



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
ENVIRONMENTAL  
MANAGEMENT

## Evaporator Campaigns Create 300,000 Gallons of Double-Shell Tank Space

May 31, 2016



The 242-A Evaporator removes water from tank waste and reduces the volume stored in the double-shell tanks to make room for waste retrieved from single-shell tanks until it can be permanently disposed.

**RICHLAND, Wash.** – Hanford's **242-A Evaporator** recently conducted back-to-back operating campaigns, creating approximately 300,000 gallons of double-shell tank waste storage space.

It was the fifth and sixth operating campaigns since the facility **returned to service in September 2014** following a four-year shutdown for upgrades.

The evaporator reduces the volume of material in the tanks, freeing up storage space in the site's 27 operating double-shell tanks. Waste is being moved from the older single-shell tanks into newer and safer double-shell tanks until it can be sent to the **Waste Treatment and Immobilization Plant** for vitrification, which creates a solid glass form for the waste that facilitates long-term storage.

Previous evaporator operating campaigns in late 2014 and in 2015 created nearly 2 million gallons of high-level waste storage space – the equivalent of two double-shell waste tanks.

“The 242-A Evaporator is crucial to the safe operations of the tank farms. Our operating campaigns maximize our available double-shell storage capacity,” says Mark Lindholm, president and project manager for tank operations contractor Washington River Protection Solutions. “This enables us to continue retrieving waste from the next single-shell tanks.”

Since beginning operation in 1977, the evaporator has removed more than 80 million gallons of liquid from Hanford's tank waste. In the evaporator, liquid tank waste is heated under vacuum so it will boil at a temperature of about 125 degrees F. Water vapor from the boiling waste is captured, condensed, filtered, and sent to the Effluent Treatment Facility for additional treatment and disposal. The concentrated waste is returned to a designated double-shell tank.

“The evaporator will continue to play a critical role in tank operations for decades to come,” says Lindholm. “To prepare for that role, we have made upgrades with future operations in mind.”

Over the past four years, a number of upgrades have been completed to the evaporator, including the building exhaust system and changes to equipment and operating procedures.

The evaporator team recently fabricated and installed two upgraded condenser drain lines that replaced the original lines to drain condensate from the secondary waste processing condensers. The maintenance team also replaced two half-ton crane hoists in the evaporator canyon and worked more than 50 preventive-maintenance tasks to prepare for the operating campaign. The team is also preparing for electrical work to take place immediately following the operating campaigns.