



LB# 3703

AIR 13-823
NOC 894, 895, 896, & 897

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF RADIATION PROTECTION
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August 23, 2013

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), the modification of Emission Units (EUs) 894, 1129, 1130, and 1232 were approved as of August 20, 2013, according to the enclosed Licenses for:

- AIR 13-818: Operation of Breather Filter on 241-UX-302A (Replaced NOC 865)
(NOC 895, EU 894)**
- AIR 13-820: Operation of Breather Filter on 241-U-301B (Replaced NOC 865)
(NOC 897, EU 1129)**
- AIR 13-819: Operation of Breather Filter on 241-AZ-154 (Replaced NOC 865)
(NOC 896, EU 1130)**
- AIR 13-817: Operation of Breather Filter on 240-S-302 (Replaced NOC 865)
(NOC 894, EU 1232)**

The conditions, controls, monitoring requirements, and limitations of this License must be observed in order for you to be in compliance with chapter 246-247 WAC. 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.

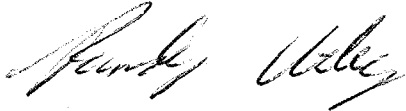
These license approvals replace and obsolete:

**Installation and Operation of Breather Filters on Miscellaneous Tanks.
(Replaced NOC ID 739)**



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

Sincerely,



for
John Martell, Manager
Radioactive Air Emissions Section

Enclosure: Applicable Portions of License

cc: Robert Anderson, MSA
Matthew Barnett, PNNL
Tom Beam, MSA
Lee Bostic, BNI
Dennis Bowser, USDOE-ORP
Cliff Clark, USDOE-RL
Jack Donnelly, WRPS
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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: Line 561; Resp. to IM 7,822; NOC 894; EU 1232

Emission Unit ID: 894

200W P-241UX302A-001

241-UX-302A

This is a MINOR, PASSIVELY ventilated emission unit.

241-U 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/100cm ² beta/gamma and 200 dpm/100cm ² 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 The breather filter shall minimize the amount of radioactive particles emitted as a consequence of tank breathing due to barometric pressure changes. The emission unit is a passive breather filter ventilation that operates continuously. The 241-UX-302A catch tank is a 17,600 gallon capacity catch tank which has been isolated.

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

Project Title	Approval #	Date Approved	NOC_ID
Operation of Breather Filter on 241-UX-302A (Replaced NOC 865)	AIR 13-818	8/20/2013	895

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 1.00E-05 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 1.00E-03 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.

The 241-UX-302A catch tank is a 17,600 gallon capacity catch tank located near U Plant. The tank has a breather filter installed whose purpose is to minimize any radioactive particulates that may be emitted.

Currently, there is currently less than 1,000 gallons of waste stored in the tank. Current operational activities in this tank include level monitoring for leaks and intrusion by a variety of methods including dip tubes, manual tapes, zip cords, and ENRAFs; sampling tank contents, pumping tank contents, adding flush water used pursuant to ALARACT practices.

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

Alpha - 0	1.99E-11	Beta - 0	1.32E-08	Gamma - 0	1.27E-08
Based on 241Am		Based on 90Sr		Based on 137Cs	

4) **ALTERNATE APPROVAL-Annual Replacement**

The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm. (WAC 246-247-040(5) and WAC 246-247-075(4)).

Emission Unit ID: 1129

200W P-241U301B-001

241-U-301B

This is a MINOR, PASSIVELY ventilated emission unit.

241-U 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 The breather filter shall minimize the amount of radioactive particles emitted as a consequence of tank breathing due to barometric pressure changes. The emission unit is a passive breather filter ventilation that operates continuously. The 241-U-301B catch tank is a 36,000 gallon capacity catch tank designed to support waste transfers from 244-TX via 241-U-151 and 241-U-152.

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

Project Title	Approval #	Date Approved	NOC_ID
Operation of Breather Filter on 241-U-301B (Replaced NOC 865)	AIR 13-820	8/20/2013	897

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 1.00E-05 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 1.00E-03 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.

The 241-U-301B catch tank is a 36,000 gallon capacity catch tank located in U Farm. The tank has a breather filter installed whose purpose is to minimize any radioactive particulates that may be emitted.

Currently, there is currently less than 2,000 gallons of waste stored in the tank. Current operational activities in this tank include level monitoring for leaks and intrusion by a variety of methods including dip tubes, manual tapes, zip cords, and ENRAFs; sampling tank contents, pumping tank contents, adding flush water used pursuant to ALARACT practices.

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

Am - 241	1.11E-09	Pu - 239/240	1.39E-09	Sr - 90	3.33E-09
U - 234	3.28E-10	U - 235	1.28E-10	Zn - 65	7.77E-08

4) **ALTERNATE APPROVAL-Annual Replacement**

The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm. (WAC 246-247-040(5) and WAC 246-247-075(4)).

Emission Unit ID: 1130

200E P-241AZ154-001

241-AZ-154

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 passive breather filter that allows the catch tank to vent to the atmosphere under tank farm storage, maintenance and operations. Any activity other than waste transfer support, maintenance, and normal operations 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 that operated continuously.

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

Project Title	Approval #	Date Approved	NOC_ID
Operation of Breather Filter on 241-AZ-154 (Replaced NOC 865)	AIR 13-819	8/20/2013	896

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 1.00E-05 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 1.00E-03 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.

The 241-AZ-154 catch tank is an 867 gallon capacity catch tank located in AZ Farm. The tank has a breather

filter installed whose purpose is to minimize any radioactive particulates that may be emitted.

There is currently less than 100 gallons of waste stored in the tank. Current operational activities in this tank include level monitoring for leaks and intrusion by a variety of methods including dip tubes, manual tapes, zip cords, and ENRAFs; sampling tank contents, pumping tank contents, adding flush water used pursuant to ALARACT practices.

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

Alpha - 0	1.99E-11	Beta - 0	1.32E-08	Gamma - 0	1.27E-08
Based on 241Am		Based on 90Sr		Based on 137Cs	

4) **ALTERNATE APPROVAL-Annual Replacement**

The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm. (WAC 246-247-040(5) and WAC 246-247-075(4)).

Emission Unit ID: 1232

200W P-241S302-001

240-S-302

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 5.00 ft. 1.52 m. Stack Diameter 0.13 ft. 0.04 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		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.	Once per month.

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

The breather filter shall minimize the amount of radioactive particles emitted as a consequence of tank breathing due to barometric pressure changes. The emission unit is a passive breather filter ventilation that operates continuously. The 241-S-302 catch tank is a 17,670 gallon capacity catch tank designed to receive leakage, spills, line flushes and drainage associated with waste transfers through Diversion Box 241-S-151. Since isolation in 1987 the tank has received intrusion of snow melt and rainwater to its present level. A request for nomenclature change was submitted from WRPS 12-ECD-0060 on November 26, 2012, and received as IM 7471. The previous nomenclature was 241-S-302

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

Project Title	Approval #	Date Approved	NOC_ID
Operation of Breather Filter on 240-S-302 (Replaced NOC 865)	AIR 13-817	8/20/2013	894

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 1.00E-05 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 1.00E-03 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.

The 240-S-302 catch tank is a 17,670 gallon capacity catch tank located near S Plant. The tank has a breather filter installed whose purpose is to minimize any radioactive particulates that may be emitted.

Currently, there is currently less than 2,000 gallons of waste stored in the tank. Current operational activities in this tank include level monitoring for leaks and intrusion by a variety of methods including dip tubes, manual tapes, zip cords, and ENRAFs; sampling tank contents, pumping tank contents, adding flush water used pursuant to ALARACT practices.

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

<p>Am - 241 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.</p>	<p>Ce - 144 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.</p>	<p>Cm - 243 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.</p>
<p>Co - 60 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.</p>	<p>Cs - 134 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.</p>	<p>Cs - 137 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.</p>
<p>Eu - 152 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.</p>	<p>Eu - 154 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.</p>	<p>Eu - 155 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.</p>
<p>Nb - 94 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.</p>	<p>Pu - 239/240 3.05E+00 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.</p>	<p>Ra - 226 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.</p>
<p>RuRh - 106 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.</p>	<p>Sb - 125 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.</p>	<p>Sr - 89/90 1.58E+03 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.</p>

- 4) **ALTERNATE APPROVAL-Annual Replacement**
The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm. (WAC 246-247-040(5) and WAC 246-247-075(4)).
- 5) **ALTERNATE APPROVAL-Release Fraction**
Alternate approval is given to use a release fraction of 7.53 E-9 based on back calculations using in situ measurments of the control equipment efficiencies. (WAC 246-247-030 (21)(b)).
This approval cannot be used as a basis for other emission unit alternative approvals.
- 6) **CONDITIONAL ALTERNATIVE APPROVAL-NDA Testing of Filters**
Under passive ventilation pumping of waste contents for 240-S-302 shall require a post job Non Destructive Analysis (NDA) of the filter to validate previous NDA results, with results reported to WDOH. (WAC 246-247-040(5) and WAC 246-247-075(4)).