



LB# 3520

AIR 12-1001  
NOC 863

STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
OFFICE OF RADIATION PROTECTION  
309 Bradley Blvd., Suite 201 • Richland, Washington 99352  
TDD Relay Service: 1-800-833-6388

October 4, 2012

Mr. Scott Samuelson, Manager  
United States Department of Energy  
Office of River Protection  
P.O. Box 450, MSIN: H6-60  
Richland, Washington 99352

Dear Mr. Samuelson:

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your application was hereby approved on September 27, 2012, according to the enclosed emission unit specific license for:

**E-525 Double-Shell Tank (DST) Transfer System Modifications Project  
(Replaced NOC ID 855) (NOC 863; EU 486, 751)**

This emission unit specific license will be included in the next FF-01 revision.

The conditions, controls, monitoring requirements, and limitations of this emission unit specific license and the FF-01 license must be observed in order for you to be in compliance with WAC Chapter 246-247. Failure to meet any provision of the emission unit specific or the FF-01 license may result in the revocation of approval, the issuance of Notices of Violation, or other enforcement actions under WAC 246-247-100.

This emission unit specific license approval replaces and obsoletes:

**E-525 Double-Shell Tank (DST) Transfer System Modifications Project  
(Replaced NOC ID 786) (NOC 855; EU 486, 751)**

If you have any questions regarding this approval, please contact Ernest McCormick at (509) 946-0624.

Sincerely,

P. John Martell, Manager  
Radioactive Air Emissions Section

Enclosure: Emission Unit Specific (EU 486 and 751) License

cc: (see next page)



cc: Robert Anderson, MSA  
Matthew Barnett, PNNL  
John Bates, CHPRC  
Tom Beam, MSA  
Lee Bostic, BNI  
Dennis Bowser, USDOE-RL  
Jack Donnelly, WRPS  
Dennis Faulk, EPA  
Phil Gent, Ecology  
Robert Haggard, BNI  
Dale Jackson, USDOE-RL  
Steven Killoy, WRPS  
Ernest McCormick, WDOH  
Felix Miera, WRPS  
Valarie Peery, Ecology  
Michael Peloquin, WRPS  
Lucinda Penn, WRPS  
Crystal Rau, Ecology  
John Schmidt, WDOH  
Mara Skorska, Ecology  
Jeff Voogd, WRPS  
Stephen Weil, USDOE-RL  
Joel Williams Jr., CHPRC  
Davis Zhen, EPA  
Environmental Portal  
RAES Tracking: RAES 457; NOC 863; EU 486, 751

**Project Title**

E-525 Double-Shell Tank (DST) Transfer System Modifications Project  
(Replaced NOC ID 855)

**Approval #**

AIR 12-1001

**Date Approved**

9/27/2012

**NOC\_ID**

863

**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 3.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 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.

**241-AZ-151 CATCH TANK BYPASS**

The modification description for the 241-AZ-151 catch tank bypass modification includes the installation of a new RCRA-compliant condensate distribution system for condensate generated from the existing 241-AZ-702 ventilation system. This will involve tapping into existing ventilation headers. This work will be done according to ALARACT 16.1 requirements. This new system will consist of a 1200 gallon capacity catch tank (241-AZ-301), secondary containment, piping, pumps, and controls. The system is designed to collect condensate at rate of 0.29 gallons per minute (154,424 gallons per year). The tank will be emptied every 2 to 3 days. At that time, the condensate will be pumped back to one of the 241-AZ or 241-AY tanks at a rate of 4 to 5 gallons per minute. Condensate accumulation is currently estimated at between 6000 to 8000 gallons per month- 72,000 to 96,000 gallons per year.

The new 241-AZ-301 tank and system will be located outside the northeast corner of building 241-AZ-702. Most of the secondary containment structure will be located below grade (except for the cover that will be located above grade) to provide operator access and remote valve operation. A HEPA filter will also be installed above grade. This filter will be connected to 241-AZ-301 tank and will be used as the vent for the 241-AZ-301 tank.

The lower level of the fabricated tank system will contain the receiver tank for the condensate coming from the AZ-PC-SP-1 seal pot via line AZ-503. Other components housed in the lower level will include the sump, sump suction line, tank suction piping, tank return piping, tank vent lines, instrument access risers, leak detection, and freeze protection, as required.

The upper level of the fabricated tank system will contain the distribution pumps, valves, instrumentation, and controls. Operator access will be provided as required (e.g., access ladder, door in system cover, mid-level grating to support operator). Distribution valves will be located to provide the ability to use remote valve actuators. Freeze protection for the piping, pumps, and valves will be used as required.

The AZ-PC-SP-1 seal pot is located in the 241-AZ-702 building and this seal pot serves as a collection point for condensate originating from the 241-AZ-702 ventilation system. The 241-AZ-702 ventilation system provides primary tank ventilation for the 241-AY and 241-AZ DSTs. The existing 241-AZ-151 catch tank would be isolated in a separate effort to support other commitments.

Currently there are two drain paths into the 241-AZ-151 catch tank that will remain active after June 30, 2005. Those two drain paths are the condensate from the 241-AZ-702 facility and the 241-AZ-801A floor drain. The 241-AZ-702 condensate drain line will be rerouted to the 241-AY tanks and also to the 241-AZ tanks. In addition, the 241-AZ-801A floor drain will be isolated. In addition to the installation of a drain line to AZ-102, a new jumper will be installed in the 241-AZ-02A pit. This work will be accomplished under ALARACT 4.1,6.1,14.1 and 15.1.

**204-AR TRANSFER LINE MODIFICATION**

The 204-AR Waste Unloading Facility will continue to be in operation after June 30, 2005. Waste transfer line LIQW-702 will be modified to extend the transfer line encasement through the pit wall. This pipe is buried approximately three and a half feet below grade, so the excavated area will be approximately 10' x 10' x 6". A portion of the slab under an old laundry facility and a section of the asphalt surface adjacent to the doorstep of the facility will require demolition for access.

The new encasement section will be open-ended, upstream of the exterior wall seal plate. The obsolete air purge connection to the existing encasement pipe will be removed.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.70E-03	Am - 241	7.76E+02	Am - 243	4.32E-02
Ba - 137 m	1.41E+06	C - 14	5.77E+00	Cd - 113 m	1.76E+02
Cm - 242	6.36E+01	Cm - 243	1.93E-01	Cm - 244	2.63E+00
Co - 60	1.08E+02	Cs - 134	3.32E+00	Cs - 137	1.49E+06
Eu - 152	8.21E+00	Eu - 154	6.09E+02	Eu - 155	7.03E+02
H - 3	8.16E+02	I - 129	1.13E+00	Nb - 93 m	2.04E+01
Ni - 59	1.82E+00	Ni - 63	1.74E+02	Np - 237	1.88E+01
Pa - 231	1.19E-02	Pu - 238	6.19E+00	Pu - 239	1.07E+02
Pu - 240	2.27E+01	Pu - 241	3.89E+02	Pu - 242	2.37E-03
Ra - 226	4.36E-04	Ra - 228	2.03E-01	Ru - 106	1.49E-04
Sb - 125	8.23E+01	Se - 79	2.86E+00	Sm - 151	3.25E+04
Sn - 126	5.86E+00	Sr - 90	1.68E+05	Tc - 99	1.34E+03
Th - 229	7.22E-03	Th - 232	3.26E-02	U - 232	4.66E-01
U - 233	1.91E+00	U - 234	1.53E+00	U - 235	5.90E-02
U - 236	1.05E-01	U - 238	1.14E+00	Y - 90	1.68E+05
Zr - 93	2.16E+01				

4) **ABATEMENT TECHNOLOGY-Pit work**

All pit work shall be performed in accordance with ALARACT 6.1 "TWRS ALARACT Demonstration for Pit Access", ALARACT 13.1 "TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment", and ALARACT 14.1 "TWRS ALARACT Demonstration for Pit Work".

5) **ABATEMENT TECHNOLOGY- Soil excavation, manual**

All soil excavation, not using the Guzzler, shall be conducted in accordance with ALARACT 5.1 "TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools)".

- 6) ABATEMENT TECHNOLOGY- Soil excavation, Guzzler  
For Guzzler excavation, monitoring will be performed as discussed in the latest WDOH approved NOC, "Operation of the Guzzler in the Tank Farm Facilities." A guzzler tracking log will be used to track emissions. Periodic confirmatory measurements will be performed in accordance with the WDOH approved NOC.
- 7) ABATEMENT TECHNOLOGY- Pipe cuts  
Required cuts of contaminated piping shall be made inside a glove bag for the initial cuts which separate the pipe from the system. Subsequent cuts for size reduction and waste disposal may be made under the conditions of ALARACT 15.1.
- 8) WDOH APPROVED LOG Guzzler Excavation  
For Guzzler excavation, the Annual Possession Quantity shall be tracked on a WDOH approved excavation log.
- 9) CONTAMINATION CONTROL PTRAEU and HEPA  
When performing work inside a glove bag and using a PTRAEU or HEPA filtered vacuum all conditions and limitations of site wide approvals for operation of the PTRAEU and HEPA filtered vacuums shall be followed.
- 10) RELEASE RATES- manual soil excavation limit  
The total contaminated soil to be excavated for all NOC described activities shall not exceed 50,000 cubic feet.

Emission Unit ID: 751

200E P-241AZ301-001

241-AZ-301

This is a MINOR, PASSIVELY ventilated emission unit.

241-AZ TANK FARM

**Emission Unit Information**

Stack Height: 5.00 ft. 1.52 m. Stack Diameter 1.13 ft. 0.34 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack Exhaust Velocity: 0.25 ft/second. 0.08 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
	HEPA	1	Passive Breather Filter

**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	Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	Every 365 days

**Sampling Requirements** Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent.

**Additional Requirements**

Radial breather filters shall be replaced every 365 days.

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

**Operational Status** This emission unit is a catch tank passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241-AZ Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

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

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Pa - 231	1.19E-02	Pu - 238	6.19E+00	Pu - 239	1.07E+02
Pu - 240	2.26E+01	Pu - 241	3.89E+02	Pu - 242	2.37E-03
Ra - 226	4.36E-04	Ra - 228	1.98E-01	Ru - 106	1.49E-04
Sb - 125	8.20E+01	Se - 79	2.06E+01	Sm - 151	3.25E+04
Sn - 126	6.86E+00	Sr - 90	1.68E+05	Tc - 99	1.34E+03
Th - 229	7.22E-03	Th - 232	3.26E-02	U - 232	4.66E-01
U - 233	1.91E+00	U - 234	2.57E-01	U - 235	5.90E-02
U - 236	1.05E-01	U - 238	1.13E+00	Y - 90	1.67E+05
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