

**AIR EMISSIONS
NOTICE OF CONSTRUCTION APPROVAL ORDER
CONDITIONS AND RESTRICTIONS**

REGULATORY AUTHORITY:

Pursuant to the Washington State Department of Ecology (Ecology) General Regulations for Air Pollution Sources, Chapter 173-400 Washington Administrative Code (WAC), and Controls for New Sources of Toxic Air Pollutants, Chapter 173-460 WAC, Ecology finds the following:

FINDINGS:

1. The United States Department of Energy proposes to modify their existing facility (Hanford) located in Richland, Washington.
2. A Notice of Construction (NOC) application was submitted on September 18, 2012 and funded on September 24, 2012. The application was found to be complete on October 30, 2012.
3. Hanford is an existing major stationary source.
4. The proposed project consists of buying and operating up to 10 diesel fired water heaters with high efficiency burners to support single shell tank (SST) waste retrieval by helping to dissolve and break up solids.
5. Hanford is located in a Class II Area designated as “attainment” for the purpose of NOC permitting for all pollutants.
6. Emissions of criteria pollutants from the proposed project are below the Prevention of Significant Deterioration Significant Emission Rates.
7. The proposed project has a self-imposed annual limitation of 2,500 cumulative operation hours.
8. The proposed project will use ultra-low sulfur diesel (less than 0.0015% or 15 ppm).
9. Criteria air pollutant emissions from the proposed project, with self-imposed operation hour limitation, are below the levels in WAC 173-400-110(5) Table 110(5).
10. No Toxic Air Pollutants (TAPs) from the proposed project are identified by the manufacturer of the diesel water heaters for Small Quantity Emission Rates (SQERs) of WAC 173-460-150.
11. Best Available Control Technology (BACT) and Toxics-Best Available Control Technology (T-BACT) for this project have been determined to be the use high efficiency burners, ultra-low sulfur diesel, and limitation of hours of operation.
12. The proposed project, if constructed and operated as herein required, will provide BACT and T-BACT.

13. The proposed project, if operated as herein required, will be in accordance with applicable rules and regulations, as set forth in Chapter 173-400 WAC and Chapter 173-460 WAC, and the operation thereof will not result in ambient air quality standards being exceeded.

14. The project will have no significant impact on air quality.

THEREFORE, IT IS ORDERED that the project as described in said NOC application is approved for construction, installation, and operation, provided compliance with the conditions and restrictions described below. This ORDER will be identified as NOC ORDER **DE12NWP-003**.

1.0 APPROVAL CONDITIONS

1.1 Effective Date

The effective date of this authorization will be that as signed in Section 3.0. All references to procedures or test methods will be to those in effect as of the effective date of this ORDER.

1.2 Operational Limits

- 1.2.1 Maximum number of units is 10.
- 1.2.2 Heating capacity is normalized to 2.5 million Btu (MBtu) per hour per unit.
- 1.2.3 Maximum accumulated heating capacity is 25 MBtu/hour.

1.3 Emission Limits

- 1.3.1 Emissions of Nitrogen oxides (NO_x) will not exceed 0.78 tons per year.
- 1.3.2 Emissions of Carbon Monoxide (CO) will not exceed 0.22 tons per year.
- 1.3.3 Emissions of Volatile Organic Carbon (VOC) will not exceed 0.08 tons per year.
- 1.3.4 Emissions of particulate matter (PM) will not exceed 0.08 tons per year.
- 1.3.5 Emission of sulfur dioxide (SO₂) is not to exceed 1.63 tons per year.

1.4 Compliance Demonstration

- 1.4.1 Compliance with Approval Conditions 1.2.1, 1.2.2, and 1.2.3 will be demonstrated by:
 - 1.4.1.1 Completion of Table 1.

Table 1 Direct Fired Diesel Water Heater Summary

Unit Identification	MBtu/hour (Actual)	MBtu/hour (Standard)	Hour Meter Multiplier
TBD	2.5	2.5	1.0
TBD	2.5	2.5	1.0
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
TBD	TBD	2.5	TBD
Total MBtu/hour	5.0	25.0	N/A

1.4.2 Compliance with Approval Conditions 1.3.1, 1.3.2, 1.3.3 and 1.3.4 will be demonstrated by:

1.4.2.1 Diesel Fired Water Heater Limitation

- 1.4.2.1.1 Use of diesel fired water heaters with high efficiency burners.
- 1.4.2.1.2 Operation of no more than 10 diesel fired water heaters at any given time.

1.4.2.2 Operational Limitation

- 1.4.2.2.1 All recommended operation and equipment maintenance provisions supplied by the manufacturer(s) will be current.
- 1.4.2.2.2 A non-resettable hour meter will be installed on each diesel fueled water heater and operated.
- 1.4.2.2.3 Operational hours of use for all diesel fueled water heaters under this order:

- 1.4.2.2.3.1 Will not result in a ratio exceeding 1.0 as calculated by **Error! Reference source not found.**
- 1.4.2.2.3.2 Equation 1 will be calculated monthly for the previous 12-month period.

Equation 1 Operational Hours Limitation Calculation

$$\frac{\sum_{i=1}^n \frac{\text{Heating Capacity (MBtu / hour)}_i \cdot (\text{Water Heater Operating Hours})_i}{2.5\text{MBtu / hour}}}{2,500 \text{ hours}} \leq 1.0$$

Where :

i = Unique water heater identifier ,

n = Total number of water heaters employed over 12 month period ,

Water Heater Operating Hours shall be calculated monthly for a 12 month period

1.4.3 Compliance with Approval Condition 1.3.5 will be demonstrated by use of ultra-low sulfur fuel containing no greater than 0.0015 weight percent sulfur (15 parts per million by weight).

2.0 NOTIFICATIONS AND SUBMITTALS

2.1 Addressing

Notifications and reports required under this Approval Conditions must be sent to:

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, Washington 99354

2.2 Operational Notice

Operational notification must be made prior to initial operation of each unit. Notification must include information required to complete Table 1. This notification may be sent by email to the Nuclear Waste Program or to the address listed in section 2.1.

2.3 Recordkeeping

Operations and Maintenance (O&M) manuals for all equipment, procedures, and controls associated with the proposed activities that have the potential to affect emissions to the atmosphere will be followed. Manufacturer's instructions may be referenced. The O&M manuals will be updated to reflect any modifications of the process or operating procedures. Copies of the O&M manuals will be available to Ecology upon request.

Specific records will be kept on the Hanford Site by the Permittee and made available for inspection by Ecology upon request. The records must be organized in a readily accessible manner and cover a minimum of the most recent sixty (60) month period, except when otherwise specified. The records to be kept must include the following:

1. Manufacturer's documentation for each hot water heater pursuant to Approval Condition 1.4.2.1.1. Each document will be retained for the life of each unit.
2. Maintenance records for maintenance conducted pursuant to Approval Condition 1.4.2.2.1.
3. Twelve-month cumulative operating hours for each engine, calculated monthly.
4. Calculations prepared pursuant to Approval Conditions 1.4.2.2.3 and subparts.
5. Maintain vendor documentation showing fuel quality.

2.4 Reporting

1. Emissions will be compiled into estimates and reported annually, beginning as part of the calendar year 2013 non-radioactive inventory of airborne emissions, pursuant to WAC 173-400-105.
2. Monthly operating hours per unit and cumulative annual operating hours on a month-by-month basis will be reported annually, beginning as part of the calendar year 2013 non-radioactive inventory of airborne emissions, pursuant to WAC 173-400-105.

3.0 APPROVAL ORDER AND RESTRICTIONS

Operation of the direct diesel fired water heaters is only intended for use during waste retrieval operations to liquefy the waste from single shell tanks so it can be pumped into double shell tanks. The tank farms are located on the Hanford Site in the 200 East and West Area Tank Farms and are identified in the NOC application.

4.0 GENERAL CONDITIONS

All plans, specifications, and other information submitted to Ecology relative to this project and any authorizations or approvals or denials in relation thereto shall be incorporated herein and made a part thereof.

- 4.1 Availability of Order and O&M Manual:** Legible copies of this Order and the O&M manual shall be available to employees in direct operation of the units, and be available for review upon request by Ecology.
- 4.2 Discontinuing Construction or Operations:** It shall be grounds for rescission of this approval if physical construction or operation is discontinued for a period of eighteen (18) months or more. Ecology may extend the 18-month period upon request.
- 4.3 Compliance Assurance Access:** Access to the source by representatives of Ecology or the EPA shall be permitted upon request. Failure to allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act, and may result in revocation of this Approval Order.
- 4.4 Equipment Operation:** Operation of the units and related equipment shall be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with the O&M manual, unless otherwise approved in writing by Ecology.
- 4.5 Activities Inconsistent with the NOC Application and this Approval Order:** Any activity undertaken by the permittee or others, in a manner that is inconsistent with the NOC application and this determination, shall be subject to Ecology enforcement under applicable regulations.
- 4.6 Obligations under Other Laws or Regulations:** Nothing in this Approval Order shall be construed to relieve the permittee of its obligations under any local, state or federal laws or regulations.
- 4.7 Modifications:** Any modifications to the unit's operating and maintenance procedures, contrary to information in the NOC application, shall be reported to Ecology at least 60 days before such modification. Such modification may require a new or amended NOC Approval Order.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

This Authorization may be modified, suspended, or revoked in whole, or in part, for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this authorization
2. Obtaining this authorization by misrepresentation, or failure to fully disclose all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization, or application of any provisions of this authorization to any circumstance, is held invalid, the application of such provision to their circumstances, and the remainder of this authorization, shall not be affected thereby.

The New Source Review Fee has been assessed according to WAC 173-455. No approval of a permit or service for any activity covered in this Order will be valid until the required fee is paid in full.

DATED at Richland, Washington, this **XXth** day of January 2013.

REVIEWED AND PREPARED BY:

Philip M. Gent, P.E.

APPROVED BY:

Jane A. Hedges
Program Manager, Nuclear Waste Program