of each emergency diesel engine gen-set (Engine Groups VA3, VA4, Gen4H, VA5, and Gen5H) for purposes of maintenance checks/readiness testing, calculated monthly as the sum of each consecutive 12-month period.

k. Monthly and annual hours of operation of each emergency diesel engine gen-set (Engine Groups VA6 and Gen6H), for purposes of scheduled maintenance checks and readiness testing (Scheduled MCRT), calculated monthly as the sum of each consecutive 12-month period.

l. All fuel supplier certifications.

m. Monthly and annual fuel consumption for the combined operation of the 25 emergency diesel engine gen-sets (Engine Group VA3), with annual fuel consumption calculated daily as the sum of each consecutive 12-month period, to verify compliance with the throughput limitation in Condition 15.

n. Combined monthly and annual fuel consumption of the emergency diesel engine gen-set (Engine Groups VA4 and Gen4H), with annual fuel consumption calculated monthly as the sum of each consecutive 12-month period to verify compliance with the throughput limitation specified in Condition 15.

o. Combined monthly and annual fuel consumption of the emergency diesel engine gen-set (Engine Groups VA5 and Gen5H), with annual fuel consumption calculated monthly as the sum of each consecutive 12-month period to verify compliance with the throughput limitation specified in Condition 15.

p. Monthly and annual fuel consumption of each emergency diesel engine gen-set (Engine Groups VA6 and Gen6H), for all purposes, with the annual fuel consumption calculated monthly as the sum of each consecutive 12-month period.

q. Monthly and annual fuel consumption for the combined operation of the 21 emergency diesel engine gen-sets (Engine Groups VA6 and Gen6H), calculated monthly as the sum of each consecutive 12-month period, to verify compliance with the fuel throughput limitations specified in Condition 15.

r. Annual emissions calculations for NO_x (as NO_2), CO, VOC, PM_{10}, and $PM_{2.5}$ from the emergency diesel engine gen-sets included in the Equipment List section of this permit to verify compliance with the emissions limitations in Condition 17, with annual emissions calculated monthly as the sum of each consecutive 12-month period.

s. Results of all stack tests, VEEs, and electrical power-output control device validations.

t. Records of scheduled maintenance checks and readiness testing (Scheduled MCRT).

u. Records of unscheduled maintenance, testing, and operator training.

v. Records as required by Condition 29.

w. Records of changes in setting that are permitted by the manufacturer of the emergency diesel engine gen-sets.

Compliance for the consecutive 12-month period in the subsections above (as applicable) shall be demonstrated monthly by adding the total for the most recent month to the individual monthly totals for the preceding 11 months.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years, unless otherwise noted.
(9VAC5-80-1180 and 9VAC5-50-50)

NOTIFICATIONS

25. **Initial Notifications (VA6)** – The permittee shall furnish written notification of the items below to the Regional Air Compliance Manager of the DEQ's NRO at the following address:

Regional Air Compliance Manager
Department of Environmental Quality
13901 Crown Court
Woodbridge, VA 22193

The permittee shall submit one notification for each building or construction phase containing information on each emergency diesel engine gen-set (Engine Groups VA6 and Gen6H) as described below:

a. The actual date on which installation of the emergency diesel engine gen-sets in the building, or phase, commenced within 30 days after such date. The notification must contain the following:

    i. Name and address of the permittee;

    ii. Unit reference number of the initial unit installed;

    iii. The address of the affected source; and

    iv. The date construction commenced.

b. The date that the integration operational period started for each emergency diesel engine gen-set within 15 days after the last generator at each building, or construction phase, completes its integration operational period. If a period of construction is paused or halted for 45 days, this notification shall be provided to the DEQ within 15 days after completion of the integration operational period for the most recently installed engine generator set. The notification must contain the following:

    i. Engine information including make model, engine family, serial number, model year, maximum engine power;

    ii. Unit reference number of the initial unit installed;

    iii. Installation date; and

    iv. Integration operational period start and end dates.

For the purpose of this notification the integration operational period is defined as: the period of time beginning with the first time the affected unit is started on-site and ending when the affected unit is fully integrated with the sources electrical system. In no case shall this period exceed 30 days.
(9VAC5-80-1180 and 9VAC5-50-50)

GENERAL CONDITIONS

26. **Permit Invalidation (VA6)** – This permit to construct the emergency diesel engine gen-sets (Engine Groups VA6 and Gen6H) shall become invalid, unless an extension is granted by the DEQ, if:

a. A program of continuous construction is not commenced within 18 months from the 'Original Permit Date' specified in the equipment list in the Introduction section of this permit; or if

b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time.

(9VAC5-80-1210)

27. **Permit Suspension/Revocation** – This permit may be suspended or revoked if the permittee:

a. Knowingly makes material misstatements in the permit application or any amendments to it;

b. Fails to comply with the conditions of this permit;

c. Fails to comply with any emission standards applicable to a permitted emissions unit;

d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or

e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emissions limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9VAC5-80-1210 G)

28. **Right of Entry** – The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9VAC5-170-130 and 9VAC5-80-1180)

29. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

    The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to:

    a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

    b. Maintain an inventory of spare parts.

    c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

    d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

    Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
    (9VAC5-50-20 E and 9VAC5-80-1180 D)

30. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
    (9VAC5-20-180 J and 9VAC5-80-1180 D)

31. **Notification for Facility or Control Equipment Malfunction** – The permittee shall furnish notification to the Northern Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour. Such notification shall be made no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of discovery of the malfunction. When the condition causing the failure or malfunction has

been corrected and the equipment is again in operation, the permittee shall notify the Northern Regional Office.
(9VAC5-20-180 C and 9VAC5-80-1180)

32. **Violation of Ambient Air Quality Standard** – The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9VAC5-20-180 I and 9VAC5-80-1180)

33. **Change of Ownership** – In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current minor NSR permit issued to the previous owner. The new owner shall notify the Northern Regional Office of the change of ownership within 30 days of the transfer.
(9VAC5-80-1240)

34. **Permit Copy** – The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9VAC5-80-1180)

SOURCE TESTING REPORT FORMAT

Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test dates
4. Tester; name, address and report date

Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. *Signed by reviewer

Copy of approved test protocol

Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. *For each emission unit, a table showing:
    a. Operating rate
    b. Test Methods
    c. Pollutants tested
    d. Test results for each run and the run average
    e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section. Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

Test Results

1. Detailed test results for each run
2. *Sample calculations
3. *Description of collected samples, to include audits when applicable

Appendix

1. *Raw production data
2. *Raw field data
3. *Laboratory reports
4. *Chain of custody records for lab samples
5. *Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

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* Not applicable to visible emission evaluations