



NVRO-029-04

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,

The Central Intelligence Agency
Washington, D.C. 20505
Registration No.: 71757

is authorized to operate the

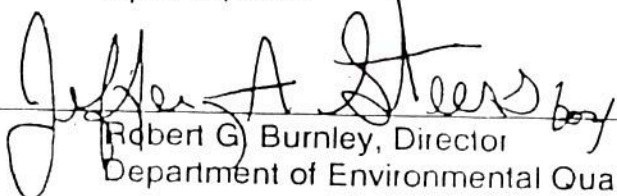
located at

George Bush Center for Intelligence

Routes 123 and 193
McLean, Virginia (Fairfax County)

in accordance with the Conditions of this permit.

Approved on April 16, 2004


Robert G. Burnley, Director
Department of Environmental Quality

Permit consists of 8 pages.
Permit Conditions 1 to 25.
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 Central Intelligence Agency, George Bush Center for Intelligence 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 VAC5-80-800 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:
 - Two Keeler natural gas/distillate oil fired boilers each with a maximum heat input capacity of 62.5×10^6 Btu/hr. These boilers shall be identified by reference numbers 002 and 003.
 - One Cleaver Brooks, model WT600X-BR1, natural gas/distillate oil fired boiler with a maximum heat input capacity of 31.0×10^6 Btu/hr. This boiler shall be identified by reference number 004.
 - One Nebraska Industrial natural gas/distillate oil fired boiler with a maximum heat input capacity of 62.5×10^6 Btu/hr. This boiler shall be identified by reference number 005.
 - Seven Allison model 501-K, diesel fuel oil fired turbine generators each with a maximum heat input capacity of 45.7×10^6 Btu/hr. These generators shall be identified by reference numbers 007 through 013.
 - Two Superior Boilerworks, waste heat recovery, model 4WM 2506-5150-3, natural gas fired boilers with a maximum heat input capacity of 17.5×10^6 Btu/hr each. These boilers shall be identified by reference numbers 041C and 041D.
(9 VAC 5-40-310)

A demonstration of RACT is not required on the following equipment:

- One distillate oil fired emergency generator with a maximum heat input capacity of 0.85×10^6 Btu/hr. This generator shall be identified by reference number 014.
- Two Joy Energy Systems model 2500 TES, solid waste incinerator systems each with a maximum rated capacity 2500 pounds per hour. These incinerators shall be identified by reference numbers 041A and 041B. (9 VAC 5-40-311 C.3.a)

2. **Testing/Monitoring Ports** - The permitted equipment 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)

Boilers (Emission Units 002, 003, 004, and 005)

3. **Initial compliance testing** – Initial performance tests shall be conducted for nitrogen oxides on the dual fueled boilers (Ref # 002, and 004) to determine compliance with the emission limits stated in Condition 4. 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. The details of the tests are to be arranged with the Air Compliance Manager of the Northern Virginia Regional Office. The permittee shall submit an original and one copy of the test protocol at least thirty 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 forty-five days after the test completion and shall conform to the test report format enclosed with this permit. (9 VAC 5-50-50 and 9 VAC 5-80-1200)
4. **Emission Limit** – Nitrogen oxide emissions from each dual-fueled boiler (Ref # 002, 003, 004, and 005) shall not exceed the following:

0.25 lbs./MMBtu

Compliance with the emission limit shall be demonstrated as provided in Condition 3 no later than November 1, 2005.
(9 VAC 5-40-280, and 9 VAC 5-40-311)

5. **Fuel** - The approved fuels for the four dual-fueled boilers (Ref # 002-005) are natural gas and distillate oil. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-850)

6. **Fuel** - The fuels shall meet the specifications below:

Natural gas with a minimum heat content of 1000 Btu/cf Higher Heating Value (HHV)

Distillate Oil which meets the ASTM specification for number 1 or 2 fuel oil:

Maximum sulfur content per shipment:

0.5%

Minimum heat content:

138,000 Btu/gallon

(9 VAC 5-80-850)

Turbine Generators (Emission Units 007-013)

7. **Fuel** - The approved fuel for the diesel fired turbine generators (Ref # 007-013) is diesel fuel oil. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-850)

8. **Fuel** - The diesel fuel oil shall meet the specifications below:

DISTILLATE/DIESEL OIL which meets the ASTM specification for number 1 or 2 fuel oil:

Maximum sulfur content per shipment: 0.5%.

(9 VAC 5-80-850)

9. **Emission Limit** - Nitrogen oxide emissions from the diesel fired turbine generators (Ref # 007-013) shall not exceed the following:

188 ppm_{dv} corrected to 15% oxygen

35.5 lbs./hr. (for each unit)

37.5 tons/yr. (for all 7 units)

Compliance with the concentration and lb/hr limit shall be demonstrated as provided in Condition 12 no later than November 1, 2005.
(9 VAC 5-40-280 and 9 VAC 5-40-311)

10. **Operating Hours** - The diesel fired turbine generators (Ref # 007-013) shall not operate more than 2,100 combined hours per year, calculated monthly as the sum of the previous consecutive twelve-month period.
(9 VAC 5-80-850)

11. **Turbine Tuning** - NO_x RACT for the diesel fired turbine generators (Ref # 007-013) shall be the development of a plan providing the schedule and procedure for tuning. The plan shall include initial tuning, to take place prior to source testing, and the future frequency for tuning. The tuning of each diesel fired turbine

generator shall minimize the formation of NOx emissions. The plan shall be submitted to the Air Compliance Manager and must be approved by the DEQ and updated as necessary.

12. **Initial compliance testing** – Initial performance tests shall be conducted for nitrogen oxides on the diesel-fired turbine generators (Ref # 007-013) to determine compliance with the emission limits stated in Condition 9. 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. The details of the tests are to be arranged with the Air Compliance Manager of the Northern Virginia Regional Office. The permittee shall submit a test protocol at least thirty days prior to testing. Two copies of the test results shall be submitted to the Air Compliance Manager Northern Virginia Regional Office within forty five days after the test completion and shall conform to the test report format enclosed with this permit. The results of the stack tests may be used to revise the emission standard in Condition 10.
(9 VAC 5-50-50 and 9 VAC 5-80-1200)

Heat Recovery Boilers (Emission Units 041C and 041D)

13. **Fuel** - The approved fuel for the heat recovery boilers (Ref # 041C and 041D) is natural gas. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-850)
14. **Fuel** - The natural gas shall meet the specifications below:

Natural gas with a minimum heat content of 1000 Btu/cf Higher Heating Value (HHV)
(9 VAC 5-80-850)
15. **Emission Limits** – When firing natural gas, the nitrogen oxide emissions (in combination) from the heat recovery boilers (Ref # 041C and 041D) shall not exceed the following:

0.20 lbs./MMBtu (each) 7 lbs./hr. (combined) 30.66 tons/yr. (combined)

Compliance with the lb/MMBtu and lb/hr emission limits shall be demonstrated as provided in Condition 16 no later than November 1, 2005.
(9 VAC 5-40-280, and 9 VAC 5-40-311)
16. **Initial Compliance Testing** – Initial performance tests shall be conducted for nitrogen oxides on the heat recovery boilers (Ref # 041C and 041D) to determine compliance with the emission limits stated in Condition 15. 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. The details of the tests are to be arranged with the Air Compliance Manager of the Northern Virginia Regional Office. The permittee shall submit an original and one copy of the test protocol at least thirty 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 forty five days after the test completion and shall conform to the test report format enclosed with this permit.

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

Facility Wide Conditions

17. **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 Air Compliance Manager, Northern Virginia Regional Office. These records shall include, but are not limited to, the following:
- a. The total amount of nitrogen oxides, expressed as nitrogen dioxides (NO₂) emitted from the facility, calculated monthly as the sum of the previous consecutive twelve months.
 - b. Annual consumption of distillate oil and hours of operation for the diesel fuel oil fired turbine generators (Ref# 007-013) in gallons, calculated monthly as the sum of the previous consecutive twelve month period.
 - c. Annual consumption of natural gas in cubic feet, and distillate oil, for each fuel burning unit along with the associated emissions for each unit shall be calculated monthly as the sum of the previous consecutive 12 month period.
 - d. The name of the fuel supplier.
 - e. The date on which the distillate fuel oil was received.
 - f. The volume of distillate fuel oil delivered in the shipment.
 - g. A statement that the diesel fuel oil complies with the American Society for Testing and Materials (ASTM) specifications D975-02 for numbers 1 or 2 low sulfur diesel fuel oil.
 - h. A statement that the sulfur content is less than or equal to that allowed for the type of fuel.
 - i. The sulfur content of the diesel fuel oil.

- j. The steps taken for tuning the diesel fired turbine generators, and the results of the tuning.

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

18. **Maintenance/Operating Procedures** – 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 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)

19. **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)

20. **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 DEQ's Northern Virginia Regional Office of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-940)
21. **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)
22. 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 Central Intelligence Agency of the responsibility to comply with all other local, state, and federal regulations, including permit regulations.
23. 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.
24. The Board may modify, rewrite, or amend this permit with the consent of the Central Intelligence Agency, for good cause shown by the Central Intelligence Agency, 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).
25. Failure by the Central Intelligence Agency 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_____

