LB# 4457

AIR 15-808
NOC 942

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF RADIATION PROTECTION
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August 5, 2015

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

Re: Approval of Radioactive Air Emissions License (RAEL), Emission Unit (EU) Specific for EU 886, Notice of Construction (NOC) 942, to be Incorporated in the Next Revision of the Hanford Site RAEL (FF-01)

Mr. Smith:

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your EU specific license was approved on July 29, 2015 (per your email acceptance) for:

296-P-50 Operation - Phase II Waste Retrieval and Closure (Replaces NOC 825)
(EU 886, NOC 942)

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 Mr. Ernest McCormick at ernest.mccormick@doh.wa.gov or, by phone, at (509) 946-0624.

Sincerely,

John Martell, Manager
Radioactive Air Emissions Section

Enclosure: NOC 942 for EU 886: 296-P-50 Operation - Phase II Waste Retrieval and Closure (Replaces NOC 825)

cc: (see next page)

cc: Ruth Allen, WRPS
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Joan Woolard, MSA
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Environmental Portal
RAES Tracking: Follow up to LB# 4441; RAES 850 and 15-53; NOC 942; EU 886

Emission Unit ID: 886

200 W-296P050-001

296-P-50

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 50.00 ft. 15.24 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 91.72 ft/second. 27.96 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
	Deentrainer	1	Operational at all times, when exhauster is in use.
	Heater	1	Operational at all times, when exhauster is in use.
	Prefilter	1	
	HEPA Filter Stages/Banks	2	In series, two filters per stage/bank
	Fan	1	3000 cfm

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(2)	40 CFR 61, Appendix B Method 114	Sr-90, Cs-137, Am-241, Pu-239/240, 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, also known as POR127, is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently.

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

Project Title	Approval #	Date Approved	NOC_ID
296-P-50 Operation - Phase II Waste Retrieval and Closure (Replaces NOC 825)	AIR 15-808	7/29/2015	942

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 1.31E+00 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 1.61E+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 operation of the waste retrieval system(s) for the removal of radioactive wastes from tanks at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped to a receiver tank, staging tank, storage double shell tank (DST), or other staging/storage vessel associated with the supplemental treatment, packaging, or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUICING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving DST, recirculated supernatant/water, chemical agent, or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities. The vacuum waste retrieval system is introduced into the tanks by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste to a topside receiver tank, batch vessel, or a staging single shell tank (SST), storage DST, or other staging/storage vessels associated with supplemental treatment, packaging, or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the tanks. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B, and 241-T Tank Farms, a vacuum retrieval process tank, staging tank, staging SST, storage DST, or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the tank being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some tanks. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360

degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST, or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

MOBILE ARM RETRIEVAL SYSTEM

The Mobile Arm Retrieval System (MARS) is a waste retrieval system used to retrieve waste. The MARS employs two design options similar to currently permitted systems: 1) a sluicing retrieval option which is intended for retrieval of non leaker tanks, and 2) a vacuum retrieval option is intended for retrieval of assumed leaker tanks. Both options use an arm and sluicing jets and/or a high pressure water scarifier to break up the waste. The sluicer uses waste supernatant recycled from the DST to form a liquid jet using a nozzle. The scarifier uses filtered, pressurized water that comes from a high pressure water skid.

The equipment portion of the MARS includes a vertical, carbon steel mast (square cross section) as the main structural member. Attached to the vertical mast is a carbon fiber robotic arm. The arm is attached to a traveler that raises and lowers the arm relative to the vertical mast. The arm rotates 360 degrees - 380 degrees on a turntable located in the pit box. The arm also pivots up and down from an elbow at the traveler (hydraulic system) and extends and retracts (hydraulic system). The end of the arm articulates. The arm thus provides for a large range of motion such that the sluicing devices (recycle sluicer, water scarifier) located at the end of the arm can aim at most portions of the tank and from varying (e.g., short) distances.

The containment box which encloses the MARS will be ventilated by two parallel installed radial filters. The purpose of these filters is to minimize contamination from migrating up from the tank into the containment box via the open space on the large riser during retrieval operations. Minimization of contamination inside the containment box is desired should entry into the box ever be required for repairs. Inflow through these filters during retrieval is estimated to reach up to 60 cubic feet per minute (cfm). A valve will be installed between the filters and the containment box so filters can be isolated from the box. However, because the location of the valve will be approximately 12 feet above ground and difficult to reach without properly installed and inspected scaffolding, the valve will be left open at all times until retrieval of the tank is complete. Once retrieval is complete the valve will be closed.

REMOTE WATER LANCE

The completion of tank retrieval may also be aided by a Remote Water Lance (RWL) that is a high pressure water device, or hydro laser. Alternatively, a High Pressure Mixer (HPM) may be used in the same capacity. The systems will consist of both ex-tank and in-tank components. The ex-tank components will be comprised of; high pressure systems, operating controls, cables, and hoses. The in-tank components will be comprised of; umbilical, in-tank vehicle, high pressure nozzle(s), or the high pressure mixer.

The high pressure water systems will provide the water at the desired pressure, not to exceed 37,000 psig. A conditioning system will be used to filter the raw water entering the skid to ensure that no abrasive materials are entrained in the water. The water volumetric flow rate will be on the order of 4 to 18 gpm for the HPM and from 6 to 15 gpm for the RWL. The operating controls will be located in a control trailer outside of the farm fence. The cables and hoses will connect hydraulically powered in-tank vehicle with the ex-tank controls and water skid via the umbilical. The HPM consists of an adjustable height pipe with two pairs of opposed, high pressure, low volume water orifices located on the bottom of the pipe. The mixer is capable of being rotated 360 degrees and has an adjustable height range of approximately 7 feet. The positioning of the mixer is performed remotely using a hydraulic system. Additionally, the mixer has a single orifice on the bottom of the unit that can be used as an operational or installation aid. The in-tank vehicle will house one to four high pressure water nozzles. The RWL will be operated with the nozzle submerged to avoid aerosols in the tank. A rupture disc will be used to prevent reaching pressures above 37,000 psig.

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

Ac - 227 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.	Am - 241 2.30E+04 Contributes GREATER than 0.1 mrem/yr to the MEI and represents greater than 10% of the unabated PTE	Am - 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.
Ba - 137 m 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.	C - 14 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.	Cd - 113 m 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 - 242 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 - 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.	Cm - 244 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 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 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 2.10E+06 Contributes GREATER than 0.1 mrem/yr to the MEI and represents greater than 10% of the unabated PTE
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.	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.	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.
H - 3 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 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.	Nb - 93 m 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.
Ni - 59 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.	Ni - 63 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.	Np - 237 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.
Pa - 231 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.	Pu - 238 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.	Pu - 239 5.30E+03 Contributes GREATER than 0.1 mrem/yr to the MEI and represents greater than 10% of the unabated PTE
Pu - 240 1.20E+02 Contributes GREATER than 0.1 mrem/yr to the MEI and represents greater than 10% of the unabated PTE.	Pu - 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.	Pu - 242 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.
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.	Ra - 228 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.	Ru - 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.
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.	Se - 79 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.	Sm - 151 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.
Sn - 126 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.	Sr - 90 5.50E+06 Contributes GREATER than 0.1 mrem/yr to the MEI and represents greater than 10% of the unabated PTE	Tc - 99 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.
Th - 229 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.	Th - 232 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.	U - 232 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.

U - 233	U - 234	U - 235
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.	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.	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.
U - 236	**U - 238**	**Y - 90**
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.	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.	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 - 93		
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.		

4) RELEASE RATES-WDOH Log Approval
The annual possession quantity (APQ) shall be tracked on a WDOH approved log. WDOH authorizes approval of the Tank Waste Information Network System (TWINS) as the logging mechanism for APQs of radionuclide source terms (WAC 246-247-080(7)).

5) WDOH ALTERNATE APPROVAL-Release Fractions
WDOH accepts that the PTE calculation shall be based on the inventory of material to be managed (tank inventory and supernate) using the release fraction for the tank inventory of 1.0 E-3 for tank inventory and 8.0 E-5 for supernate (WAC 246-247-040(5) and WAC 246-247-060(5)).

6) WDOH ALTERNATE APPROVAL-Non Destructive Analysis Method
A pre-operational Non Destructive Analysis (NDA) of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the in-service date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA (WAC 246-247-040(5), WAC 246-247-060(5), and WAC 246-247-075(4)).

7) WDOH ALTERNATE APPROVAL-Standards
General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations. (WAC 246-247-040(5) and WAC 246-247-060(5)).

8) WDOH NOTIFICATION-Leak Testing Cannot be Performed
If new or altered section of ductwork cannot be tested due to tie-ins, WDOH will be notified (WAC 246-247-040(5) and WAC 246-247-060(5)).

9) WDOH NOTIFICATION-Change in PTE Calculations
The department will be notified if radionuclides other than Cs-137, Sr-90, Pu-239/240, and Am-241 are identified that contribute greater than 10% of the PTE or greater than 0.1 mrem/yr TEDE to the MEI when a unit is deployed or redeployed (WAC 246-247-040(5) and WAC 246-247-110(8)).

10) WDOH NOTIFICATIONS-Differential Pressure Out of Range
The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored recorded and trended a minimum of weekly. The exhaust system will be configured to automatically shut down at 5.9 inches of water (or less) pressure differential across the HEPA filter(s) for the first filter in series or multiple filters in series as indicated by the local readout. If the final HEPA filter in the system exceeds 5.9 inches of water pressure differential across the filter, the cause will be determined and WDOH will be notified through normal established channels (WAC 246-247-040(5) and WAC 246-247-060(5)).

11) WDOH NOTIFICATION-Retrieval Under Passive Ventilation Contitions
Retrieval activities shall occur under passive ventilation only when an exhauster can no longer be operated on a single shell tank due to structural concerns. The justification for structural concerns with the single shell tank shall be documented and provided to WDOH upon request. (WAC 246-247-040(5) and WAC 246-247-060(5))

12) WDOH NOTIFICATIONS-High Reading on Weekly Smear Surveys
Monitoring of breather filters during retrieval activities shall consist of weekly smear surveys 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. Levels above 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha shall be reported to WDOH. (WAC

246-247-040(5) and WAC 246-247-060(5))

13) STANDARDS-Startup Leak Testing
New or altered sections of ductwork shall be leak tested in accordance with the requirements of ASME AG-1 Section SA prior to use. Normal maintenance of the system (e.g., replacing gaskets, replacement of in kind components, flow profile analysis in the ductwork, air sampling from test ports in the duct, and demister flushing) are not considered to be alteration (WAC 246-247-040(5), WAC 246-247-060(5), and WAC 246-247-075(2)).

14) STANDARDS-Stack Monitoring Systems
The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements also referenced in 40 CFR 61 App. B, Method 114, Table 2 - Maintenance, Calibration, and Field check requirements (WAC 246-247-040(5), WAC 246-247-060(5), and WAC 246-247-075(2)).

15) ABATEMENT TECHNOLOGY-HEPA Filter Testing
The HEPA filters are in-place leak tested annually in accordance with a written procedure that addresses testing and visual inspections based on ASME N510 and ASME N511, and shall have a minimum efficiency of 99.95% (WAC 246-247-040(5), WAC 246-247-060(5), and WAC 246-247-075(2)).
In addition, the following conditions require in-place leak testing of the HEPA filters (the filter system to be retested):
•HEPA filter replacement
•Relocating the ventilation system exhauster

16) ABATEMENT TECHNOLOGY-Filter Protection
The relative humidity shall be maintained below 70%. If the relative humidity cannot be directly measured, the ventilation system exhauster operating temperature will be monitored daily to ensure that the appropriate temperature is maintained, based on psychometric charts and engineering calculations, so that the relative humidity remains below 70%. Daily Monitoring is not required over weekends and holidays when no waste disturbing activities are occurring (WAC 246-247-040(5) and WAC 246-247-060(5)).

17) ABATEMENT TECHNOLOGY-Temperature Values in the Airstream
The airstream temperature is also monitored to verify that it is below the 200°F limit established for continuous operation and 250°F limits established for periodic operation to protect the HEPA filters (WAC 246-247-040(5)).

18) ABATEMENT TECHNOLOGY-Ductwork Insulation
All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing, shall be insulated (WAC 246-247-040(5) and WAC 246-247-060(5)).

19) ABATEMENT TECHNOLOGY- Ventilation System Exhauster Suspension from Active Service
The following will be implemented when a ventilation system exhauster that has been connected to a radioactive source is shut down and placed in suspension from active service. The following items will be completed 90 days after suspension from active service. Suspension from active service begins when the permit required preventative maintenance tasks are suspended or 365 days from the last day of operation, whichever is sooner.
•Isolate (e.g., valve or blank off) the ventilation system exhauster unit from the source of radioactivity.
•Isolate (e.g., valve or blank off) the source of radioactivity (e.g., tank) or establish an alternative flow path through a registered emission point (e.g., passive filter or powered exhauster).
•Isolate the flow path downstream of the last stage of HEPA filtration by capping the stack or alternative location if the stack has been removed.
•Provide written notification to WDOH documenting completion of the above.
During suspension from active service, the monitoring and associated recordkeeping are not required to be conducted. In addition, the abatement and monitoring system testing (e.g., aerosol testing of the HEPA filters), maintenance, calibration, field checks, and the associated recordkeeping are not required to be conducted (WAC 246-247-040(5)) and (WAC 246-247-060(5)).

20) ABATEMENT TECHNOLOGY-Ventilation System Exhauster Return to Active Service
The ventilation system exhauster will be evaluated for its ability to meet the regulatory requirements to operate prior to placing the exhauster back in service:
•Verify that parts removed during suspension from active service have been replaced-in-kind and the unit has been returned to full function.
•Conduct abatement and monitoring system inspections and field checks.
•Verify that the abatement and monitoring system testing, maintenance, and calibration have been completed. (Note: some testing, maintenance, and calibration can only be completed when the exhauster is running.) The CAM and sampling system are to be operated during aerosol testing.

WDOH will be notified at least seven calendar days prior to conducting operational testing of the ventilation system exhauster (WAC 246-247-040(5) and WAC 246-247-060(5)).

21) CONTAMINATION CONTROL-Max Operating Pressure
During waste retrieval operations, the maximum pressure for any waste retrieval method shall not exceed 37,000 psig (WAC 246-247-040(5) and WAC 246-247-060(5)).

22) CONTAMINATION CONTROL-Monthly Radiological Survey
While the exhauster is operating, and/or tank waste retrieval is underway, all ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are not degrading (WAC 246-247-040(5) and WAC 246-247-060(5)).

23) CONTAMINATION CONTROL-Exhauster Alternate Usages
The exhauster will be operated occasionally during periods of non-retrieval in support of tank waste retrieval preparation activities and to aid in evaporation of residual flush water or sluicing liquid that remains in the tank (WAC 246-247-040(5) and WAC 246-247-060(5)).

24) CONTAMINATION CONTROL-Active ventilation
All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (staging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH. If the exhauster goes down due to off-normal conditions while retrieval is occurring, the system should be placed into a safe configuration, minimizing dose to personnel and the environment. These steps may include: flushing the lines, pumps, and the waste transfer system of slurry solution using DST supernatant or water; pumping down the tank liquid to minimize remaining liquids; and halting waste retrieval. (WAC 246-247-040(5) and WAC 246-247-060(5))