Hanford Makes Tank Waste Retrieval Progress at A/AX Complex

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Waste retrieval from Tank AX-101, the last of four tanks to be retrieved in the Hanford Site's AX Farm, is set to begin this fall. This in-tank photo shows the salt-based waste and the tank's 22 air-lift circulators.

RICHLAND, Wash. – Tank by tank, batch by batch, the **EM** Office of River Protection (**ORP**) and tank operations contractor Washington River Protection Solutions (WRPS) are reducing risk to the environment by retrieving waste from the **Hanford Site**'s single-shell waste-storage tanks.

Less than five years after completing retrieval of waste in the last tank in the C **Tank Farm**, crews have completed field retrieval operations at three of the four tanks in AX Farm and are now installing retrieval equipment in the fourth, Tank AX-101. All the while, the team is implementing new tools and techniques to streamline the retrieval process and enhance safety.

"Moving waste from older single-shell tanks to newer double-shell tanks ensures continued safe storage until we send the waste to the Waste Treatment and Immobilization Plant for vitrification, or immobilization in glass," said Delmar Noyes, ORP assistant manager for Tank Farms.

Tank AX-102 was the first tank to be retrieved in AX Farm. The tank is Hanford's 18th single- shell tank to be retrieved. While field operations in Tanks AX-103 and AX-104 are complete, the tanks are still in the technical review process that is required before they can be added to the list of retrieved tanks.

Most recently, workers installed the first of three extended-reach sluicers in Tank AX-101 that will be used for waste retrieval. The sluicers break up and mobilize solid waste in the tank.

The retrieval plan is to use sluicing and high-pressure water technologies to remove approximately 320,000 gallons of salt-based waste and transfer the waste in batches to a double-shell tank for continued safe storage. Retrieval operations are scheduled to begin at Tank AX-101 this fall.

"We're making tremendous progress in retrieving tank waste," said Dave Carlile, who manages retrieval operations for WRPS. "We've got a talented team that demonstrates excellent teamwork and communication with a focus on doing the work safely. We use lessons learned from each retrieval project to develop plans for the next tank, and we improve our ability to anticipate and troubleshoot any issues we face along the way."

Crews safely remove legacy equipment from the Hanford Site's A Farm to prepare for future waste retrievals.

While AX-Farm retrieval activities progress, workers continue to install the infrastructure to support future retrieval operations in A Farm, the next tank farm to be retrieved. Crews are hand-digging trenches and installing electrical systems.

Some of the most hazardous work is preparing tank pits for installation of retrieval equipment, such as pumps and sluicers, and associated equipment. The pits are located above tanks and provide access to the tank, pumps and monitoring equipment. Before they can clean out old pits, some of which have not been entered in 40 years, crews must remove old concrete covers. The crews perform video inspections and collect in-pit radiation level measurements to safely remove the large covers and allow workers to begin cleanout activities.

"In many cases, we don't have good notes on the tank's operational history, so we take a deliberate approach when entering tank pits to ensure worker safety," said

Gary Hopkins, construction manager for the WRPS retrievals organization. "Oftentimes we run into situations where we need to develop and deploy special tools to remove old, contaminated equipment to allow for pit cleanouts."

Once removed by crane, the covers are packaged and shipped to the **Environmental Restoration Disposal Facility**, Hanford's engineered landfill for disposal of low-level radioactive waste. Temporary steel plates are installed to cover the pits to support construction work. During retrieval, the steel covers and shield boxes are used to protect workers from radiation.