



NVRO-024-04

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

Jeffery A. Steers
Regional Director

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,

Washington Gas Company
Registration No.: 72277
County-Plant ID No.: 51-059-0723

is authorized to operate

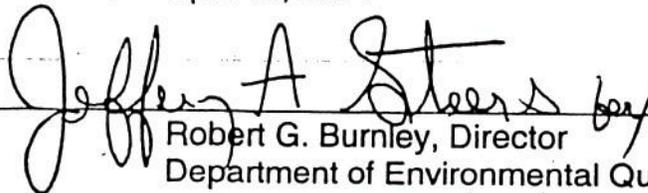
a natural gas pipeline peak shaving facility

located at

5701 Rolling Road
Springfield, VA. 22151

in accordance with the Conditions of this permit.

Approved on April 16, 2004


Robert G. Burnley, Director
Department of Environmental Quality

Permit consists of 7 pages.
Permit Conditions 1 to 17.

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 Washington Gas Ravensworth Station facility in the Northern Virginia 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 for the following equipment and implemented through the remaining conditions of this permit:

- Three natural gas-fired, Ingersoll Rand model KVG engine-driven compressors rated at 880 bhp (Ref. Nos. 1 - 3);
- Four natural gas-fired, Ingersoll Rand model KVS engine-driven compressors rated at 1,320 bhp (Ref. Nos. 4 - 7);
- One natural gas-fired, Ingersoll Rand model KVSR engine-driven compressor rated at 1,600 bhp (Ref. No. 8);
- Two natural gas-fired, Ingersoll Rand model 412KVS engine-driven compressors rated at 2,000 bhp (Ref. Nos. 9 and 10);
- One natural gas-fired, Caterpillar model G3516 electrical generator rated at 1,040 kW (1,462 bhp engine power output) (Ref. No.12);
- Three natural gas-fired, Erie City boilers rated at 28 million Btu/hr heat input (Ref. Nos. 16 - 18);
- One natural gas-fired, Cleaver Brooks boiler rated at 39 million Btu/hr heat input (Ref. No. 19).

(9 VAC 5-40-310)

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

- One natural gas-fired, Waukesha model P-1 engine rated at 400 bhp (Ref. No. 11);
- One natural gas-fired, Waukesha water pump rated at 59 bhp (Ref. No. 14);
- One diesel-fired, Cummins fire pump rated at 182 bhp (Ref. No.15);
- One natural gas-fired, Hydrotherm hot water heater rated at 0.25 million Btu/hr heat input (Ref. No. 20);

(9 VAC 5-40-311 C 3)

2. **Compressor Engine Nitrogen Oxides (NO_x) Emissions Control** – NO_x emissions from each of the compressor engines (Ref. Nos. 1-10) shall be controlled by a combination of engine tuning and good combustion practices. ~~Tuning shall involve physical adjustments of engine operating and combustion process parameters for the purposes of reducing NO_x emissions, without significant increases in carbon monoxide emissions. Good combustion practices shall involve the continuous operation of the engines at optimum performance by maintaining operating parameters within ranges established during tuning and performance testing events, provided in Condition 9, which coincide with reduced NO_x emissions. Prior to the tuning events, the permittee shall develop a tuning plan, which describes the activity to be involved in the tuning event. The plan shall provide the rationale for optimizing specific parameters and their significance in reducing NO_x. The plan shall be submitted to the Air Permit Manager and Air Compliance Manager, Northern Virginia Regional Office at least 30 days prior to the performance test required in Condition 9.~~ (9 VAC 5-40-310 A and 9 VAC 5-80-850)

3. **Compressor Engine, Boiler and Caterpillar Generator NO_x Emissions Control** – NO_x emissions from the compressor engines (Ref. Nos. 1-10), boilers (Ref. Nos. 16-19) and Caterpillar generator (Ref. No. 12) shall be controlled by proper operation and maintenance. Operators shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at minimum. The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.

(9 VAC 5-40-310 A and 9 VAC 5-80-850)

OPERATIONAL LIMITATIONS

4. **Fuel** - The approved fuel for the compressor engines (Ref. Nos. 1-10), boilers (Ref. Nos. 16-19) and electrical generator (Ref. No. 12) is natural gas. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-850)

EMISSIONS LIMITATIONS

5. **Compressor Engine NO_x Emission Limits** – A NO_x emission limit for each model of compressor engine will be established based on the results of the performance tests required in Condition 9. This permit will be modified within 180 days of the submittal of the test report required in Condition 9 to accommodate the NO_x emission limits, but no later than November 1, 2005. Until such time as this permit is modified to establish the emission limits based on the performance test required in Condition 9, each compressor engine shall be operated and maintained in accordance with the manufacturers' specifications and, to the extent practicable, in a manner consistent with good air pollution control practices for minimizing emissions.
(9 VAC 5-80-850 and 9 VAC 5-40-311)
6. **Boiler NO_x Emission Limit** - NO_x emissions from each boiler (Ref. Nos. 16-19) shall not exceed 0.20 lbs/MMBtu. Compliance with this emission limit shall be demonstrated as provided in Condition 10 no later than November 1, 2005.
(9 VAC 5-80-850 and 9 VAC 5-40-311)
7. **Generator NO_x Emission Limit** - NO_x emissions from the Caterpillar generator (Ref No. 12) shall not exceed 1.5 g/bhp-hr.
(9 VAC 5-80-850 and 9 VAC 5-40-311)
8. **Requirements for Exempt Emission Units** - Emission units listed in Condition 1 for which a RACT demonstration is not required shall at all times, including periods of startup and shutdown, be maintained and operated to the extent possible in a manner consistent with good air pollution control practices of minimizing emissions.
(9 VAC 5-40-20 E)

TESTING

9. **Compressor Engine Performance Testing** – The permittee shall conduct two sets of performance tests to measure NO_x emissions in the exhaust stack of one of each model of compressor engine. The first set of tests, to be conducted prior to the tuning event, shall be for the purpose of establishing a baseline NO_x emission rate for each unit tested. The second set of tests, to be conducted following the tuning event, shall be used to evaluate the effectiveness of the tuning event and to correlate

specific engine operating parameters to emissions. The first set of tests shall be performed no later than December 31, 2004 and all tests shall be completed by January 30, 2005. 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. The permittee shall, during the performance testing, collect data on engine operating parameters to be adjusted, as provided in Condition 2, and, to the extent possible, correlate the data to actual NO_x emissions. The permittee shall also prepare a report, which provides the parametric data collected, the correlation to NO_x emissions, and the selection of appropriate operating ranges for each 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)

10. **Boiler Performance Testing** – The permittee shall perform tests to measure NO_x emissions in the exhaust stack of two of four boilers (Ref. Nos. 16-19) to demonstrate compliance with the emission limit in Condition 6. The tests shall be performed no later than December 31, 2004. 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.
(9 VAC 5-40-30 and 9 VAC 5-80-880)

RECORDS

11. **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:
- a. The tuning plan required in Condition 2.

- b. The report detailing results of the tuning event, the parametric data collected, the correlation of operating parameters to emissions, and the selection of operating ranges of the parameters as required in Condition 9.
- c. The performance test reports for the compressor engines, including the results of both pre- and post-tuning.
- d. The performance test report for the boilers.
- e. Records of compressor engine, boiler and Caterpillar generator operator training, maintenance schedules and record of maintenance performed as required in Condition 3.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-40-390 and 9 VAC 5-80-900)

GENERAL CONDITIONS

12. **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)

13. **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, Northern Virginia Regional Office of the change of ownership within thirty days of the transfer.
(9 VAC 5-80-940)

14. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-860 D)
15. 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 Washington Gas Company of the responsibility to comply with all other local, state, and federal regulations, including permit regulations.
- ~~16. 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.~~
17. The Board may modify, rewrite, or amend this permit with the consent of Washington Gas Company, for good cause shown by Washington Gas Company, 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).
18. Failure by Washington Gas Company 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.

