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THE HANFORD SITE

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Media Contacts:

Geoff Tyree, DOE, (509) 376-4171, geoffrey.tyree@rl.doe.gov

Mark McKenna, WRPS, (509) 376-5639, mark_mckenna@rl.gov

Hanford Workers Retrieving Waste from Another Single-Shell Tank

RICHLAND, Wash. – The Department of Energy (DOE) continues to make substantial progress in its mission to safely and efficiently reduce risk at the [Hanford Site](#) by managing and retrieving millions of gallons of radioactive waste stored in massive [underground tanks](#).

DOE tank operations contractor Washington River Protection Solutions (WRPS) recently began retrieving waste from single-shell Tank AX-104 and transferring the waste to a newer, more robust double-shell tank for safe storage. To date, workers have completed waste retrieval from 17 of Hanford's single-shell tanks.

"Moving waste into the double-shell tank system helps reduce risk to the environment and allows for safe storage of the waste until it can be treated," said Brian Harkins, DOE Office of River Protection deputy assistant manager for tank farms.

Tank AX-104, one of four tanks that make up Hanford's AX Farm, contains more than 5,000 gallons of highly radioactive sludge-like material on the tank floor and 2,000 gallons of the material on the tank walls. The retrieval strategy for the 1-million-gallon-capacity tank involves mobilizing the waste by using pressurized water directed through robotic sluicing equipment, then pumping the slurry to a double-shell tank for safe storage.

Workers set the stage for retrieval of Tank AX-104 by carefully removing highly contaminated legacy equipment from the tank — such as pumps and thermocouples — and installing waste retrieval infrastructure in AX Farm. A thermocouple is a device that measures the temperature of waste.

The infrastructure included a new ventilation system to filter emissions and a state-of-the-art facility that houses the water supply systems used to support retrieval activities. The in-tank waste retrieval system consists of three cannon-like sluicers, a central pump, and six camera and lighting systems. Sluicers are used to mobilize the waste and move it to a central pump.

Established safety controls will be in place throughout the entire retrieval process. DOE and WRPS also used lessons learned from previous retrieval projects to help keep workers safe.

"We have a highly skilled, innovative team with a strong track record of meeting the unique challenges that come with tank waste retrieval. For all retrieval projects, we develop a thorough project plan, choose the right tools for the job, and complete work safely," said Doug Greenwell, WRPS retrievals manager.



Dave McCary, a nuclear chemical operator for Department of Energy contractor Washington River Protection Solutions, maneuvers robotic sluicing equipment to remove waste from Tank AX-104, one of four single-shell tanks that make up the AX Tank Farm. Each of the tanks has a capacity of 1 million gallons.



Workers are retrieving waste from single-shell tank AX-104 at the Hanford Site. The waste is being transferred to a more robust double-shell tank for safe storage.

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 11,000 personnel. Visit www.hanford.gov for more information about the Hanford Site.



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