

# Proposed Permit Changes to Hanford's Dangerous Waste Management Area at the Plutonium-Uranium Extraction Plant (PUREX)

The U.S. Department of Energy Richland Operations Office (DOE-RL) is holding a 60-day comment period on a proposed change to the Hanford Facility's Dangerous Waste Permit. This change proposes that two storage tanks located near the PUREX Plant, be closed by removing the tanks, associated ancillary equipment, and secondary containment structures and up to one meter of soil beneath the structures. This closure plan will be a Class 3 modification to the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit. Class 3 permit changes call for a 60-day comment period led by the permittee (DOE) and a public meeting, followed by a 45-day comment period led by the Washington Department of Ecology.

July 2016

U.S. Department of Energy

## Background

The Plutonium-Uranium Extraction Plant (PUREX) is located in the 200 East Area of the Hanford Site, as shown in Figure 1. PUREX was the fifth and final processing canyon built at Hanford and was used to recover plutonium from irradiated fuel rods. PUREX began operations in 1956 and ran until 1972, and again from 1983 until 1988.

The PUREX facility is comprised of the PUREX canyon building (202A), two storage tunnels, several support structures including chemical storage areas, cribs, and retention basins. Two of the PUREX support areas, the 203A acid storage area and the 211A chemical storage area, housed chemical storage tank systems, including tanks TK-P4 and TK-40 and associated ancillary equipment.

The PUREX Plant tank systems were used to treat liquids generated during the PUREX process, for acceptance to the double-shell tank system.

The 203A acid storage area and the 211A chemical storage area are located north of the PUREX canyon building (202A). Tank TK-P4 is a 106,000 gallon tank located in the southeast corner of the 203A acid storage area. Tank TK-40 is a 65,000 gallon tank located in the northeast corner of the 211A chemical storage area (see Figure 2). Both contain reinforced-concrete, diked secondary containment structures (see Figure 3).

Tank TK-P4, located in the 203A acid storage area, was used to store recovered uranyl nitrate hexahydrate resulting from PUREX fuel reprocessing operations. Tank TK-40, in the 211A north tank area, was used to store slightly contaminated tributyl phosphate organic solvent.

### Class 3 Modifications:

Class 3 permit modifications address changes that substantially alter a facility or its operations.

Class 3 modifications require two public participation opportunities:

- A minimum 60-day public comment period on the permit modification request, including a public meeting.
- A minimum 45-day public comment period on the permitting decision.

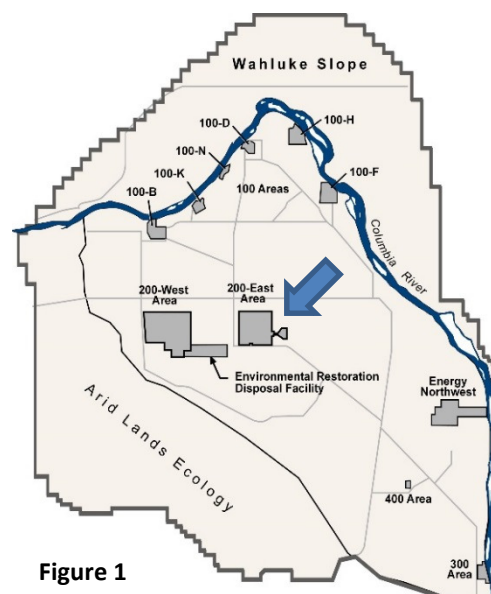


Figure 1

During the 1990s the PUREX Plant transitioned from operations to a deactivation mission. During deactivation, tanks TK-P4 and TK-40 were flushed and emptied to the lowest achievable volume, with minimal residual waste left in the tanks. Since 1998 both of the tanks have been under the Surveillance and Maintenance activities described in *DOE/RL-98-35, Surveillance and Maintenance Plan for PUREX*, while awaiting final disposition.

### Proposed Closure Strategy

Under the proposed closure plan the tanks, associated ancillary equipment, the secondary containment structures, and the soil beneath the containment structures will be “clean closed”. As required by Section 6.3.1 of the Tri-Party Agreement Action Plan, soil sampling must demonstrate that the soil was not adversely affected by operations. Additionally, the closure performance standards of Washington Administrative Code (WAC) 173-303-610(2)(a)(i) through (iii) require that closure will accomplish the following objectives:

- Minimize the need for future maintenance
- Control, minimize, or eliminate post-closure escape of dangerous waste/dangerous waste constituents to the ground, surface water, groundwater, or the atmosphere to the extent necessary to protect human health and the environment
- Return the land to the appearance and use of surrounding land areas

Tanks TK-P4 and TK-40 are above grade and will be clean closed by first removing the insulation on the outside of the tanks, which contains suspected asbestos, using current asbestos removal procedures that will be performed in accordance with methods approved by the regulators. After the asbestos is safely removed, the tanks will be opened and contents verified, and absorbents added to stabilize any remaining liquids in the tanks. Following that, the tanks will be cut into pieces at their current location using appropriate containment measures and protective controls, such as barriers or additional temporary containment structures. After the size reduction, the storage tanks, concrete secondary containment structures and the soil beneath the

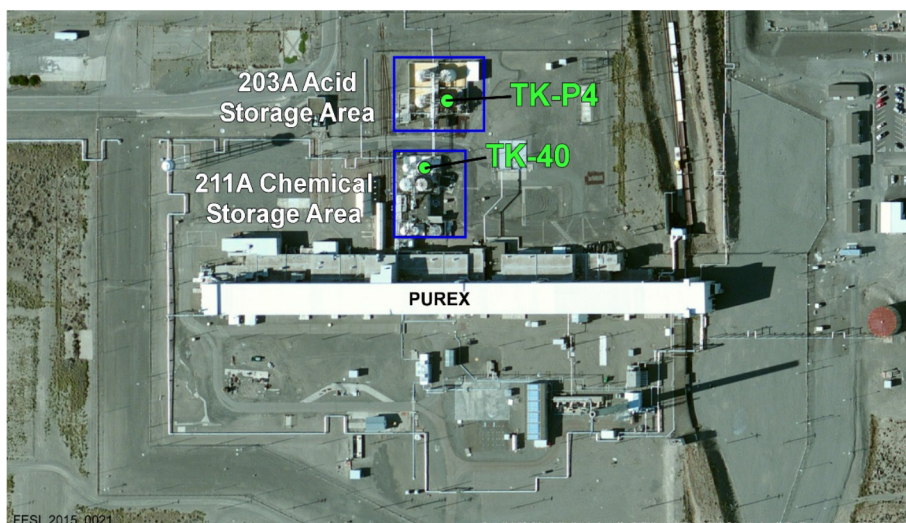


Figure 2: Tanks TK-P4 and TK-40, located in the 203A and 211A storage areas at the PUREX Plant

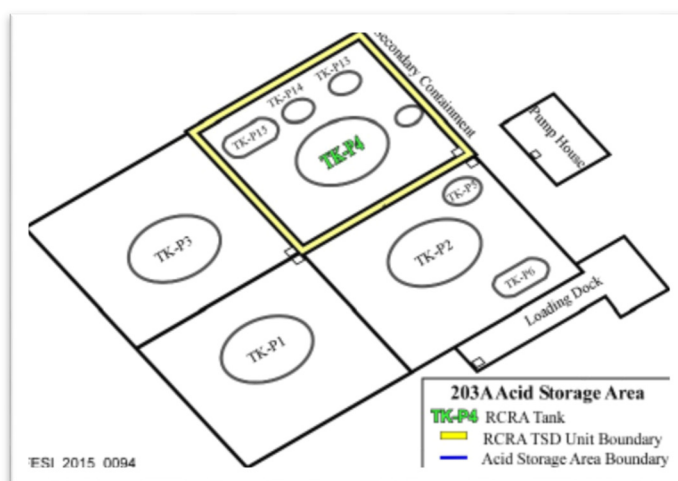
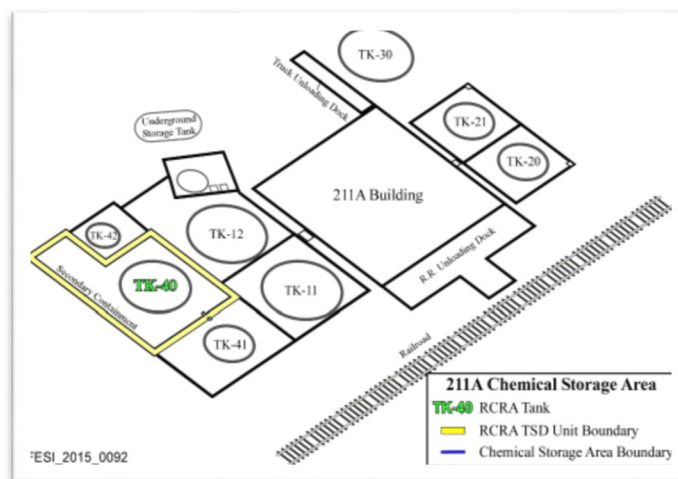


Figure 3: 203A and 211A storage areas and secondary containment areas



containment structure to a depth of up to 3 ft (1 m) will be removed and disposed of, to meet the requirements of WAC 173-303-610(2)(b)(ii). After removal, sampling of the area beneath the Resource Conservation and Recovery Act (RCRA) tank containment area will be sampled as detailed in the closure plan to confirm clean closure standards in WAC 173-303-610(2)(b)(i) have been met.

Waste will be treated and disposed of to meet all applicable requirements in WAC 173-303-140, "Land Disposal Restrictions," and, by reference, 40 CFR 268, "Land Disposal Restrictions," prior to disposal at the Hanford Site Environmental Restoration Disposal Facility (ERDF), in accordance with ERDF waste acceptance criteria, or an approved RCRA treatment, storage and disposal unit.

The DOE-RL contact person for this permit modification request is Rich Buel, (509) 376-3375. The Washington Department of Ecology (Ecology) contact person is Stephanie Schleif, (509) 372-7929.

The permittees' compliance history during the life of the permit being modified is available from Ecology.

Copies of the permit modification request and supporting documentation are available at the Administrative Record, 2440 Stevens Drive, Richland, WA.

Alternatively, the proposed permit modifications and supporting documents can be accessed online: <http://bit.ly/29CAHQs>

## How you can get involved

Comment period – July 18 through September 16, 2016  
Public meeting – August 31, 5:30 pm, Richland Library (955 Northgate Drive)  
**Please submit comments by *September 16, 2016* to:**



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**U.S. Department of Energy**  
Richland Operations Office  
P.O. Box 550, A7-75  
Richland, WA 99352

The documents are available for review at the Public Information Repositories listed below

### HANFORD PUBLIC INFORMATION REPOSITORY LOCATIONS

#### **Portland**

Portland State University Library  
Government Information  
Branford Price Millar Library – LIBW  
PO Box 1151  
Portland, OR 97207-1151  
Attn: Claudia Irla (503) 725-4542  
Map: <http://bit.ly/1K7BfuK>

#### **Richland**

U.S. Department of Energy Public Reading Room  
Washington State University, Tri-Cities  
Consolidated Information Center, Room 101-L  
2770 University Drive  
Richland, WA 99352  
Attn: Janice Scarano (509) 375-7443  
Map: <http://bit.ly/1LpZKUa>

#### **Seattle**

University of Washington  
Suzzallo Library  
Box 352900  
Seattle, WA 98195-2900  
Attn: Hilary Reinert c/o ARCS  
(206) 543-5597  
Map: <http://bit.ly/1QMtUog>

#### **Spokane**

Gonzaga University  
Foley Center Library  
East 502 Boone Avenue  
Spokane, WA 99258  
Attn: John Spencer (509) 313-6110  
Map: <http://bit.ly/1Cp0mRT>

#### **Administrative Record and Public Information Repository**

2440 Stevens Center Place, Room  
1101, Richland, WA  
509-376-2530

<http://pdw.hanford.gov/arpir/>