



LB# 3900

AIR 14-303
NOC 912

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF RADIATION PROTECTION
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March 18, 2014

Ms. Stacy Charboneau, Assistant Manager
for Safety and Environment
United States Department of Energy
Richland Operations Office
P.O. Box 550, MSIN: A5-14
Richland, Washington 99352

Dear Ms. Charboneau:

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your application was approved on March 12, 2014, as negotiated, according to the enclosed license for:

**Operation of the Liquid Effluent Retention Facility 200 Area Basin 43
(Replaced NOC 822) (NOC 912; EU 147)**

The conditions, controls, monitoring requirements, and limitations of this license must be observed in order for you to be in compliance with WAC 246-247. Failure to meet any provision of this license may result in the revocation of approval, the issuance of Notices of Violation, or other enforcement actions under WAC 246-247-100.

If you have any questions regarding this approval, please contact John Schmidt at (509) 946-3874.

Sincerely,

John Martell, Manager
Radioactive Air Emissions Section

Enclosure: Applicable Portion of License (NOC 912; EU 147)

cc: (see next page)



cc: Ruth Allen, WRPS
Robert Anderson, MSA
Matthew Barnett, PNNL
Lee Bostic, BNI
Cliff Clark, USDOE-RL
Jack Donnelly, WRPS
Rick Engelmann, CHPRC
Dennis Faulk, EPA
Phil Gent, Ecology
Robert Haggard, BNI
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Valarie Peery, Ecology
Crystal Rau, Ecology
John Schmidt, WDOH
Maria Skorska, Ecology
Jeff Voogd, WRPS
Joan Woolard, WRPS
Davis Zhen, EPA
Environmental Portal
RAES Tracking Line# 814; NOC 912; EU 147

Emission Unit ID: 147

200E P-242AL43-001

LERF Basin #43

This is a MINOR, PASSIVELY ventilated emission unit.

Liquid Effluent Retention Facility (LERF)

Emission Unit Information

Stack Height: 5.00 ft. 1.52 m. Stack Diameter 0.17 ft. 0.05 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack Exhaust Velocity: 32.50 ft/second. 9.91 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Charcoal filter	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	40 CFR 61, Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	Air - every 2 weeks continuous/deposition - annually

Sampling Requirements Near Field Environment Sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Operations at LERF involve receipt and storage of wastewaters on the Hanford Site.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval #	Date Approved	NOC_ID
Operation of the Liquid Effluent Retention Facility 200 Area Basin 43 (Replaced NOC ID 822)	AIR 14-303	3/12/2014	912

Conditions (state only enforceable: WAC 246-247-040(5), 060(5) if not specified)

- 1) The total abated emission limit for this Notice of Construction is limited to 5.96E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).
- 2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility 200 Area Basin 43

LERF provides temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. LERF consists of three high density polyethylene double lined basins, each with an operating capacity of 29.5 million L. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe are channeled through a carbon adsorption filter.

LERF Cover Cleanup Operations

These operations include removal of contaminated liquids, vegetation, debris, and windblown dirt/mud that have collected on the surface of the LERF basin covers and in nearby external locations in or near LERF. Precipitation and windblown dirt/mud, which normally collect on the floating low-density polyethylene covers, are removed by pumping the precipitation into the basin under the cover, into containers located at LERF, or directly to the ground if contamination is below the groundwater quality criteria for radionuclides

listed in WAC 173-200-040, "Water Quality Standards for Groundwaters of the State of Washington," "Criteria." The dirt/mud on the covers is collected on filters or sluiced, slurried, or mechanically loaded into containers for disposal.

Vegetation and debris (such as old hoses and failed pumps) are removed using mechanical methods and tools including, but not limited to, cranes, heavy equipment, chain balls, nets, long reach tools, or similar methods. Workers will employ these methods from the sides of the basins. This material will be placed in containers and disposed.

The floating covers and charcoal filters on breather vents reduce emissions from the LERF basins. Other unfiltered LERF/ETF diffuse and fugitive emissions are very low. Containment provided by drums and other waste packages, combined with minimization of any external contamination in accordance with established radiation control procedures, provides for effective control of potential fugitive emissions. Potential emissions during waste unloading from tankers and pressure testing of tankers are controlled by the very moist conditions in the tanker and the gradual air displacement and air release rates that occur.

- 3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.96E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	5.01E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Am - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
B/G - 0	3.33E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
C - 14		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 244		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 60		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 137		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents greater than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 154		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 155		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
H - 3		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
I - 129		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Zr - 95

Liquid/Particulate Solid

WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144	Cm - 244	Co - 60
Cs - 134	Cs - 137	Eu - 154	Eu - 155	H - 3
I - 129	K - 40	Mn - 54	Na - 22	Nb - 94
Np - 237	Pu - 238	Pu - 239/240	Pu - 241	Ra - 226
Ru - 106	Sb - 125	Se - 79	Sr - 90	Tc - 99
U - 233	U - 234	U - 235	U - 236	U - 238
Zn - 65	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) CONTAMINATION CONTROLS-Quarterly Inspection

Contamination on top of the LERF covers shall be minimized by inspecting the covers on a quarterly basis for damage and accumulation of precipitation, and pumping the precipitation into the basin under the covers as needed, Weather allowing, pumping will be initiated whenever visible channeling occurs (unless caused by malfunction of the tensioning system) or whenever there is standing water on more than 10% of the cover.
(WAC 246-247-040(5))

5) CONTAMINATION CONTROLS-Annual Cleaning

Covers shall be cleaned at a minimum of once per calendar year of accumulation of precipitation and removable material.

The fluid will be removed to a level where the fluid is not readily pumpable, and the accumulated solids will be removed to a level the does not cause channeling of the cover.

(WAC 246-247-040(5))

6) CONTAMINATION CONTROL-Cover Cleanup

If physical removal from the covers other than by pumping is necessary, the following controls shall be implemented:

Continuous radiological control technician coverage shall be provided as specified in applicable Radiological Work Permits.

Beta-gamma contamination surveys shall be performed during cleanup activities.

Cleanup activities involving movement of dispersible contaminated material shall stop if average wind speeds exceed 20 miles per hour, as measured at the work site.

Suppressants such as water, fixatives, and covers shall be used, as necessary, to control contamination spread.

(WAC 246-247-040(5))

7) CONTAMINATION DOCUMENTATION-Cover Cleanup Control-outside LERF Basins

For the area from the basin edges to 1,000 ft. from the basin edge, maintain a record of rad con reports that were performed during the month (routine, pre-job and during-job surveys) and appropriate corrective actions taken (as required) which shall be available for the audit. The reports shall include details of biologic vectors if involved.

(WAC 246-247-040(5)), (WAC 246-247-040(6))

8) WDOH NOTIFICATION-Cover Cleanup Control-Contamination greater than 1 rad/hr

WDOH shall be notified when direct contamination readings are detected greater than 1 rad per hour per 100, square centimeters beta-gamma during cleanup activities.

(WAC 246-247-040(5)), (WAC 246-247-040(6))

- 9) WDOH NOTIFICATION-Cover Cleanup Control-Increased Controls
Removable and transferable contamination shall be maintained less than 4 rad per hour per 100 square centimeters beta-gamma. Exceeding these contamination levels requires notification to WDOH and implementation of the following additional controls:
Soil shall be wetted prior to removal if not already damp.
General work place air monitoring shall be performed during removal activities.
Dislodged vegetation not already in containers shall have fixative applied at the end of each shift, or the material will be covered, as necessary, to prevent airborne contamination.(
WAC 246-247-040(5)), (WAC 246-247-040(6))
- 10) CONTAMINATION CONTROL- Diffuse and Fugitive Activities
The 200 Area Diffuse/Fugitive Emission Unit at LERF/ETF is limited to the following:
LERF wastewater receipt via pipeline and LERF access ports
Minor leaks during transfers when using vented pipelines
LERF operations and maintenance
LERF leachate collection system sampling and sump pumping
Load-in station wastewater receipts via container
Load-in station filter skid operation and maintenance
Load-in station tank operation, maintenance, and repair
Minor leaks and spills to secondary containment systems
Storage and transfer of treated effluent containing tritium
Effluent sampling
Purge water open-top settling tank operation
Removal of contaminated liquids, plants, debris, and dirt/mud that have collected on the surface of the LERF covers and in nearby external locations in or near LERF (WAC 246-247-040(5))
- 11) DIFFUSE AND FUGITIVE OPERATIONS AUTHORIZED.
This NOC is authorized to incorporate the most current version of NOC 915, EU 486 Diffuse and Fugitive Operations at LERF and ETF.
(WAC 246-247-040(5))
- 12) CONTINUOUS MONITORING- Ambient Air Monitoring Network
The 200 Area near-facility ambient air monitoring network shall be used for continuous monitoring. The stations (N498, N499, N972, N999) will also provide indication of potential elevated airborne radioactivity. In addition, continuous monitoring will be performed at the northeast corner of basin 44 (station N581) using the same frequency and protocol of the Hanford Site Near-Facility Environmental Monitoring Program.
(WAC 246-247-040(5))
- 13) WDOH NOTIFICATION-Equipment Repair
Tensioning system malfunctions that cause channeling shall be repaired within a six month time frame or WDOH will be notified of a time frame for repair.
(WAC 246-247-040(5))
- 14) CONTINUOUS MONITORING- Chain of custody
Air sample data shall be analyzed by MSA and ABCASH data shall available to WDOH. The chain of custody for station N581 shall be the same as for the 200 Area near-facility ambient air monitoring network.
(WAC 246-247-040(5))
- 15) MONITORING REQUIREMENTS-Sampling Frequency-Soil Deposition
Annual soil deposition sampling shall be performed in three prominent downwind locations, as determined by the previous year's wind rose data. (WAC 246-247-040(5))