



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

November 19, 2009

Mr. David A. Brockman, Manager
Richland Operations Office
United States Department of Energy
P.O. Box 550, MSIN: A7-50
Richland, Washington 99352

Re: Determination of Complete Application and Approval, Modification of Order 97NM-138

Reference: USDOE-RL Letter 10-EMD-0006, *Request for Portable Boiler Relocation and Dual Fuel Capability*, October 20, 2009.

Dear Mr. Brockman:

The Department of Ecology reviewed the referenced Notice of Construction modification request submitted by the United States Department of Energy–Richland Operations Office (USDOE-RL) under Chapter 173-400 Washington Administrative Code (WAC) and finds it complete. Enclosed with this letter, please find changes to ORDER 97NM-138 as Amendment 1 to that ORDER.

The proposed modification is that of allowing a 200 horse power portable diesel-fired boiler permitted under Order 97NM-138 to be:

- Intermittently relocated to the Hanford 300 Area rather than constrained to the Hanford 200 Area tank farms.
- Converted to fire either natural gas or diesel fuel.
- Fired with Ultra Low Sulfur Fuel with a sulfur content of < 0.0015% by weight when fired with diesel fuel.

USDOE-RL received approval to install this boiler by Order 97NM-138 on June 6, 1997. Data contained in the submission of your 1997 request for approval indicates that emissions changes consistent with Table 1 would be expected if the boiler were entirely fired with natural gas. As the maximum increase in carbon monoxide emissions exceeds the threshold for exemption from new source review within WAC 173-400-110(5), your proposed change constitutes a modification subject to new source review (NSR) and permitting.

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Mr. David Brockman
 November 19, 2009
 Page 2

As the proposed emissions increase does not exceed thresholds of WAC 173-400-030(27), the modification is not subject to public notice and comment provisions of WAC 173-400-171(2). An announcement of your application and this approval will be posted to the Ecology Nuclear Waste Program website at <http://www.ecy.wa.gov/programs/nwp/currentnews.htm> in compliance with WAC 173-400-171(1)(b).

Pollutant	Fuel Fired		Emissions increase	Emission Thresholds	
	Diesel	Natural Gas		NSR Exemption WAC 173-400-110(5)	Major Source WAC 173-400-030 (27)
NO _x	4.99	1.28	-3.71	2.0	40
SO ₂	1.7	0.02	-1.68	2.0	40
CO	2.36	7.77	5.41	5.0	100
PM ₁₀	0.37	0.41	0.04	0.75	15
PM	0.50	0.41	-0.09	1.25	25
VOC	0.43	0.45	0.02	2.0	40
Pb	2.90E-04	0	-2.90E-04	0.005	0.60

Specific approval ORDER changes are enclosed as Order 97NM-138 Amendment 1. This amendment will be incorporated within the next available Air Operating Permit revision as your notification of administrative amendment requested. The Air Operating Permit is anticipated to be revised in December 2009.

If you have any questions, please contact me at 509-372-7983.

Sincerely,



Doug Hendrickson, P.E.
 Nuclear Waste Program

Enclosure: ORDER 97NM-138 Amendment 1

cc: Mary Jarvis, USDOE
 Tom Beam, MSA
 Patrick Weiher, JCI
 Stuart Harris, CTUIR
 Gabriel Bohnee, NPT

Russell Jim, YN
 Susan Leckband, HAB
 Ken Niles, ODOE
 Administrative Record: AIR Permits
 Environmental Portal

ORDER 97NM-138, Amendment 1

The following Changes to Order 97NM-138 are approved:

Change 1: Page 2, Section 1.1 Description of Proposed Changes

WAS: One portable boiler will operate in this area and be housed near the East/Waste Tank Farm.

IS: One 200 brake horsepower (BHP) portable boiler will be primarily housed in the 300 Area with the potential to operate in both the 200 and 300 Areas of the Hanford Site to provide supplemental or replacement steam production at boiler annex buildings described in this section.

Change 2: Page 8, Section 3.2 Firing Equipment

WAS: All boilers will be equipped with a single burner firing either natural gas or distillate oil. (Dual fuel firing capability will not be available.) The larger burners (with firing rates equal to or greater than 5 mmBtu/hr) will be equipped with low-NO_x burners with FGR (see the NO_x BACT Analysis in Section 5 of the Notice of Construction [NOC]).

IS: All boilers will be equipped with a single burner firing either natural gas or distillate oil with the exception of the 200 BHP portable boiler. The larger burners (with firing rates equal to or greater than 5 mmBtu/hr) will be equipped with low-NO_x burners with flue gas recirculation (FGR) (See the NO_x best available control technology [BACT] Analysis in Section 5 of the NOC).

Change 3: Page 8, Section 3.3 Fuels

WAS: The boilers operating in the 300 Area will fire natural gas. Boilers operating in the 200 Areas will burn distillate fuel oil. None of the boilers will have dual-fuel firing capability.

The distillate fuel oil used will be that commercially available in the Richland area. A typical analysis of this oil is presented in Appendix E. Of interest are the fuel oil's sulfur, nitrogen and ash contents as they directly affect SO₂, NO_x and particulate emissions. The maximum sulfur content of the oil will be limited to 0.05% (500 ppm by weight). The oil's nitrogen content is less certain but is expected to range from 0.001% to 0.04% (10 ppm to 400 ppm by weight). The fuel oil will also be low ash. The maximum ash content will be 0.01% (by weight).

IS: The boilers operating in the 300 Area will fire natural gas with the exception that the 200 BHP dual-fuel boiler may fire distillate fuel when installed natural gas fuel supplies are not available at the point of installation. Boilers operating in the 200 Areas will burn distillate fuel oil.

The distillate fuel oil used will be that commercially available in the Richland area. A typical analysis of this oil is presented in Appendix E. Of interest are the fuel oil's sulfur, nitrogen, and

ash contents as they directly affect SO₂, NO_x, and particulate emissions. The maximum sulfur content of the oil will be limited to 0.05 percent (500 parts per million [ppm by weight]). Oil fired to the 200 BHP portable boiler will be ultra low sulfur fuel containing less than 0.0015 percent sulfur by weight. The oil's nitrogen content is less certain but is expected to range from 0.001 percent to 0.04 percent (10 ppm to 400 ppm by weight). The fuel oil will also be low ash. The maximum ash content will be 0.01 percent (by weight).

Change 4: Page 22, Section 7.1.1 Emission Limits

NEW:

Dual Fuel Firing: Limits are those of natural gas or distillate fuel firing expressed above when firing such fuel with the exception that upon distillate oil firing:

	<u>lb/mmBtu</u>	<u>Other Units</u>
Sulfur Oxides	0.0015	0.0015 percent sulfur distillate oil

DATED at Richland, Washington, this 19th day of November 2009.

REVIEWED AND PREPARED BY:


Doug Hendrickson, P.E.



APPROVED BY:


Jane A. Hedges
Program Manager
Nuclear Waste Program
Washington State Department of Ecology