



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 10009, Richmond, Virginia 23240

Fax (804) 698-4500 TDD (804) 698-4021

<http://www.deq.state.va.us>

Dennis H. Treacy  
Director

(804) 698-4000  
1-800-592-5482

James S. Gilmore, III  
Governor

John Paul Woodley, Jr.  
Secretary of Natural Resources

### COMMONWEALTH OF VIRGINIA OPERATING PERMIT STATIONARY SOURCE PERMIT TO OPERATE

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

United States Marine Corps Base  
Marine Corps Combat Development Command  
Facilities Division  
Quantico, Virginia 22134  
Registration No. 70267  
County-Plant No. 153-0010

is authorized to operate

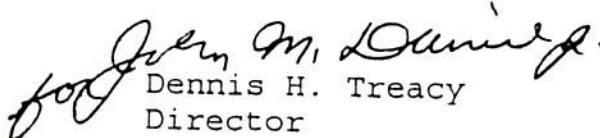
a United States Marine Corps Base

located at

United States Marine Corps Base, Quantico  
Quantico, Virginia

in accordance with the Conditions of this permit and all other applicable permits and regulations of the State Air Pollution Control Board.

Approved on May 24, 2000.

  
Dennis H. Treacy  
Director

Permit consists of 8 pages.  
Permit Conditions 1 to 16.

PERMIT CONDITIONS - the regulatory reference and authority for the condition is listed in parentheses ( ) after each condition.

1. This permit establishes source-specific emission standards and/or other requirements to implement reasonably available control technology (RACT) as required by 9 VAC 5-40-310 and 9 VAC 5-40-311 of the State Air Pollution Control Board's Regulations.  
(9 VAC 5-80-800 C.2.b of State Regulations)
2. Equipment subject to 9 VAC 5 Chapter 40, Article 4 and RACT requirements pursuant to Section 182 of the federal Clean Air Act consists of:
  - Two (2) Combustion Engineering residual oil and coal-fired boilers located in Building 2012 (central heating plant), identified as Boilers No. 1 and No. 2, each with a maximum heat input capacity of  $50.0 \times 10^6$  Btu/hr;
  - One (1) Riley residual oil and coal-fired boiler located in Building 2012 (central heating plant), identified as Boiler No. 3, with a maximum heat input capacity of  $55.0 \times 10^6$  Btu/hr;
  - Two (2) Vogt residual oil-fired boilers located in Building 2012 (central heating plant), identified as Boilers No. 4 and No. 5, each with a maximum heat input capacity of  $56.0 \times 10^6$  Btu/hr;
  - One (1) Riley residual oil and coal-fired boiler located in Building 2012 (central heating plant), identified as Boiler No. 6, with a maximum heat input capacity of  $120.0 \times 10^6$  Btu/hr;
  - Two (2) Nebraska distillate oil-fired boilers located in Building 2012 (central heating plant), identified as temporary boilers no. T-1 and no. T-2, each with a maximum heat input capacity of  $98.3 \times 10^6$  Btu/hr;
  - Two (2) Iron Fireman Model 35-5-400 distillate oil-fired boilers located in Building 2077, each with a maximum heat input capacity of  $3.35 \times 10^6$  Btu/hr;
  - One (1) distillate oil-fired boiler located in Building 2645 with a maximum heat input capacity of  $3.2 \times 10^6$  Btu/hr;

- One (1) Cleaver-Brooks Model FLX100 distillate oil-fired boiler located in Building 3247 with a maximum heat input capacity of  $4.67 \times 10^6$  Btu/hr;
- Two (2) Heat Energy Systems Model HN500-PE-2400 distillate oil-fired hot water heat exchangers located in Building 3247, each with a maximum heat input capacity of  $2.4 \times 10^6$  Btu/hr;
- Two (2) Spencer distillate oil-fired boilers located in Building 3301, each with a maximum heat input capacity of  $3.601 \times 10^6$  Btu/hr;
- One (1) Iron Fireman Model 35-5-240 distillate oil-fired boiler located in Building 3400 with a maximum heat input capacity of  $1.606 \times 10^6$  Btu/hr;
- One (1) Burnham Model 4FW450GP distillate oil-fired boiler located in Building 3500 with a maximum heat input capacity of  $3.015 \times 10^6$  Btu/hr;
- One (1) Cleaver-Brooks Model CB100 distillate oil-fired boiler located in Building 24003 with a maximum heat input capacity of  $1.255 \times 10^6$  Btu/hr;
- One (1) Cleaver-Brooks Model CB100 distillate oil-fired boiler located in Building 24008 with a maximum heat input capacity of  $1.255 \times 10^6$  Btu/hr;
- One (1) Burnham Model 4FW450A5 distillate oil-fired boiler located in Building 24126 with a maximum heat input capacity of  $3.015 \times 10^6$  Btu/hr;
- Two (2) International Boiler Works Model TJW-C-20 residual oil-fired boilers located in Building 24162 (Camp Barrett Heating Plant), each with a maximum design heat input capacity of  $22.0 \times 10^6$  Btu/hr;
- One (1) PVI Industries Model 1500G750A-TPO distillate oil-fired boiler located in Building 26107 with a maximum heat input capacity of  $1.2 \times 10^6$  Btu/hr;
- One (1) Burnham Model 4FW34550 distillate oil-fired boiler located in Building 27200 with a maximum heat input capacity of  $2.15 \times 10^6$  Btu/hr;

- One (1) York-Shipley Model 5PHV602 distillate oil-fired boiler located in Building 27219 with a maximum heat input capacity of  $2.009 \times 10^6$  Btu/hr;
  - One (1) Burnham Model FDO/15 distillate oil-fired boiler located in Building 27240 with a maximum heat input capacity of  $2.937 \times 10^6$  Btu/hr;
3. For the residual oil and coal-fired boilers no. 1 and no. 2 contained in Building 2012 (the central heat plant),  $\text{NO}_x$  RACT shall be achieved by the already implemented replacement of the burner packages to enable the units to burn distillate oil only. The burner replacement packages shall increase the heat input capacity of each boiler from  $50.0 \times 10^6$  Btu/hr to  $61.13 \times 10^6$  Btu/hr. The  $\text{NO}_x$  emissions from each boiler shall not exceed the emissions limit of  $0.25 \text{ lbs}/10^6$  Btu heat input averaged on a daily basis.  
(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)
4. The emissions controls and limitations of the State Air Pollution Control Board permit to modify and operate that was issued on December 02, 1993, as amended on September 29, 1997, were determined to represent the required best available control technology (BACT), and therefore, for emissions of nitrogen oxides ( $\text{NO}_x$ ) are no less stringent than RACT. Consequently, for the purposes of this permit the  $\text{NO}_x$  emissions from the residual oil and coal-fired boiler no. 3 contained in Building 2012 (the central heat plant) shall be controlled by the already implemented replacement of the boiler with a new natural gas and distillate oil-fired unit with a maximum rated heat input capacity of  $84.0 \times 10^6$  Btu/hr equipped with low  $\text{NO}_x$  burners. The  $\text{NO}_x$  emissions (as  $\text{NO}_2$ ) from boiler no. 3 shall not exceed  $0.09 \text{ lbs}/10^6$  Btu heat input averaged on a daily basis while firing natural gas, and  $0.10 \text{ lbs}/10^6$  Btu heat input averaged on a daily basis while firing distillate oil.  
(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)
5. The emissions controls and limitations of the State Air Pollution Control Board permit to modify and operate that was issued on December 02, 1993, as amended on September 29, 1997, were determined to represent the required best available control technology, and therefore, for emissions of nitrogen oxides ( $\text{NO}_x$ ) are no less stringent than RACT. Consequently, for the purposes of this permit the  $\text{NO}_x$  emissions from the residual oil-fired boilers no. 4 and no. 5 contained in Building 2012 (the central heat plant) shall be controlled by the already implemented replacement of each unit with new

natural gas and distillate oil-fired units each equipped with low NO<sub>x</sub> burners and flue gas recirculation. Each new boiler shall have a maximum heat input capacity rating of 114.0 x 10<sup>6</sup> Btu/hr, and shall not exceed NO<sub>x</sub> emissions (as NO<sub>2</sub>) of 0.10 lbs/10<sup>6</sup> Btu heat input averaged on a daily basis while burning either natural gas or distillate oil.

(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)

6. The emissions controls and limitations of the State Air Pollution Control Board permit to modify and operate that was issued on December 02, 1993, as amended on September 29, 1997, were determined to represent the required best available control technology (BACT), and therefore, for emissions of nitrogen oxides (NO<sub>x</sub>) are no less stringent than RACT. Consequently, for the purposes of this permit the NO<sub>x</sub> emissions from the residual oil and coal-fired boiler no. 6 contained in Building 2012 (the central heat plant) shall be controlled by the already implemented permanent removal of the unit from service.  
(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)
7. The emissions controls and limitations of the State Air Pollution Control Board permit to modify and operate that was issued on December 02, 1993, as amended on September 29, 1997, were determined to represent the required best available control technology, and therefore, for emissions of nitrogen oxides (NO<sub>x</sub>) are no less stringent than RACT. Consequently, for the purposes of this permit the NO<sub>x</sub> emissions from the distillate oil-fired temporary Nebraska boilers no. T-1 and no. T-2 contained in Building 2012 (the central heat plant) shall be controlled by the already implemented permanent removal of each unit from service.  
(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)
8. For the Cleaver-Brooks Model CB100 distillate oil-fired boiler located in Building 24003, NO<sub>x</sub> RACT shall be the already implemented permanent removal of the unit from service.  
(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)
9. For the two (2) International Boiler Works Model TJW-C-20 residual oil-fired boilers located in Building 24162 (Camp Barrett Heating Plant), each with a maximum design heat input capacity of 22.0 x 10<sup>6</sup> Btu/hr, NO<sub>x</sub> RACT shall include the replacement of the current nozzles with new nozzles designed to minimize NO<sub>x</sub> emissions. The nozzles shall be of a type which the manufacturer specifies at least a 10 percent reduction in NO<sub>x</sub> emissions is achievable. The new nozzles shall be installed in each boiler by May 01, 2001. In

addition, the boilers shall be operated and maintained in accordance with manufacturer's specifications and good air pollution control practices.  
(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)

10. For the following units, NO<sub>x</sub> RACT shall be the operation and maintenance of the unit in accordance with manufacturer's specifications and good air pollution control practices:

- Two (2) Iron Fireman Model 35-5-400 distillate oil-fired boilers located in Building 2077, each with a maximum heat input capacity of  $3.35 \times 10^6$  Btu/hr;
- One (1) distillate oil-fired boiler located in Building 2645 with a maximum heat input capacity of  $3.2 \times 10^6$  Btu/hr;
- One (1) Cleaver-Brooks Model FLX100 distillate oil-fired boiler located in Building 3247 with a maximum heat input capacity of  $4.67 \times 10^6$  Btu/hr;
- Two (2) Heat Energy Systems Model HN500-PE-2400 distillate oil-fired hot water heat exchangers located in Building 3247, each with a maximum heat input capacity of  $2.4 \times 10^6$  Btu/hr;
- Two (2) Spencer distillate oil-fired boilers located in Building 3301, each with a maximum heat input capacity of  $3.601 \times 10^6$  Btu/hr;
- One (1) Iron Fireman Model 35-5-240 distillate oil-fired boiler located in Building 3400 with a maximum heat input capacity of  $1.606 \times 10^6$  Btu/hr;
- One (1) Burnham Model 4FW450GP distillate oil-fired boiler located in Building 3500 with a maximum heat input capacity of  $3.015 \times 10^6$  Btu/hr;
- One (1) Cleaver-Brooks Model CB100 distillate oil-fired boiler located in Building 24008 with a maximum heat input capacity of  $1.255 \times 10^6$  Btu/hr;
- One (1) Burnham Model 4FW450A5 distillate oil-fired boiler located in Building 24126 with a maximum heat input capacity of  $3.015 \times 10^6$  Btu/hr;

- One (1) PVI Industries Model 1500G750A-TPO distillate oil-fired boiler located in Building 26107 with a maximum heat input capacity of  $1.2 \times 10^6$  Btu/hr;
- One (1) Burnham Model 4FW34550 distillate oil-fired boiler located in Building 27200 with a maximum heat input capacity of  $2.15 \times 10^6$  Btu/hr;
- One (1) York-Shipley Model 5PHV602 distillate oil-fired boiler located in Building 27219 with a maximum heat input capacity of  $2.009 \times 10^6$  Btu/hr;
- One (1) Burnham Model FDO/15 distillate oil-fired boiler located in Building 27240 with a maximum heat input capacity of  $2.937 \times 10^6$  Btu/hr;

A copy of all relevant operation, maintenance, and specification documentation as provided by the manufacturer for each unit and device shall be maintained on the premises of the facility. Each unit shall be operated and maintained in adherence with that documentation to the degree appropriate and practicable with the intention of minimizing NO<sub>x</sub> emissions.

(9 VAC 5-40-310 and 9 VAC 5-40-311 of State Regulations)

11. Exempted from the requirements of 9 VAC 5 Chapter 40, Article 4 for both volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) are the following:

- a. Process operations with a process weight rate capacity less than 100 pounds per hour;
- b. Any combustion unit using solid fuel with a maximum heat input of less than 350,000 Btu per hour;
- c. Any combustion unit using liquid fuel with a maximum heat input of less than 1,000,000 Btu per hour;
- d. Any combustion unit using gaseous fuel with a maximum heat input of less than 10,000,000 Btu per hour.

(9 VAC 5-40-240 of State Regulations)

12. Equipment specifically exempted from demonstrating RACT for NO<sub>x</sub> includes the following:

- a. Any stationary internal combustion engine with a rated capacity of less than 450 hp of output power;

- b. Any incinerator with a maximum capacity of less than 50 tons of waste per day;
- c. Any incinerator or thermal or catalytic oxidizer used exclusively as an air pollution control equipment;
- d. Any generator used solely to supply emergency power to buildings during periods when normal power supplies are interrupted and during periods of scheduled maintenance.

(9 VAC 5-40-311 of State Regulations)

13. At all times, including periods of startup, shutdown and malfunction, all units or processes shall be maintained and operated, to the extent practicable, in a manner consistent with air pollution control practices for minimizing emissions.  
(9 VAC 5-40-20 and 9 VAC 5-170-160 of State Regulations)

14. Methods for demonstrating and reporting compliance with the conditions of this permit, including the periodic demonstration of compliance with the emission limits of this permit shall be incorporated in the federal operating (Title V) permit for this facility. The records necessary to meet these requirements shall be as described in the federal operating permit and shall be retained by the permittee for a minimum of five years from the time that the relevant data was collected.  
(9 VAC 5-80-110 of State Regulations)

15. In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to the Regional Compliance Manager.  
(9 VAC 5-80-940 of State Regulations)

16. A copy of this permit shall be maintained on the premises of the facility to which it applies.  
(9 VAC 5-80-860 of State Regulations)