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AIR 15-211  
ALARACT 06.2

STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
OFFICE OF RADIATION PROTECTION  
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February 24, 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

Dear Mr. Smith:

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your revised As Low as Reasonably Achievable Control Technology (ALARACT) demonstration 06.2 is approved as of February 24, 2015:

**ALARACT 06.2: Tank Farm ALARACT Demonstration for Pit Access  
(Revision 06.2 replaces 06.1)**

The conditions, controls, monitoring requirements, and limitations of this ALARACT demonstration must be observed in order for you to be in compliance with WAC 246-247. Failure to meet any provision of this ALARACT demonstration 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 Crystal Mathey at (509) 943-5216.

Sincerely,

P. John Martell, Manager  
Radioactive Air Emissions Section

Enclosure: ALARACT 06.2

cc: (see next page)



Mr. Kevin W. Smith  
February 24, 2015  
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cc: Ruth Allen, WRPS  
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Environmental Portal  
RAES Tracking: Resp. to IM# 4,266; Line 1028

## ALARACT 06.2

### TANK FARM ALARACT DEMONSTRATION FOR PIT ACCESS

#### 1. Description of Activity

*This ALARACT demonstration applies to all pits, caissons, and filter pits which have the potential for exposing tank waste to the pit environment, except 241-ER-152, 241-S-151, 241-UX-154, 241-TX-154, 244-CR Vault DCRT, 244-A Lift Station DCRT, and 244-TX DCRT which must follow an approved Notice of Construction.*

*If the work activities are such that they can be performed without removal of the pit covers, the controls listed in this ALARACT demonstration do not apply. Instead, the work shall be performed using appropriate controls from the latest revision of HNF-5183, "Tank Farms Radiological Control Manual" and the latest revision of TFC-ESHQ-RP\_RWP\_C-02, "Radiological Containment". Activities which may be conducted in this manner include pit videos/borosopes, filling seal loops, valve handle change-out, pit wash-downs or other decontamination activities, fixative application, radiological surveys, remote operation of pit drains, leak detector troubleshooting or change-out, pit drain leak rate tests, core drilling cover blocks and removal or insertion of gas sampling lines. Any activity not included in the list must be approved by WDOH on a case-by-case basis.*

*Pits that do not have the potential for exposing tank waste to the pit environment do not require implementation of ALARACT controls for entry. Examples include flush pits, service pits, annulus pump pits and leak detection pits. These pits shall be accessed using appropriate controls from the latest revision of HNF-5183, "Tank Farms Radiological Control Manual" and the latest revision of TFC-ESHQ-RP\_RWP-C-02, "Radiological Containment".*

#### PREPARATION WORK:

A pre-job survey is performed on the exterior surface of the pit and the surrounding area.

A splashguard (monitorable surface) is installed around the pit.

Before the pit covers are removed, an approved fixative may be applied inside the pit and/or the pit may be decontaminated. These processes are generally performed through an access port. If there is no access port(s), the pit covers are raised and suspended to provide access. A radiological survey is performed, and/or fixative may be applied inside the pit. The pit covers are then removed when necessary to perform work inside the pit. With the pit covers off, additional decontamination activities may include the use of chemicals, peel and strip paints, water, or manual scrub brushes.

A temporary or permanent cover is installed over the pit if ever left unattended.

After all activities in the pit are completed, the pit covers are reinstalled and the splashguard is removed.

#### Laydown area:

If work is not feasible to be performed in a pit, equipment may be removed from the pit and placed in an adjacent laydown area. The laydown area will border the pit and be monitored for contamination. Examples for when a laydown area may be used include wrapping equipment (e.g. jumpers, valves, pumps, sump pumps, cover blocks, cover plates), replacing equipment (e.g. gaskets, leak detectors, valves, funnels, piping, jumpers), and other repairs on equipment.

#### 2. Controls

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1).

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4).

c. The pit covers are lifted and contained if the removable contamination level is greater than 50,000 disintegrations per minute (dpm)/100 square centimeters (cm<sup>2</sup>) beta-gamma and 70 dpm/100cm<sup>2</sup> alpha and moved to a storage area.

d. Uniformly distributed removable contamination levels within the pit are decontaminated to less than 100,000 dpm/100cm<sup>2</sup> beta-gamma and 2,000 dpm/100cm<sup>2</sup> alpha by washing and/or applying an approved fixative. A device to reduce contamination may be inserted through an opening in the pit to reduce contamination by applying water and/or fixative into the pit. An approved fixative will be applied to pit surfaces if contamination levels exceed the limits stated above or as needed.

Note: The fixative will adhere to the contamination to ensure minimization of potential airborne contamination.

e. Swipes will be taken on the splashguard surface facing the interior of the pit and the laydown area. Splash guards and laydown area are to be maintained below 50,000 dpm/100cm<sup>2</sup> beta-gamma and 70 dpm/100cm<sup>2</sup> alpha.

f. Use a splashguard extending to the edge of the pit. The splashguard will be taped or sealed to the edge of the pit. If it is not feasible to seal the splashguard to the edge of the pit, an additional rail will be installed at the base of the handrail and the splashguard will be taped or sealed to that bottom rail or sealed to the matting or groundcover around the pit. This rail will be as close as possible to the pit edge. A ground cover is then placed around the edge of the pit and extends under the bottom rail. Alternative configurations for splashguards are listed below in f.(a).

f.(a). Alternative configurations for the splashguard include:

1. For above ground pits, the pit wall may be used as the splashguard and the groundcover will be secured to the top of the pit wall and draped over the exterior side of the pit wall and on the ground around the pit.

2. For above ground pits, the splashguard may extend from the inside of the pit wall in addition to being draped over the outside of the pit wall.

3. For pits that are partially above grade, an alternative is to use a combination of pit wall and railing to support the splashguard.

4. In cases where a weather enclosure is placed around the pit, the interior of the weather enclosure may be used as the splashguard.

5. A single or double gate may be placed in the splashguard to allow pit access.

6. If a laydown area is used the area will be covered by plastic to form a base layer and enclosed within a splash guard. A layer of matting will then be used to protect the base or barrier layer.

Note: Additional layers of plastic may be placed on top of the matting to wrap equipment when needed.

The splash guard and plastic would control the spread of any contamination outside the laydown/wrapping area and the matting will ensure that the base plastic layer remains intact. The laydown area may be located next to the pit with a single splash guard around both areas. Single or double gates may be placed in the splashguard for access purposes.

f.(b) In instances where the splashguard and the pit equipment are in close proximity, a slit or flap may be installed in the splashguard. The slit or flap will be sealed when not in use and can only be used for short periods of time (typically less than an hour) and when no other pit activities that could displace contamination are occurring unless the opening in the splashguard is closed.

1. The time that the slits or flaps are open shall be minimized.
2. Slits and flaps shall be sealed when not in use.
3. No activities which have the potential to disturb removable contamination greater than 5,000 dpm/100cm<sup>2</sup> beta-gamma and/or greater than 70 dpm/100cm<sup>2</sup> alpha, shall occur when the flaps or slits are open.

g. If sustained wind speeds are >25 miles per hour (mph), then do not open pits.

h. A local wind speed device may be utilized in lieu of Hanford Meteorological Station readings, if local wind speed readings are taken in an unobstructed location representative of the work area.

i. A local wind speed device is used to measure wind speeds, then the use of the local wind speed device and the measured wind speed readings must be documented in the Work Record.

j. HPT coverage will be performed as specified in the Radiological Work Permit.

k. Use approved Containment Selection Guide, Attachment A, found in the latest revision of TFC-ESHQ-RP\_RWP\_C-02, Radiological Containment.

l. Active ventilation may be utilized in accordance with the PTRAEU NOC.

m. Core drilling through a pit cover (cover block or cover plate) shall be performed in accordance with contamination controls as specified in the latest revision of HNF-5183, Tank Farms Radiological Control Manual and the latest revision of TFC-ESHQ-RP\_RWP\_C-02, Radiological Containment and below:

1. Verify fixed and removable contamination is less than 5,000 dpm/100cm<sup>2</sup> beta-gamma and less than 70 dpm/100cm<sup>2</sup> alpha in the area to be core drilled or decontaminate to below these levels utilizing non-vigorous hand methods (wiping or scraping) in areas to be core drilled.
2. If decontamination is unsuccessful, cover the area to be core drilled with fixative or tape (tape must be substantial, such as duct tape) minimizing the potential of airborne contamination during the initial drilling.
3. Ensure drill bit is kept wet during core drilling.
4. Verify fixed and removable contamination is maintained less than 5,000 dpm/100cm<sup>2</sup> beta-gamma and less than 70 dpm/100 cm<sup>2</sup> alpha during and after core drilling.

n. Radiologically contaminated material with removable contamination greater than 50,000 dpm/100cm<sup>2</sup> beta-gamma and greater than 70 dpm/100cm<sup>2</sup> alpha left in the laydown area must be wrapped if left

unattended.

o. The pit covers are lifted and contained if the removable contamination level is greater than 50,000 dpm/100cm<sup>2</sup> beta-gamma and 70 dpm/100cm<sup>2</sup> alpha and moved to a storage area.

p. A temporary or permanent cover is placed over the pit if the pit is ever left unattended.

**3. Monitoring**

a. At a minimum, pre and post-job contamination surveys (smears) shall be taken.

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.

**4. Records/Documentation**

a. Work Package

b. Radiological Work Permit

c. Radiological survey report(s)

**5. Emission Pathway**

a. Existing passive non-point source.

**6. Facility Description**

a. This ALARACT demonstration applies to all Tank Farm pits except 241-ER-152, 241-S-151, 241-UX-154, 241-TX-154, 244-CR Vault DCRT, 244-A Lift Station DCRT, and 244-TX DCRT.