COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193-1453
(703) 583-3800
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

October 4, 2017

Mr. David Lucey
VP, Portfolio Management
Digital Realty Trust
451 D St., Ste 912
Boston, MA 02210

Location: Loudoun County
Registration No.: 73670

Dear Mr Lucey:

Attached is a permit to construct and operate diesel engine generator sets at Digital Loudoun Pkwy Center N LLC, located at 43791 Devin Shafron Drive and 43940 Digital Loudoun Plaza, Ashburn, Virginia (Loudoun County) in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). This permit document combines terms and conditions, in accordance with 9 VAC 5-80-1255, from this permit approval and the permit approval dated January 29, 2014. This permit document supersedes your permit document dated January 29, 2014.

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 September 27, 2017.

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 Digital Realty Trust/Digital Loudoun Pkwy Center N LLC of the responsibility to comply with all other local, state and federal permit regulations.

The proposed diesel engine generator sets are 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 these rules for enforcement through its minor New Source Review program, which is the program under which the attached permit is issued. In summary, these 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 are 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 (VAC) 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. 9 VAC 5-170-200 provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. 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:

David K. Paylor, 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 30-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 John McKie at 703-583-3831.

Sincerely,

James B. LaFratta
Regional Air Permit Manager

TAF/JBL/JRM/Permit_10-04-2017

Attachment: Permit

cc: Regional Air Compliance Manager (electronic file submission)
File

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DEPARTMENT OF ENVIRONMENTAL QUALITY
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www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit supersedes your permit dated January 29, 2014.

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

Digital Realty Trust/Digital Loudoun Pkwy Center N LLC
43791 Devin Shafron Drive, Suite 145
Ashburn, VA 20147
Registration No.: 73670

is authorized to construct and operate:

diesel engine generator sets

located at:

43791 Devin Shafron Dr and
43940 Digital Loudoun Plaza
Ashburn, Virginia 20147

in accordance with the Conditions of this permit.

Approved on: October 4, 2017

Thomas A. Faha,
Regional Director

Permit consists of 18 pages.
Permit Conditions 1 to 34.
Source Test Report Format, 1 page.

INTRODUCTION

This permit approval is based on and combines permit terms and conditions in accordance with 9 VAC 5-80-1255 from the following permit approvals and the respective permit applications and supplemental information:

Permit Program: Approval/Amendment Date	Application Signature Date	Application Amendment Date	Application Supplemental Information Date
mNSR Permit January 29, 2014	March 12, 2008 June 12, 2008 February 5, 2009 June 23, 2010 January 7, 2013 October 23, 2013	-	October 1, 2007 January 29, 2008 July 21, 2008 August 15, 2008 September 3, 2008 September 8, 2008 September 10, 2008 October 10, 2008 August 13, 2010 August 16, 2010 August 17, 2010 November 8, 2013 November 15, 2013
mNSR Permit October 4, 2017	February 17, 2017	-	May 26, 2017 August 8, 2017 August 18, 2017 August 30, 2017 September 22, 2017 September 25, 2017 September 27, 2017

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/modification 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 5-10-20 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 Department of Environmental Quality (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's Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

Still-valid conditions of the permit approved January 29, 2014 have been included in this permit, which supersedes the January 29, 2014 permit. The combining of permit terms and conditions in this permit document conforms to the requirements of 9 VAC 5-80-1255. In this permit the citations in parentheses that follow conditions of this permit that are retained from a previous permit provide the regulatory authority, the number of the condition as it appeared in the permit from which it was taken, and the permit program and approval date of the permit from which it was taken. Such conditions may have been non-materially revised to conform to the format and numbering in this permit document. Conditions not approved prior to the approval date of this permit include only regulatory citations in the parentheses that follow each of those conditions. All conditions are federally and state enforceable unless otherwise indicated.

Equipment List – Equipment at this facility consists of:

Equipment to be Constructed				
Digital Loudoun Pkwy Center N, LLC Bldgs G2, H, J and K				
Reference No.	**Equipment Description**	**Rated Capacity**	**Federal Requirements** (See note below last table.)	**Permit Date**
Gen2.5-1 through Gen2.5-19	Nineteen (19) Caterpillar model 3516C HD diesel engine-generator sets	2,500 ekW (3,633 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 4, 2017
Gen2.5-20 through Gen2.5-22	Three (3) Cummins model DQKAN diesel engine-generator sets	2,500 ekW, (3,640 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 4, 2017

Equipment Permitted Prior to the Date of This Permit:				
Digital Loudoun Pkwy Center N, LLC Bldgs G2, H, J and K				
Reference No.	**Equipment Description**	**Rated Capacity**	**Federal Requirements** (See note below last table.)	**Original Permit Date**
PBB 6	One (1) Caterpillar Model C9 ATAAC Diesel Engine-Generator Sets	300 ekW, (480 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 29, 2014
PBB 7, 8 & 9*	Three (3) Caterpillar Model C18 DITA Diesel Engine-Generator Sets	600 ekW, (900 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 29, 2014
Gen 1 through Gen 45	Forty-five (45) Caterpillar Model 3516C Diesel Engine-Generator Sets	2,000 ekW, (2,937 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 29, 2014
Gen 46 through Gen 54	Nine (9) Cummins Model DQKAE Diesel Engine-Generator Sets**	2,000 ekW, (2,922 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 29, 2014

(Footnotes are on the following page.)

*PBB 9 was not previously listed, but total allowable emissions of the permit issued on January 29, 2014, assumed it was among the units to be constructed, so it is listed here as permitted prior to the date of this permit.

**Cummins generator sets were not previously listed among the units to be constructed, but the rated electrical output capacity and the enforceable permit limits are the same as for Gen 46 through 54 in the permit issued on January 29, 2014, so they are listed here as permitted prior to the date of this permit.

Equipment Permitted Prior to the Date of This Permit (continued):

Digital Loudoun Pkwy Center N, LLC Bldg G1

Reference No.	Equipment Description	Rated Capacity	Federal Requirements (See note below last table.)	Original Permit Date
G100, G102, G202 & G-GR4	Four (4) Caterpillar Model 3516C Diesel Engine-Generator Sets	2,000 ekW, (2,937 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	February 8, 2013
G104, G204, G200 & G-GR3	Four (4) Caterpillar Model 3516C Diesel Engine-Generator Sets	2,000 ekW, (2,937 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	February 8, 2013
G106, G206 & G-GR2	Three (3) Caterpillar Model 3516C Diesel Engine-Generator Sets	2,000 ekW, (2,937 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	February 8, 2013
G108, G208 & G-GR1	Three (3) Caterpillar Model 3516C Diesel Engine-Generator Sets	2,000 ekW, (2,937 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	February 8, 2013
G1 BASE EG (G1-PBB)	One (1) Caterpillar Model C18 DITA Diesel Engine-Generator Sets	600 ekW, (900 bhp)	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	February 8, 2013

Digital Loudoun II, LLC Bldg A

Reference No.	Equipment Description	Rated Capacity	Federal Requirements (See note below last table.)	Original Permit Date
A110-B, A110-D & A110-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009
A120-B, A120-D & A120-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009
A130-B, A130/140-R, & A140-B	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009
A150-B, A150-D & A150-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009
A Base EG (A105)	One (1) Cummins 275DQHAA Diesel Engine-Generator Sets	275 ekW, (470 bhp)	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009

Equipment Permitted Prior to the Date of This Permit (continued):

GIP Stoughton Bldg B

Reference No.	Equipment Description	Rated Capacity	Federal Requirements (See note below last table.)	Original Permit Date
B110-B, B110-D & B110-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	February 07, 2008
B120-B, B120-D & B120-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 30, 2008
B130-B, B130-D & B130-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 30, 2008
B140-B, B140-D & B140-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	May 16, 2008
B Base EG (B105)	One (1) Cummins 500DFEK Diesel Engine-Generator Sets	500 ekW (732 bhp)	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 30, 2008

GIP Stoughton Bldg D

Reference No.	Equipment Description	Rated Capacity	Federal Requirements (See note below last table.)	Original Permit Date
D110-R & D110-B	Two (2) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 30, 2008
D120-B, D120-D & D120-R	Three (3) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 30, 2008
D130-A, D130-B, D130-C, and D130-D	Four (4) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009
D140-D & D140-R	Two (2) Cummins 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	September 28, 2009
D Base EG (D105)	One (1) Cummins 350DFEG Diesel Engine-Generator Sets	350 ekW, (520 bhp)	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	October 30, 2008

Equipment Permitted Prior to the Date of This Permit (continued):				
Digital Loudon II LLC Bldg F (Date of Equipment Manufacture 2008 to 2010)				
Reference No.	**Equipment Description**	**Rated Capacity**	**Federal Requirements** (See note below last table.)	**Original Permit Date**
F130-B & F130/140-R	Two (2) Cummins Model 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 31, 2011
F140-B	One (1) Cummins Model 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2919 bhp)	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 31, 2011
F150-B, F150-D & F150-R	Three (3) Cummins Model 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2919 bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 31, 2011
F160-B, F170-D & F160/170-R	Three (3) Cummins Model 2000DQKAB Diesel Engine-Generator Sets	2,000 ekW, (2,919bhp) each	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 31, 2011
F Base EG (F105)	One (1) Cummins Model 350DFEG Diesel Engine-Generator Sets	350 ekW, (520 bhp)	40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ	January 31, 2011

Specifications included in the above tables are for informational purposes only and do not form enforceable terms or conditions of the permit. Furthermore, the Federal Requirements indicated in the above tables are believed to apply to equipment at this facility, but are not currently enforceable through the DEQ minor new source review program, under which this permit is issued. However, those same requirements would be enforceable through a permit issued pursuant to 9 VAC 5-80, Part II, Article 1.

PROCESS REQUIREMENTS

1. **Emission Controls** - Emissions from all diesel engine-generator sets (listed in the Equipment List above) shall be controlled by the following:

   a. Nitrogen oxides (as NO_2) emissions from the diesel engine generator sets shall be controlled by use of electronic fuel injection, turbocharged engines and low temperature after coolers.

   b. Sulfur dioxide (SO_2) emissions from the diesel engine generator sets shall be controlled by the use of ultra-low sulfur diesel fuel with a sulfur content not to exceed 0.0015% by weight.

   c. Carbon monoxide (CO), NO_x, particulate matter less than 10 microns (PM-10) and PM-2.5, and volatile organic compounds (VOC) emissions from the diesel engine generator sets shall be controlled by good combustion practices.

d. Proper combustion for and visible emissions from the emergency engine-generators 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 do not degrade the air emissions from the engines.

(9 VAC 5-80-1180 and 9 VAC 5-50-260 and Condition 2 of mNSR permit approved January 29, 2014)

2. **Monitoring** - Each diesel engine generator set (listed in the Equipment List above) shall be equipped with a non-resettable hour meter to continuously measure the operating hours for each unit. Each monitoring device shall be installed, maintained, calibrated 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 engines are operating.
   (9 VAC 5-80-1180 D, 9 VAC 5-50-20 C and 9 VAC 5-50-260 and Condition 3 of mNSR permit approved January 29, 2014)

3. **Monitoring Device Observation** - To ensure good performance, the monitoring devices used to continuously measure operating hours shall be observed by the permittee during each test firing and at a frequency of not less than once per day during days in which the respective engine generator sets are called into service.
   (9 VAC 5-80-1180 and Condition 4 of mNSR permit approved January 29, 2014)

OPERATING LIMITATIONS

4. **Emergency Power Generation** - The diesel engine generator sets 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 periodic maintenance, testing, and operational training.

(9 VAC 5-80-1180 and Condition 5 of mNSR permit approved January 29, 2014)

5. **Operating Hours** - The diesel engine generator sets in Building A, Building B, Building D, and Building F (Ref. Nos. A110-B, A110-D, A110-R, A120-B, A120-D, A120-R, A130-B, A130/140-R, A140-B, A150-B, A150-D, A150-R, B110-B, B110-D, B110-R, B120-B, B120-D, B120-R, B130-B, B130-D, B130-R, B140-B, B140-D, B140-R, D110-B, D110-R, D120-B, D120-D, D120-R, D130-A, D130-B, D130-C, D130-D, D140-D, D140-R, F130-B, F130/140-R, F140-B, F150-B, F150-D, F150-R, F160-B, F170-D, and F160/170-R) shall not operate more than 3360 hours combined per year, calculated monthly as the sum of each consecutive 12 month period. Refer to Condition 24 for record keeping requirements to demonstrate compliance with this condition.
(9 VAC 5-80-1180 and Condition 6 of mNSR permit approved January 29, 2014)

6. **Operating Hours** - The diesel engine generator sets in Building G1 (Ref. Nos. G100, G102, G202 & G-GR4; G104, G204, G200 & G-GR3; G106, G206 & G-GR2; G108, G208 & G-GR1) shall not operate more than 1050 hours combined per year, calculated monthly as the sum of each consecutive 12 month period. Refer to Condition 24 for record keeping requirements to demonstrate compliance with this condition.
(9 VAC 5-80-1180 and Condition 7 of mNSR permit approved January 29, 2014)

7. **Operating Hours** - The base diesel engine generator sets (Ref. Nos. G1 Base EG (G1-PBB), A Base EG (A-105), B Base EG (B-105), D Base EG (D-105), F Base EG (F-105), and PBB6 through 9) shall not operate more than 75 hours each per year, calculated monthly as the sum of each consecutive 12 month period. Refer to Condition 24 for record keeping requirements to demonstrate compliance with this condition.
(9 VAC 5-80-1180 and Condition 8 of mNSR permit approved January 29, 2014)

8. **Operating Hours** - The fifty-four 2000 kW diesel engine generator sets in Building G2, H, J & K (Ref. Nos. Gen1 through Gen 54) shall not operate more than 2700 hours combined per year, calculated monthly as the sum of each consecutive 12 month period. Refer to Condition 24 for record keeping requirements to demonstrate compliance with this condition.
(9 VAC 5-80-1180)

9. **Operating Hours** - The twenty-two 2500 kW diesel engine generator sets in Building G2, H, J & K (Ref. Nos. Gen2.5-1 through Gen2,5-22) shall not operate more than 1100 hours combined per year, calculated monthly as the sum of each consecutive 12 month period. Refer to Condition 24 for record keeping requirements to demonstrate compliance with this condition.
(9 VAC 5-80-1180)

10. **Operating Hours** - In addition to the operating hours contained in permit Conditions 5, 6, 7, 8, and 9, no single diesel engine generator set shall operate more than 500 hours per year, calculated monthly as the sum of each consecutive 12 month period. Refer to Condition 24 for record keeping requirements to demonstrate compliance with this condition.
(9 VAC 5-80-1180)

11. **Operation of the Diesel Engine Generator Sets** - The permittee shall operate and maintain each engine-generator set 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 do not impact on air emissions.
(9 VAC 5-80-1180 and 9 VAC 5-50-260 and Condition 11 of mNSR permit approved January 29, 2014)

12. **Fuel Specifications** - The approved fuel for the diesel engine generator sets shall be diesel fuel oil that meets the specifications below:

    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 forty or a maximum aromatic content of thirty-five percent by volume.

    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.
    (9 VAC 5-80-1180, 9 VAC 5-50-260 and Condition 12 of mNSR permit approved January 29, 2014)

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

    a. The name of the fuel supplier; and

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

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

    d. A statement that the diesel fuel oil conforms to the requirements of Condition 12 – Fuel Specifications, or

e. Alternatively, the permittee must obtain approval from the Regional Air Compliance Manager of the DEQ's NRO (Northern Regional Office) if other documentation will be used to certify the diesel fuel oil 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 12.
(9 VAC 5-80-1180 and Condition 13 of mNSR permit approved January 29, 2014)

EMISSION LIMITS

14. **Process Emission Limits**: Emissions from the operation of each engine-generator set shall not exceed the limits specified below:

Engine-Generator Sets	Nitrogen Oxides as (NO_2)* lbs/hr	Carbon Monoxide (CO) lbs/hr	Volatile Organic Compounds (VOC) lbs/hr	PM-10 & PM2.5 lbs/hr
Buildings G2, H, J and K: Gen2.5-1 through Gen2.5-22	48.1	6.02	1.20	0.80
Buildings G2, H, J and K: Gen 1 through Gen 54	38.86	3.95	1.13	0.57
Base Unit PBB6	4.47	0.47	0.11	0.06
Base Units PBB7 through PBB9	11.58	0.95	0.02	0.07
Building A engines (except A Base EG)	38.61	4.81	2.81	0.26
Building B engines (except B Base EG)	38.61	4.81	2.81	0.26
Building D engines (except D Base EG)	38.61	4.81	2.81	0.26
Building F engines (except F Base EG)	38.61	4.81	2.81	0.26
Building G1 engines	38.86	3.95	1.13	0.57
A Base EG (A105)	7.83	0.50	0.13	0.08
B Base EG (B105)	7.83	0.50	0.13	0.08
D Base EG (D105)	4.99	0.62	0.07	0.06
F Base EG (F105)	4.99	0.62	0.07	0.06

(Footnotes are on the following page.)

* NO_2 – Upon DEQ verification of a performance (stack) test, the facility has the option of using a lower emission rate (average of three one-hour test runs x 120%) by undergoing a permit amendment to incorporate the new lower rate.

The hourly NOx emissions are based upon the current BACT limit of 6.0 g/bhp-hr at greater than 90% of the maximum design capacity of the diesel engines. Compliance with the hourly NOx emission limit may be based on testing, if required by DEQ.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

15. **Annual Emergency Engine-Generator Emission Limits** - Combined emissions from all the diesel engine generator sets shown in the tables of the Introduction to this permit to be at each of the group of buildings (bldgs.) indicated below shall not exceed the limits specified below:

	Bldgs. A, B, D, F and G1	Bldgs. G2, H, J and K
Nitrogen Oxides (as NO_2)	86.7 tons/yr	80.4 tons/yr
Carbon Monoxide (CO)	4.5 tons/yr	8.8 tons/yr
Volatile Organic Compounds (VOC)	3.2 tons/yr	2.2 tons/yr
Particulate Matter less than 10 microns (PM-10)	0.8 tons/yr	1.2 tons/yr
Particulate Matter less than 2.5 microns (PM-2.5)	0.8 tons/yr	1.2 tons/yr

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 shall be determined by complying with permit Conditions 6, 7, 8, 9 and 10.
(9 VAC 5-80-1180, 9 VAC 5-50-260)

16. **Visible Emission Limit** - Visible emissions from each diesel engine generator set shall not exceed five percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed ten percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during start-up, shut-down and malfunction. During start-up and shut-down times, visible emissions from each diesel engine generator set shall not exceed ten percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed twenty percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-80-1180, 9 VAC 5-50-260, 9 VAC 5-50-80 and Condition 16 of mNSR permit approved January 29, 2014)

INITIAL COMPLIANCE DETERMINATION

17. **Performance Testing: Stack Test** - An initial performance test shall be conducted for nitrogen oxides (as NO_2) emissions from the exhaust stacks on eight of the Caterpillar Model 3516C engine generator sets (Ref. Nos. Gen 1 through Gen 45) and for nitrogen oxides (as NO_2) and carbon monoxide (CO) on two of the Cummins Model DQKAE engine generator sets (Ref. Nos. Gen 46 through Gen 54), two of the Caterpillar Model 3516C HD engine generator sets (Ref. Nos. Gen2.5-1 through Gen2.5-19), and one of the Cummins Model DQKAN engine generator sets (Ref. Nos. Gen2.5-20 through Gen2.5-22) to determine compliance with the emission limits contained in Condition 14.

    a. Emissions testing of for each pollutant for each selected engine-generator shall consist of three (3) one-hour test runs. The average of the three runs shall be reported as the short-term emission rate for that engine-generator.

    b. Testing shall be conducted with the engines operating at greater than 90% capacity unless multiple load band testing is approved by DEQ.

    c. The tests shall be performed, reported, and demonstrate compliance within sixty days after achieving maximum power demand rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410.

    d. The details of the tests are to be arranged with the Regional Air Compliance Manager of the DEQ's NRO. The permittee shall submit two copies, one paper copy and one on removable electronic media, of the test protocol to the Regional Air Compliance Manager of the 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.

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

    f. Two copies, one paper copy and one on removable electronic media, of the test results shall be submitted to the Regional Air Compliance Manager of the DEQ's NRO within sixty 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)

CONTINUING COMPLIANCE DETERMINATION

18. **Stack Tests** - Upon request by the DEQ, the permittee shall conduct additional performance tests of the emergency engine-generators to demonstrate compliance with the emission limits requirements 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, 9 VAC 5-50-30 G and Condition 18 of mNSR permit approved January 29, 2014)

19. **Visible Emissions Evaluation** - Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations of the emergency engine-generators to demonstrate compliance with the visible emission limits contained in this permit. The details of the VEE shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO.
(9 VAC 5-80-1200, 9 VAC 5-50-30 G and Condition 19 of mNSR permit approved January 29, 2014)

20. **Testing/Monitoring Ports** - The facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested by the DEQ and safe sampling platforms and access shall be provided.
(9 VAC 5-80-1180, 9 VAC 5-50-30 F and Condition 20 of mNSR permit approved January 29, 2014)

RECORDS AND NOTIFICATIONS

21. All correspondence concerning this permit should be submitted to the following address:

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

    (9 VAC 5-50-50, 9 VAC 5-50-410 and Condition 2 of mNSR permit approved January 29, 2014)

22. **Initial Notifications** - The permittee shall furnish written notification to the Regional Air Compliance Manager of the DEQ's NRO of:

    a. The actual date on which construction of each diesel engine generator set (Ref. Nos. Gen1 through Gen 54, Gen2.5-1 through Gen2.5-22 and PBB6 through PBB9) commenced within thirty (30) days after such date. The notification shall include the following:

        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, engine reference number and engine displacement;

iv. Emission control equipment; and

v. Fuel used.

b. The anticipated start-up date for each diesel engine generator set (Ref. No. 1 through 101 and PBB6 through PBB9) postmarked not more than sixty (60) days nor less than thirty (30) days prior to such date.

c. The actual start-up date for each diesel engine generator set (Ref. No. 1 through 101 and PBB6 through PBB9) within fifteen (15) days after such date.

d. The anticipated date of performance tests for each diesel engine generator set (Ref. No. 1 through 101 and PBB6 through PBB9) postmarked at least thirty (30) days prior to such date.

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

23. **Emission Statement** - The owner of a stationary source emitting twenty-five tons per year or more of volatile organic compounds or nitrogen oxides shall submit a completed emission statement to the Regional Air Compliance Manager of the DEQ's NRO by April 15th of each year for the emissions discharged during the previous calendar year. The emission statement shall be prepared and submitted in the appropriate format.
(9 VAC 5-20-160 B and Condition 23 of mNSR permit approved January 29, 2014)

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 engine-generator set is certified to meet the EPA Tier 2 emission standards.

b. A monthly log of the monitoring device data required by Condition 2. The log shall include the dates, engine run times, and the reason for operation as defined in Condition 4.

c. Monthly and annual hours of operation for each diesel engine generator set to verify compliance with the operating limits in Conditions 5, 6, 7, 8, 9 and 10.

d. All fuel supplier certifications.

e. Fuel sampling analyses or certifications indicating the sulfur content of the diesel fuel oil.

f. All VEE and emission stack test reports for each engine-generator.

g. A copy of the maintenance schedule and records of scheduled and unscheduled maintenance and operating training as required by permit Condition 28.

h. Engine information including make, model, serial number, model year, maximum engine power (bhp), and engine displacement for each engine-generator set.

i. The manufacturer's written operating instructions or procedures developed by the owner/operator that are approved by the engine manufacturer for each emergency engine-generator.

j. Records of changes in settings that are permitted by the manufacturer of the engine-generator sets.

Annual compliance shall be determined monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years, unless otherwise noted.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

GENERAL CONDITIONS

25. **Permit Invalidation** - The portion of this permit to construct and operate the emergency engine-generators (Ref. No. 1 through 101 and PBB6 through 8), 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.

    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 and Condition 25 of mNSR permit approved January 29, 2014)

26. **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, included in this permit;

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

e. Fails to comply with the applicable provisions of 9 VAC 5-80-1100 et seq.

(9 VAC 5-80-1210 F and Condition 26 of mNSR permit approved January 29, 2014)

27. **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 of 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 5-80-1180, 9 VAC 5-170-130 and Condition 27 of mNSR permit approved January 29, 2014)

28. **Maintenance/Operating Procedures** - At all times, including periods of startup, shutdown, and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility, including associated air pollution control equipment, in a manner consistent with air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Regional Air Compliance Manager of the DEQ's NRO, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such 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 written 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 5-80-1180 D, 9 VAC 5-50-20 E and Condition 28 of mNSR permit approved January 29, 2014)

29. **Record of Malfunctions** - The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shut-down or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. The records shall be maintained in a form suitable for inspection and maintained for at least two years (unless a longer period is specified in the applicable emission standard) following the date of occurrence. 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.
(9 VAC 5-80-1180 D, 9 VAC 5-20-180 J and Condition 29 of mNSR permit approved January 29, 2014)

30. **Notification for Facility or Control Equipment Malfunction** - In the event that any affected facility or related air pollution control equipment fails or malfunctions in such a manner that may cause excess emissions for more than one hour, the owner shall, as soon as practicable but no later than four daytime business hours after the malfunction is discovered, notify the Regional Air Compliance Manager of the DEQ's NRO of such failure or malfunction and shall within two weeks provide a written statement giving all pertinent facts, including the estimated duration of the breakdown. When the Condition causing the failure or malfunction has been corrected and the facility or control equipment is again in operation, the owner shall notify the Regional Air Compliance Manager of the DEQ's NRO.
(9 VAC 5-80-1180, 9 VAC 5-20-180 C and Condition 30 of mNSR permit approved January 29, 2014)

31. **Notification for Control Equipment Maintenance** - The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ's NRO in case of shutdown or bypassing, or both, of air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour. The intent to shut down or bypass such equipment shall be reported to the Regional Air Compliance Manager of the DEQ's NRO and local air pollution control agency, if any, at least twenty-four hours prior to the planned shutdown. Such prior notice shall include, but is not limited to the following information:

a. Identification of the air pollution control equipment and associated emission unit to be taken out of service, as well as its location, and registration number;

b. The expected length of time that the air pollution control equipment will be out of service;

c. The nature and quantity of emissions of air pollutants likely to occur during the shut-down period;

d. Measures that will be taken to minimize the length of the shut-down or to negate the effect of the outage.

(9 VAC 5-20-180 B and Condition 31 of mNSR permit approved January 29, 2014)

32. **Violation of Ambient Air Quality Standard** - Regardless of any other provision of this permit, the permittee shall, upon request of the DEQ, reduce the level of operation of the facility if the DEQ determines that is necessary to prevent a violation of any primary ambient air quality standard. Under worst case conditions, the DEQ may order that the permittee shut down the facility, if there is no other method of operation to avoid a violation of the ambient air quality standard. The DEQ reserves the right to prescribe the method of determining if a facility will cause such a violation. In such cases, the facility shall not be returned to operation until it and the associated air pollution control equipment are able to operate without violation of any primary ambient air quality standard.
(9 VAC 5-80-180 I, 9 VAC 5-80-1180 and Condition 32 of mNSR permit approved January 29, 2014)

33. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Air Compliance Manager of the DEQ's NRO of the change of ownership within thirty days of the transfer.
(9 VAC 5-80-1240 B and Condition 33 of mNSR permit approved January 29, 2014)

34. **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 and Condition 34 of mNSR permit approved January 29, 2014)

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