THE HANFORD SITE

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Hanford Draining Last Reactor Fuel Storage Basin

Removal of Contaminated Water Further Protects Columbia River

RICHLAND, Wash. – The U.S. Department of Energy is draining the last large concrete basin at the Hanford Site that stored reactor fuel rods during the World War II and Cold War era plutonium production mission.

Workers are pumping out contaminated water from the 1.2-million-gallon basin in the K West Reactor and hauling it by tanker truck to a nearby treatment facility. Completing this project will further enhance the protection of groundwater and the Columbia River as the cleanup effort at Hanford progresses.

“Getting the contaminated water out of this basin is a key step in our risk-reduction mission,” said Andy Wiborg, the Department’s acting deputy assistant manager for River and Plateau cleanup. “This effort will eliminate the risk of a leak of contaminated water to the groundwater about a quarter-mile from the Columbia River.”

The K West Reactor and nearby K East Reactor were built in the 1950s and operated through the early 1970s to irradiate uranium fuel rods for chemical processing to produce plutonium. The basins in both reactors also stored irradiated, or spent, fuel from the last operating nuclear reactor at Hanford, N Reactor.

The Hanford team will drain the basin and stabilize it with grout for future demolition. Teamwork among Hanford contractors is a key factor in the ongoing success of the project.

Department contractor Central Plateau Cleanup Company is leading the project and has filled more than 60 tanker trucks to date holding about 8,000 gallons each. Contractor Hanford Mission Integration Solutions is driving them to an onsite treatment facility.

Washington River Protections Solutions will process the wastewater at Hanford's Effluent Treatment Facility to remove contaminants for disposal in lined, engineered trenches.

"The collaboration between Hanford contractors reinforces the value of our One Hanford approach, with everyone working together to keep the cleanup mission moving forward," said Wiborg.

The K West Reactor basin is 125 feet long and 65 feet wide and was filled with 16 feet of water when operating. The water cooled the uranium fuel pushed out of the reactor core and shielded workers from radiation as they stood above on grates to move the fuel into storage bins.

To prepare the basin for draining, cleanup workers stood on those same grates and used long-handled tools to move radioactive equipment and debris into underwater bins and steel tubes. The debris included canisters that held spent fuel, canister racks, pumps, hoses, hand tools, construction materials, and components of a water treatment system.

"The work by multiple teams to characterize, sort and stage debris in the basin has made it possible for us to begin to remove the water and prepare for grouting the basin," said CPCCo's Mike Kruzic, who manages closure projects at the reactor area. "It is also great to see the teamwork between three Hanford contractors committed to advancing this risk-reduction project."

The first tanker truck filled with contaminated water from the K West Reactor spent-fuel storage basin arrives at Hanford's Effluent Treatment Facility for processing.

The Department of Energy (DOE) is engaged in one of the great public works of this century at the Hanford Site near Richland, Washington. Responsible for the federal government's cleanup of the legacy of more than 40 years of producing plutonium through the 1980s, DOE is transforming the site back into a 24/7 operations mode to treat tank waste from the production era. The DOE Office of River Protection (ORP) is responsible for the safe and efficient retrieval, treatment and disposal of the 56 million gallons of chemical and radioactive waste stored in Hanford's 177 underground tanks. The mission includes building and commissioning the world's largest radioactive waste treatment plant, which will immobilize the legacy tank waste through vitrification. The DOE Richland Operations Office is responsible for all remaining Hanford cleanup and is currently focused on stabilizing and demolishing former plutonium production structures, excavating and disposing of contaminated soil and waste, treating contaminated groundwater, and configuring Hanford Site infrastructure for the future, with an emphasis on supporting the tank waste mission. Hanford Site work is conducted by a federal and contractor workforce of approximately 13,000 personnel. Visit www.hanford.gov for more information about the Hanford Site.