



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

June 1, 2022

Mr. D. Tony Qorri
Vice President, Construction
zColo, LLC
3110 N Central Ave, Suite B-75
Phoenix, AZ 85012

Location: Loudoun County
Registration No.: 73743

Dear Mr. Qorri:

Attached is a permit to construct and operate 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 combines the terms and conditions from, and supersedes, the permit documents dated September 28, 2012 and May 18, 2017.

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 May 27, 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 construct and operate shall not relieve zColo, LLC of the responsibility to comply with all other local, state, and federal permit regulations.

The proposed diesel fired emergency engine generator sets (engine 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 III. Virginia has not accepted delegation of these rules. 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 (571) 866-6048 or katie.devoss@deq.virginia.gov.

Sincerely,



Justin A. Wilkinson
Regional Air Permit Manager

TAF/JAW/KD/73743 mNSR (2022-06-01)

Attachment: Permit



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Thomas A. Faha
Regional Director

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit document supersedes and combines the terms and conditions from the mNSR permit documents dated September 28, 2012 and May 18, 2017.

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

zColo, LLC
21635 Red Rum Drive
Ashburn, VA 20147
Registration No.: 73743

is authorized to construct and operate

emergency diesel engine gen-sets

located at

21630 and 21631 Red Rum Drive
Ashburn, VA 20147

in accordance with the Conditions of this permit.

Approved on

June 1, 2022.

A handwritten signature in blue ink that reads "Thomas A. Faha".

Thomas A. Faha
Regional Director, Department of Environmental Quality

Permit consists of 19 pages.
Permit Conditions 1 to 32.

INTRODUCTION

This permit approval is based on the permit applications dated May 26, 2010, including supplemental information dated June 9, 2010 and June 17, 2010; May 15, 2012; February 1, 2017; and August 23, 2021, including supplemental information dated May 27, 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 9 VAC 5-10-10 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 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

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

Equipment to be Constructed:

Ref. No(s).	Equipment Description	Maximum Rated Capacity	Delegated Federal Requirements	Original Permit Date
EG2-1 through EG2-26	26 emergency diesel engine gen-sets consisting of either Caterpillar 3516E, Caterpillar C175-16, and/or Cummins QSK95-G12	4,423 bhp 3,000 ekW (each)	None	June 1, 2022
EG2BB	One (1) Caterpillar C18 emergency diesel engine gen-set	1,112 bhp 750 ekW	None	June 1, 2022

Equipment previously Constructed:

Ref. No(s).	Equipment Description	Maximum Rated Capacity	Delegated Federal Requirements	Original Permit Date
2C, 3A, 3B, 3C, 3D, and 3S	Six (6) Caterpillar 3516C emergency diesel engine gen-sets	2,937 bhp 2,000 ekW (each)	None	May 18, 2017
2A, 2B, and 2S	Three (3) Caterpillar 3516C emergency diesel engine gen-sets	2,937 bhp 2,000 ekW (each)	None	September 28, 2012
1A, 1C, 1D, 1E, and 1S	Five (5) Caterpillar 3516C emergency diesel engine gen-sets	2,937 bhp 2,000 ekW (each)	None	August 5, 2010

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** – Nitrogen oxides (NO_x) emissions from each emergency diesel engine gen-set (Ref. Nos. 2C, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) shall be controlled by electronic fuel injection, turbocharged engines, and after coolers. The permittee shall maintain documentation that demonstrates the control devices have been installed on each emergency diesel engine gen-set.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

2. **Emission Controls** – Nitrogen oxides (NO_x) emissions from the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, and 2S) shall be controlled by turbocharged engines, after coolers, and low NO_x emission packages.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

3. **Emission Controls** – Visible emissions, particulate matter (PM₁₀ and PM_{2.5}) emissions, carbon monoxide (CO) emissions, volatile organic compound (VOC) emissions, and nitrogen oxide (NO_x) emissions from the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) shall be controlled by the use of good operating practices and performing appropriate 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.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

4. **Monitoring Devices** – Each emergency diesel engine gen-set (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) shall be equipped with a non-resettable hour metering device to monitor the operating hours.

The non-resettable hour meter shall be observed by the permittee at a minimum frequency of once per day when the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2S, EG2-1 through EG2-26, and EG2BB) are operated. Refer to Condition 20 for record keeping requirements to demonstrate compliance with this condition.

The non-resettable hour meter used to continuously measure the hours of operation for each emergency diesel engine gen-set (Ref. Nos. 2C, 3A, 3B, 3C, 3D, 3S) shall be observed by the permittee with a frequency of not less than once each month.

The permittee shall keep a log of these observations (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB).

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 diesel engine gen-sets are operating.
(9 VAC 5-80-1180 D)

OPERATING/EMISSION LIMITATIONS

5. **Emergency Power Generation** – The emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) 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 units is started on-site and ending when the affected unit is fully integrated with the sources electrical system.

(9 VAC 5-80-1180)

6. **Operation of the Engine Gen-Sets** – The permittee shall operate and maintain each emergency diesel engine gen-set (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2S, EG2-1 through EG2-26, and EG2BB) 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.

(9 VAC 5-80-1180)

7. **Operating Limitations (Ozone Season)** – No emergency diesel engine gen-set (Ref. Nos. EG2-1 through EG2-26 and EG2BB) shall be operated for scheduled maintenance checks (Scheduled MCRT), readiness testing, stack testing, or operational training (that involves fuel combustion) between the hours of 7 a.m. to 5 p.m. any day during May 1 through September 30.

(9 VAC 5-80-1180)

8. **Operating Limitations (Ozone Season) – Integration Operational Period** – During the integration operational period of each emergency diesel engine gen-set (Ref. Nos. EG2-1 through EG2-26 and EG2BB), 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 Northern Virginia 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.

(9 VAC 5-80-1180)

9. **Operating Hours** – Each individual emergency diesel engine gen-set (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, and EG2-1 through EG2-26) shall not operate more than 500 hours per year for all purposes, calculated monthly as the sum of each consecutive 12 month period.

The emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S) shall not operate more than 1,274 hours per year for all purposes (as provided in Condition 5) combined, calculated monthly as the sum of each consecutive 12 month period.

Each individual emergency diesel engine gen-set (Ref. Nos. 2C, 3A, 3B, 3C, 3D, 3S) shall not operate more than 100 hour per year for scheduled maintenance checks and readiness testing, unscheduled maintenance, testing, and operational training (as provided in Conditions 5.c and 5.d), calculated monthly as the sum of each consecutive 12 month period.

The emergency diesel engine gen-sets (Ref. Nos. EG2-1 through EG2-26) shall not operate more than 2,366 hours per year for all purposes (as provided in Condition 5) combined, calculated monthly as the sum of each consecutive 12 month period.

The individual emergency diesel engine gen-set (Ref. No. EG2BB) shall not operate more than 91 hours per year for all purposes (as provided in Condition 5) combined, calculated monthly as the sum of each consecutive 12 month period.

Each individual emergency diesel engine gen-set (Ref. Nos. EG2-1 through EG2-26 and EG2BB) shall not operate more than 22 hours per year for scheduled maintenance checks and readiness testing (Scheduled MCRT, as provided in Condition 5.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.

(9 VAC 5-80-1180)

10. **Fuel Specification** – The approved fuel for the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) is ultra-low sulfur diesel fuel oil, and shall meet the specifications below:

ULTRA LOW SULFUR DIESEL FUEL OIL:

- a. Does not exceed the American Society for Testing and Materials (ASTM) specification, D975, for grade ultra-low sulfur 2-D or grade 2-D S15, or

- b. Has a maximum sulfur content not to exceed 0.0015% by weight (15 ppm), and either a minimum cetane number of 40 or maximum aromatic content of 35 volume percent.

Exceedance of these specifications may be considered credible evidence of an exceedance of emission limits. A change in the fuel type or the fuel sulfur content may require a permit to modify and operate.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

- 11. **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; and
- d. A statement that the diesel fuel:
 - i. complies with the ASTM specifications for Grade No. 1-D S15 or Grade No. 2-D S15 (also known as ultra-low sulfur diesel (ULSD)); or
 - ii. has a sulfur content per shipment not to exceed 0.0015% by weight (15 ppm) and either a minimum cetane number of forty or maximum aromatic content of thirty-five percent by volume.

Alternatively, the permittee must obtain approval from DEQ's NRO's Regional Air Compliance Manager, 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 10. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.

(9 VAC 5-80-1180)

EMISSION LIMITS

- 12. **Emission Limits (Hourly)** – Emissions from the operation of each emergency diesel engine gen-set (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) shall not exceed the limits specified below:

Pollutant	Caterpillar 3516C (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, and 3S)	(Ref. Nos. EG2-1 through EG2-26)			Caterpillar C18 (Ref. No. EG2BB)
		Caterpillar 3516E	Caterpillar C175-16	Cummins QSK95-G12	
Nitrogen Oxides (NO _x as NO ₂)	38.85 lbs/hr	58.11 lbs/hr	58.51 lbs/hr	48.72 lbs/hr	14.35 lbs/hr
Carbon Monoxide (CO)	3.95 lbs/hr	11.62 lbs/hr	7.64 lbs/hr	7.61 lbs/hr	4.74 lbs/hr
Volatile Organic Compounds (VOC)	1.14 lbs/hr	0.58 lbs/hr	0.85 lbs/hr	2.65 lbs/hr	1.92 lbs/hr
Particulate Matter (PM ₁₀)	0.62 lbs/hr	0.91 lbs/hr	0.61 lbs/hr	1.18 lbs/hr	0.33 lbs/hr
Particulate Matter (PM _{2.5})	0.62 lbs/hr	0.91 lbs/hr	0.61 lbs/hr	1.18 lbs/hr	0.33 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.
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)

13. **Emission Limits (Annual)** – Emissions from the operation of the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) shall not exceed the limits specified below:

Pollutant	Caterpillar 3516C (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, and 3S)	Caterpillar 3516E, Caterpillar C175-16, and/or Cummins QSK95-G12 (Ref. Nos. EG2-1 through EG2-26)	Caterpillar C18 (Ref. No. EG2BB)
Nitrogen Oxides (NO _x as NO ₂)	24.75 tpy	69.22 tpy	0.66 tpy
Carbon Monoxide (CO)	2.52 tpy	13.76 tpy	-
Volatile Organic Compounds (VOC)	0.73 tpy	3.14 tpy	-
Particulate Matter (PM ₁₀)	0.40 tpy	1.41 tpy	-
Particulate Matter (PM _{2.5})	0.40 tpy	1.41 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 the annual emission limits may be determined as stated in Conditions 9 and 12.

(9 VAC 5-80-1180)

14. **Emission Limits (Annual)** – Emissions from the operation of the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) shall not exceed the limits specified below:

Pollutant	(Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB)
Nitrogen Oxides (NO _x as NO ₂)	94.63 tpy
Carbon Monoxide (CO)	16.50 tpy
Volatile Organic Compounds (VOC)	3.96 tpy
Particulate Matter (PM ₁₀)	1.83 tpy
Particulate Matter (PM _{2.5})	1.83 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 the annual emission limits may be determined as stated in Conditions 9, 13, and 12.

(9 VAC 5-80-1180)

15. **Visible Emission Limit** – Visible emissions from each emergency diesel engine gen-set (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) 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).

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

INITIAL COMPLIANCE DETERMINATION

16. **Stack Test** – Initial performance tests shall be conducted on at least twenty percent (20%) of the units installed for each type of engine model (Caterpillar 3516E, Caterpillar C175-16, and Cummins QSK95-G12) of the twenty-six (26) emergency diesel engine gen-sets (Ref. Nos. EG2-1 through EG2-26) for NO_x (as NO₂) 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 12.

- 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 12. 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 thirty days prior to testing to ensure adequate time for DEQ approval. If the test protocol is received by the DEQ with less than thirty 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.

(9 VAC 5-50-30 and 9 VAC 5-80-1200)

17. **Visible Emissions Evaluation** – Concurrent with the initial performance tests required in Condition 16, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the emergency diesel engine gen-sets selected for initial performance testing. The details of the tests are to be arranged with the Regional Air Compliance Manager of DEQ’s NRO. The permittee shall submit a VEE protocol in conjunction with the initial stack test protocol required by Condition 16, 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 (7) days, and visible emissions testing shall be rescheduled within thirty-days. Rescheduled testing shall be conducted under the same operating conditions 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 sixty (60) days after test completion and shall conform to the test report format enclosed with this permit (Attachment A).

(9 VAC 5-50-30 and 9 VAC 5-80-1200)

CONTINUING COMPLIANCE DETERMINATION

18. **Facility Construction** – The emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) 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.

(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

19. **Emission Testing/Visible Emissions Evaluation** – Upon request by the DEQ, the permittee shall conduct stack tests and/or VEEs of the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) 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.

(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

RECORDS

20. **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 (Ref. Nos. 2C, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) 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 (Ref. Nos. 2B, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB).
 - c. A log of monitoring device observations as required by Condition 4 (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB).
 - 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 (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB).
 - e. Monthly and annual hours of operation of each emergency diesel engine gen-set (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB), with annual hours of operation calculated monthly as the sum of each consecutive 12-month period.
 - f. Monthly and annual hours of operation of each emergency diesel engine gen-set (Ref. Nos. EG2-1 through EG2-26 and EG2BB), for purposes of scheduled maintenance check and readiness testing (Scheduled MCRT), calculated monthly as the sum of each consecutive 12-month period.
 - g. Annual hours of operation of each emergency diesel engine gen-set (Ref. Nos. EG9 through EG14), for purposes of scheduled maintenance checks/readiness testing, unscheduled maintenance, testing, and operational training, calculated monthly as the sum of each consecutive 12-month period.
 - h. All fuel supplier certifications.

- i. Monthly and annual emissions calculations for NO_x (as NO₂), CO, VOC, PM₁₀, and PM_{2.5} from the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S) with annual emissions, calculated monthly, as the sum of each consecutive 12-month period, to verify compliance with the annual emission limits in Condition 13.
- j. Monthly and annual emissions calculations for NO_x (as NO₂), CO, VOC, PM₁₀, and PM_{2.5} from the emergency diesel engine gen-sets (Ref. Nos. EG2-1 through EG2-26) with annual emissions, calculated monthly, as the sum of each consecutive 12-month period, to verify compliance with the annual emission limits in Condition 13.
- k. Monthly and annual emissions calculations for NO_x (as NO₂ from the emergency diesel engine gen-set (Ref. Nos. EG2BB) with annual emissions, calculated monthly, as the sum of each consecutive 12-month period, to verify compliance with the annual emission limits in Condition 13.
- l. Results of all stack tests and VEEs.
- m. Records of scheduled maintenance checks and readiness testing (Scheduled MCRT).
- n. Records of unscheduled maintenance and operator training.
- o. Records of changes in settings that are permitted by the manufacturer of the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB).
- p. A monthly summary table for each emergency diesel engine gen-set (Ref. Nos. 2B, 3A, 3B, 3C, 3D, 3S) to include:
 - i. Engine hours;
 - ii. Fuel consumption; and
 - iii. Reasons for operating as defined in Condition 5.
- q. Records of the reasons for operation for each emergency diesel engine gen-set (Ref. Nos. EG2-1 through EG2-26 and EG2BB), including, but not limited to, the date, cause of operation, cause of the emergency, the ISO-declared emergency notification, and the hours of operation.
- r. Records, as necessary, to demonstrate compliance with the operating limitations of Condition 7; which includes but is not limited to: times, dates and reasons for operation of each diesel engine gen-set that was operating between May 1 and September 30.

- s. To verify compliance with Condition 8, maintain records for the emergency diesel engine gen-sets (Ref. Nos. EG2-1 through EG2-26 and EG2BB) 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.

Compliance for the consecutive 12-month period in the subsections above (as applicable) shall be demonstrated monthly by adding the total for the most recently completed 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.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

NOTIFICATIONS

- 21. **Notifications** – All correspondence concerning this permit should be submitted to the following address:

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

(9 VAC 5-50-50)

22. **Initial Notifications** - The permittee shall furnish written notification of items a through e below to the Regional Air Compliance Manager of the DEQ's NRO:
- a. The actual date on which construction of each emergency diesel engine gen-set (Ref. Nos. 3A, 3B, 3C, 3D, and 3S) commenced within 30 days after such date. Along with this notification, the information below shall be included:
 - i. Name and address of the permittee;
 - ii. The address of the affected source;
 - iii. Engine information, including make, model, engine family, serial number, model, year, maximum engine power and engine displacement; and
 - iv. Fuel used.
 - b. The anticipated start-up date of each emergency diesel engine gen-set (Ref. Nos. 3A, 3B, 3C, 3D, and 3S) postmarked not more than 60 days nor less than 30 days prior to such date.
 - c. The actual start-up date of each emergency diesel engine gen-set (Ref. Nos. 3A, 3B, 3C, 3D, and 3S) within 15 days after such date. The actual start-up date for each emergency diesel engine gen-set shall be the date on which each engine completes manufacturer's trials, but shall be no later than thirty days after the initial start-up for manufacturer's trials.
 - d. The actual date on which construction of the emergency diesel engine gen-set (Ref. No. 2C) commenced, within 15 days after the date of this permit. Along with this notification, the information below shall be included:
 - i. Name and address of the permittee;
 - ii. The address of the affected source;
 - iii. Engine information, including make, model, engine family, serial number, model, year, maximum engine power and engine displacement; and
 - iv. Fuel used.
 - e. The actual start-up date of the emergency diesel engine gen-set (Ref. No. 2C) within 15 days after the date of this permit.

(9 VAC 5-50-50 and 9 VAC 5-80-1180)

23. **Initial Notifications** – The permittee shall furnish written notification of the items below to the Regional Air Compliance Manager of the DEQ’s NRO at the address in Condition 21.

The permittee shall submit notification(s) for each building containing the information as described below:

- a. The actual date on which installation of the emergency diesel engine gen-sets (Ref. Nos. EG2-1 through EG2-26 and EG2BB) commenced in each building, within 30 days after such date. The notification must contain the following:
 - i. Name and address of the permittee;
 - ii. The building;
 - iii. Unit reference number of the initial unit installed; and
 - iv. The date installation commenced.

- b. The start and end dates of the integration operational period for each emergency diesel engine gen-set (Ref. Nos. EG2-1 through EG2-26 and EG2BB) within 15 days after the last generator at each building 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 gen-set. The notification must contain the following:
 - i. Unit reference number;
 - ii. Engine information including make, model, engine family, serial number, model year, maximum engine power, engine displacement, fuel used;
 - 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 source’s electrical system.

(9 VAC 5-50-20)

GENERAL CONDITIONS

24. **Permit Invalidation** – This permit to construct the emergency diesel engine gen-sets (Ref. Nos. 1A, 1C, 1D, 1E, 1S, 2A, 2B, 2C, 2S, 3A, 3B, 3C, 3D, 3S, EG2-1 through EG2-26, and EG2BB) 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 date 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.

(9 VAC 5-80-1210)

25. **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.

(9 VAC 5-80-1210 G)

26. **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.
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

27. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, soot blowing, 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:

- 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.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

28. **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 of malfunction), corrective action, preventive measures taken and name of person generating the record.
(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)

29. **Notification for Facility or Control Equipment Malfunction** – The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ’s NRO 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 Regional Air Compliance Manager of the DEQ’s NRO.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

30. **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.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

31. **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 NRO of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

32. **Permit Copy** – The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

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

* Not applicable to visible emission evaluations