NVRO-027-04

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

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Secretary of Natural Resources

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Robert G. Burnley
Director

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## STATIONARY SOURCE PERMIT TO OPERATE

This permit implements the requirements for Reasonably Available Control Technology (RACT)

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

National Reconnaissance Office
Boeing Service Company
14675 Lee Road
Chantilly, Virginia 20153
Registration No.: 71988

is authorized to operate

Five Diesel Engine Driven Electric Generators

located at

14675 Lee Road
Chantilly, Virginia 20153

in accordance with the Conditions of this permit.

Approved on April 16, 2005

Robert G. Burnley, Director
Department of Environmental Quality

Permit consists of 5 pages.
Permit Conditions 1 to 16.
Source Testing Report Format.

## PURPOSE

This permit (i) is for the purpose of implementing the "reasonably available control technology" (RACT) requirements of 9 VAC 5-40-310 and/or 9 VAC 5-40-311 of the Regulations of the Board and (ii) establishes control technology and other requirements for the control of nitrogen oxides ($NO_x$) emissions from the National Reconnaissance Office (NRO) in the Northern Virginia Severe Ozone Nonattainment Area. These RACT requirements shall be the legal and regulatory basis for control of $NO_x$ emissions from the facility.
(9 VAC 5-80-800 C 2 b)

**PERMIT CONDITIONS** - The regulatory reference or authority for each condition is listed in parentheses after each condition.

## PROCESS REQUIREMENTS

1. **Equipment List** – According to 9 VAC 5-40-310, a demonstration of RACT is required and has been made for the following equipment and implemented through the following conditions:

   - Five emergency and peak shaving Caterpillar 3516, diesel engine driven electrical generators (emission units GS-1 through GS-5). Each emission unit (GS-1 through GS5) burns #2 diesel fuel oil and has a maximum rating of 1600 KW electrical output, nominal rating of 2304 horsepower at 1800 RPM, and 16.1 MMBtu/hr heat input.

2. **Testing/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Test ports shall be provided when requested in accordance with the applicable performance specification in 40 CFR Part 60, Appendix A.
(9 VAC 5-80-930)

### Diesel Engine Electrical Generators (Emission Units GS-1 through GS-5)

3. **Compliance Demonstration** – Four initial performance tests shall be conducted on two of the five emission units (emission units GS-1 through GS-5) to determine the nitrogen oxide (NOx) emission rate of the engines. The facility shall conduct the tests to demonstrate compliance with the NOx emission limit in Condition 4 by November 1, 2005. One performance test for each emission unit tested shall be conducted while the generator is operated at 50 to 75 percent of maximum load and the second performance test for each emission unit tested shall be performed while the generator is at 90 percent load or greater. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 using an appropriate EPA Reference Test Method. The schedule for testing is to be arranged with the Air Compliance Manager, Northern Virginia Regional Office. The permittee shall submit an original and one copy of a test protocol at least 30 days prior to testing. An original and two copies of the test results shall be submitted to the Air Compliance Manager, Northern Virginia Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit. During the performance tests, the permittee shall collect engine parametric operating data and, to the extent possible, correlate the data to actual NOx emissions. The permittee shall also

prepare a report, which provides the parametric data collected, the correlation to NOx emissions, and the selection of appropriate operating ranges for each parametric operating parameter. The report shall be submitted to the Air Compliance Manager, Northern Virginia Regional Office along with the test report.
(9 VAC 5-40-30 and 9 VAC 5-80-880)

4. **Emission Limit** – Nitrogen oxide emissions from each #2 diesel fuel oil engine driven electric generator (emission units GS-1 through GS-5) shall not exceed the following:

   39.6 pounds NOx/hour/engine

   Compliance shall be demonstrated by a one time NOx emission test on two of the diesel engine/generator units as outlined in condition 3, and by the proper operation and maintenance of each emission unit GS-1 through GS-5.
   (9 VAC 5-40-310)

5. **RACT** - Nitrogen oxide emissions from the diesel engine/generator units (emission units GS-1 through GS-5) shall be controlled by fuel injection set at three degrees retarded timing. The engines shall be provided with adequate access for inspection.

   Compliance with this condition shall be demonstrated by determining the timing of each engine, on an annual basis, if maintenance has been performed on that engine.
   (9 VAC 5-40-310)

6. **Fuel** - The approved fuels for the five engine driven electric generators (emission units GS-1 through GS-5) is #2 diesel fuel oil. A change in the fuel may require a permit to modify and operate.
   (9 VAC 5-80-850)

7. **Fuel** - The # 2 diesel fuel oil burned in emission units GS1 through GS-5 shall meet the specification below:

   Number 2 diesel oil which meets the ASTM specification for number 1 or 2 fuel oil.

   A change in the fuel may require a permit to modify and operate.
   (9 VAC 5-80-850)

8. **On-Site Records** - The permittee shall maintain records of emission data and operating parameters for emission units GS-1 through GS-5 as necessary to demonstrate compliance with this permit. The content and format of such records shall with the Air Compliance Manager, Northern Virginia Regional Office. These records shall include, but are not limited to, the following:

   a. Date of each engine timing determination, timing of each engine, and documentation of any corrective action including adjustment of engine timing.

   b. Date of maintenance and documentation of any corrective action taken during emission unit maintenance.

c. The name of the #2 diesel fuel oil supplier.

d. The date on which #2 diesel fuel oil was received.

e. The volume of #2 diesel fuel oil delivered in each shipment.

f. A certification that the delivered fuel meets the ASTM specification for #2 diesel fuel oil.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-900)

General Conditions

9. **Maintenance/Operating Procedures** – The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to 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 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. The permittee shall maintain records of the training provided including the names of the trainees, the date of the 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 employees upon request.
(9 VAC 5-50-20 E)

10. **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's 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's 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)

11. **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 Air Compliance Manager of the Northern Virginia Regional Office of the change of ownership within thirty days of the transfer.
(9 VAC 5-80-940)

12. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-860D)

13. Except to the extent that the conditions in this permit may be more stringent, this permit does not supersede or replace any other valid permit, regulatory or statutory requirement. Furthermore, this approval to operate shall not relieve the NRO of the responsibility to comply with all other local, state, and federal regulations, including permit regulations.

14. Once the permit is approved by the U.S. Environmental Protection Agency into the Commonwealth of Virginia State Implementation Plan, the permit is enforceable by EPA and citizens under the federal Clean Air Act.

15. The Board may modify, rewrite, or amend this permit with the consent of NRO, for good cause shown by NRO, or on its own motion provided approval of the changes is accomplished in accordance with Regulations of the Board and the Administrative Process Act (§§ 2.2-4000 et seq.); however, such changes shall not be effective until the changes are approved following the requirements of 40 CFR Part 51(Requirements for Preparation, Adoption, and Submittal of Implementation Plans).

16. Failure by NRO to comply with any of the conditions of this permit shall constitute a violation of a Permit of the Board. Failure to comply may result in a Notice of Violation and civil penalty. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of orders as appropriate by the Board as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.

# SOURCE TESTING REPORT FORMAT

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

Certification
1. Signed by team leader / certified observer (include certification date)
2. Signed by reviewer

Introduction
1. Test purpose
2. Test location, type of process
3. Test dates
4. Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results
1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation
1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

Sampling and Analysis Procedures
1. Sampling port location and dimensioned cross section
2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
5. Brief description of analytical procedures with discussion of deviation from standard methods

Appendix
1. Process data and emission results example calculations
2. Raw field data
3. Laboratory reports
4. Raw production data
5. Calibration procedures and results
6. Project participants and titles
7. Related correspondence
8. Standard procedures