



LB 3601

AIR 13-307  
NOC 877

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

March 15, 2013

**CERTIFIED MAIL**

7008 1300 0001 5989 9666

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

Dear Mr. Smith:

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your revised application will be approved according to the enclosed License for:

**Operation of 296-A-19 Annulus Exhauster AY-102 (NOC 877; EU 218)**

The Washington State Department of Health (DOH) considers the conditions, controls, monitoring requirements, and limitations of the License integral to approval of your application.

This approval shall take effect, and a final approval letter issued, twenty-eight (28) days after you receive it unless you apply for an adjudicative proceeding, as described below.

If you accept the conditions and limitations of this approval and do not wish to apply for an adjudicative proceeding, but wish to proceed under this approval before the 28 days have elapsed, please notify us in writing and the DOH will issue the final approval letter. Your notice should be mailed or faxed to:

DOH – Office of Radiation Protection  
Radioactive Air Emissions Section  
309 Bradley Blvd., Suite 201  
Richland, Washington 99352  
FAX: (509) 946-0876



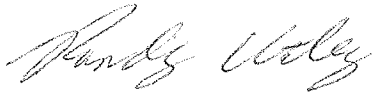
If there are concerns with the conditions and limitations of the approval, please notify the DOH. If attempts to resolve the concerns fail, the DOH will deny your application and you may contest the conditions and limitations of this approval, within 28 days of receipt, by filing the enclosed Request for Adjudicative Proceeding or a document providing substantially the same information with the DOH, Adjudicative Service Unit (ASU), in a manner that shows proof of service on the ASU. The ASU's address is:

DOH - Adjudicative Service Unit  
310 Israel Road SE  
P.O. Box 47879  
Olympia, Washington 98504-7879

You must include a copy of this approval with your application. FILING SHALL NOT BE DEEMED COMPLETE UNTIL THE ADJUDICATIVE SERVICE UNIT ACTUALLY RECEIVES YOUR APPLICATION.

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

Sincerely,



*for* P. John Martell, Manager  
Radioactive Air Emissions Section

Enclosure: 1. Conditions and Limitations for EU 218 (NOC 877)  
2. Request for Adjudicative Proceeding

cc: Robert Anderson, MSA  
Matthew Barnett, PNNL  
John Bates, CHPRC  
Tom Beam, MSA  
Lee Bostic, BNI  
Dennis Bowser, USDOE-ORP  
Cliff Clark, 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  
Maria Skorska, Ecology  
Jeff Voogd, WRPS  
Davis Zhen, EPA  
Environmental Portal  
RAES Tracking: NOC 877; EU 218

Emission Unit ID: 218

200E P-296A019-001

296-A-19

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AY Tank Farm

### Emission Unit Information

Stack Height: 12.90 ft. 3.93 m. Stack Diameter 1.25 ft. 0.38 m.

Average Stack Effluent Temperature: 83 degrees Fahrenheit. 28 degrees Celsius.

Average Stack Exhaust Velocity: 52.30 ft/second. 15.94 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	2	In Series
	Fan	1	Annulus Exhauster
	Heater	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	Continuous

**Sampling Requirements** Record Sample

#### Additional Requirements

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 DST annulus exhauster used to support tank farm operations and ventilates the annulus of DST 241-AY-102. The tank stores radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates intermittently.

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

#### Project Title

Operation of 296-A-19 Annulus Exhauster AY-102

#### Approval #

Date Approved NOC\_ID

Not Approved 877

#### 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 3.84E-01 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 7.67E+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.

This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annulus of DST 241-AY-102. The tank annulus is located between the 75-ft diameter primary tank and the 80-ft diameter secondary liner resulting in a nominal 2.5-ft wide annular space wrapping around the entire circumference of the

primary tank. Several penetrations, or risers, of various sizes exist at the top of the secondary liner, which allows access into the annulus space. This access is used for a variety of activities, including but not limited to visual inspection cameras, sampling, ultrasonic testing crawlers, emergency pumps, and leak detection instruments. The annulus provides secondary containment when the primary tank fails and also provides the ability to cool the primary tank to reduce thermal stresses. The emission unit operates intermittently. The annulus ventilation systems minimize potential corrosion due to condensation by removing moisture through evaporation. The ventilation air accelerates the evaporation rate by circulating outside air through the annulus. The ventilation air also dilutes and removes any flammable gas generated within the annulus if there is waste in the annulus.

The Tank 241-AY-102 annulus ventilation system's exhaust fan draws outside air into an intake consisting of a damper and two pre-filters configured in series. Currently, the air is routed to the air distribution ring centered under the primary tank floor. The air flows from the air distribution ring through the air distribution slots in the refractory to the annulus. Exhaust air from the tank annulus is drawn out through underground ducts. The ducts merge aboveground to form a common vent header. For leak-detection purposes, a vacuum pump extracts an air sample from the header located upstream of the exhauster HEPA filters and feeds this air sample to a CAM. The header connects to the exhaust train where tank annulus exhaust air continues through two banks of HEPA filters configured in series. Filtered air exits the annulus ventilation system through an exhaust fan and stack and is released to the environment. The stack is fitted with a record sampler system that samples the air stream for radioactive particulates.

**WORK WITHIN ANNULUS:**

The 241-AY-102 Double shell tank annular space is known to have low levels of radioactive contamination. Work evolutions in the AY-102 Annulus include operating and removing equipment, and sample collection of unknown materials by mechanical methods. Equipment installation and removal will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment. Removed long-length equipment will either be packaged in long-length contaminated equipment disposal containers or size reduced for disposal in accordance with ALARACT Demonstration 15, Tank Farm ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. Additional activities include those activities necessary to mitigate potential waste which has entered the annulus from the primary tank 241-AY-102. The overall PTE from the AY-102 will not be increased due to the migration of tank waste into the annular space. However, a small portion of the total emissions will travel through the annular stack; i.e. the 296-A-19 stack.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit, and a HEPA filtered vacuum radioactive air emission unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75 and DOE/RL-97-50, respectively).

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

Ac - 227	9.30E-03	Am - 241	5.10E+03	Am - 243	2.80E+00
Ba - 137 m	6.80E+05	C - 14	9.40E-01	Cd - 113 m	5.00E+01
Cm - 242	5.70E+00	Cm - 243	2.20E+00	Cm - 244	5.10E+01
Co - 60	8.00E+01	Cs - 134	4.20E+01	Cs - 137	6.80E+05
Eu - 152	6.60E+01	Eu - 154	6.60E+03	Eu - 155	2.70E+03
H - 3	1.50E+01	I - 129	5.00E-01	Nb - 93 m	4.70E+01

Ni - 59	2.50E+01	Ni - 63	2.30E+03	Np - 237	3.90E+00
Pa - 231	7.90E-02	Pu - 238	6.30E+01	Pu - 239	1.60E+03
Pu - 240	3.80E+02	Pu - 241	2.70E+03	Pu - 242	2.50E-02
Ra - 226	9.10E-05	Ra - 228	4.40E-02	Ru - 106	6.10E-04
Sb - 125	3.40E+01	Se - 79	4.40E-01	Sm - 151	8.30E+04
Sn - 126	1.70E+01	Sr - 90	4.70E+06	Tc - 99	1.90E+02
Th - 229	3.80E-05	Th - 232	5.40E-02	U - 232	2.70E-03
U - 233	2.00E-01	U - 234	7.40E-01	U - 235	3.10E-02
U - 236	2.30E-02	U - 238	6.90E-01	Y - 90	4.70E+06
Zr - 93	5.70E+01				

4) MONITORING -Evaluation schedule requirement

A plan to evaluate the sampling system and the installation of a continuous air monitoring systems to meet the sampling requirements for ANSI N13.1 1999 will be required by May 30, 2013. The plan will require the following actions, with dates of completion:

- A review of the current sampling system efficiencies
- Development of technical basis documentation
- Replacement system design completion
- Replacement system installation completion

(WAC 246-247-060(5), 246-247-075(3)).

5) MONITORING DURING OPERATIONS-Upgrade required

Record sampling for the 241-AY-102 annulus will be obtained through use of the existing EU 218 (296-A-19) stack sampling system until identified upgrades are completed. The samples will be analyzed, at a minimum, for Sr-90, Cs-137, and Am-247. While in operation, the 296-A-19 record sampler instrumentation will be calibrated annually in accordance with approved procedures, and system inspections will be performed daily to ensure instrumentation is operating within specified parameters (WAC 246-247-060(5)).

6) WDOH NOTIFICATION

WDOH will be notified when the initial inspection to meet ANSI N 13.1 (7.5)-Maintenance and Inspection requirements have been completed. The deadline for this activity will be June 15, 2013 (40 CFR 61 App. B Method 114 (4.7), WAC 246-247-075(2), WAC 246-247-060(5)).

**STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH PROGRAMS  
OFFICE OF RADIATION PROTECTION**

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In Re The Approval of:

**Operation of 296-A-19 Annulus Exhauster AY-102  
(EU 218)**

Docket No:

**REQUEST FOR ADJUDICATIVE PROCEEDING**

NOC ID:           **877**

Approval No:   **AIR 13-307**

THE STATE OF WASHINGTON TO:

**Mr. Kevin W. Smith, Manager  
United States Department of Energy  
Office of River Protection  
P.O. Box 450, MSIN: H6-60  
Richland, Washington 99352-0450**

If you wish to request an adjudicative proceeding, you or your attorney must COMPLETE AND FILE THIS FORM OR A DOCUMENT PROVIDING SUBSTANTIALLY THE SAME INFORMATION WITH THE DEPARTMENT OF HEALTH ADJUDICATIVE SERVICE UNIT WITHIN TWENTY-EIGHT (28) DAYS OF YOUR RECEIPT of this Request for Adjudicative Proceeding form and a copy of the Office of Radiation Protection's approval, **AIR 13-307**.

You must file your application in a manner that shows proof of service on the Adjudicative Service Unit, at the following address:

Department of Health  
Adjudicative Service Unit  
310 Israel Road S.E.  
P.O. Box 47879  
Olympia, WA 98504-7879

With your application, you must include a copy of the Office of Radiation Protection's approval.

FILING SHALL NOT BE DEEMED COMPLETE UNTIL THE ADJUDICATIVE SERVICE UNIT ACTUALLY RECEIVES YOUR APPLICATION.

YOU HAVE THE RIGHT TO a formal hearing in this matter conducted pursuant to Revised Code of Washington (RCW) 43.70.115, Chapter 34.05 RCW, and Chapter 246-10 of the Washington Administrative Code (WAC). Alternatively, you may waive the formal hearing and submit a written statement and supporting documents setting out your position, your defenses, and any mitigating circumstances that you wish to bring to the Department's attention.

You have the right to be represented by an attorney at your own expense.

**I.**

I **WILL BE** represented by an attorney. His/her name, address, and phone number are:

Name:

Address:

Phone:

I **WILL NOT BE** represented by an attorney.

*If after submitting this request, you obtain attorney representation or change attorneys, you must notify the Adjudicative Service Unit.*

**II.**

I **DO NOT** waive my right to a formal hearing.

I **DO** waive my right to a formal hearing. I understand that if I waive my right to a formal hearing, the Department may decide this matter solely with reference to information in the Department's possession and to such written statements and supporting documents as I may have submitted.

If you choose to waive your right to a formal hearing, please complete the following:

I **AM NOT** submitting documents to the Department in support of my position.

I **AM** submitting a sworn statement and/or other documents to the Department in support of my position. Instructions - Please indicate your responses below:

If you are submitting documents to the Department, please list and briefly identify all such documents in the space provided below and on any additional sheet that may be necessary.

**III.**

ADMISSION/DENIAL OF CONDITIONS OR LIMITATIONS

The Office of Radiation Protection's approval **AIR 13-307**, dated **March 15, 2013**, contains conditions and limitations set out as numbered paragraphs. In the space below you must indicate, in good faith, whether you admit, or do not contest, or deny the conditions or limitations. Conditions or limitations denied or not contested may later be admitted. Conditions or limitations admitted or not contested shall be conclusively deemed true for further proceedings.

Instructions: I admit, deny, or do not contest the conditions or limitations as follows  
(fill in the appropriate paragraph number):

	<u>Admit</u>	<u>Deny</u>	<u>Do Not Contest</u>
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]

Please attach any additional sheets that may be necessary to respond to all allegations.

If you have chosen not to waive your rights to a formal hearing, please state all grounds for contesting this matter in the space provided below and on any additional sheets that may be necessary.



IV.

You have the right to an interpreter, appointed at no cost, if you are a hearing impaired person or limited English speaking person. If any witness for you is a hearing impaired person or a limited English speaking person, an interpreter will be appointed at your expense.

I **[DO]** / **[DO NOT]** (circle one) request an interpreter be appointed. If an interpreter is requested, please indicate the person or persons for whom an interpreter is required and their primary language, and/or whether they are hearing impaired.

IF YOU FAIL TO FILE YOUR APPLICATION IN A TIMELY MANNER, OR IF YOU FILE YOUR APPLICATION TIMELY BUT FAIL TO APPEAR AT ANY SCHEDULED SETTLEMENT CONFERENCE, PREHEARING CONFERENCE, OR HEARING WITHOUT LEAVE TO DO SO, THE DEPARTMENT MAY DECIDE THIS MATTER WITHOUT YOUR PARTICIPATION AND WITHOUT FURTHER NOTICE TO YOU.

DATED this \_\_\_\_\_ day of \_\_\_\_\_,

\_\_\_\_\_  
Party

\_\_\_\_\_  
Party's Representative (if any)

WSBA #: \_\_\_\_\_