

THE HANFORD SITE

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Media Contacts:

Staci West, Bechtel, (509) 378-0308, sawest@bechtel.com

Paul Noel, DOE, (509) 221-0731, paul.noel@rl.doe.gov

Hanford Completes Critical Loss of Offsite Power Test for Waste Treatment Plant



Commissioning Technician Ruben Fuentes participates in the loss-of-offsite-power test for Hanford's Waste Treatment and Immobilization Plant from the switchgear building.

RICHLAND, Wash. - Hanford's [Waste Treatment and Immobilization Plant](#) has successfully completed a loss-of-offsite-power commissioning test, a critical step toward the heatup of melters and [vitrification](#), or immobilization within glass, of [Hanford's](#) radioactive and chemical tank waste for disposal.

When offsite power was cut during the [test](#), plant personnel activated backup power to keep critical safety systems operational while they worked through procedures to restore power to the plant.

"Our proficiency in responding to a loss of offsite power is important, because during 24/7 plant operations, each of our shift crews needs to be able to respond appropriately," said Rick Holmes, general manager for the Waste Treatment Completion Company, a subcontractor to project lead Bechtel National, Inc. "They need to place the plant in a safe configuration and restore power to the melters to ensure they stay at their operating temperature."

Offsite power is provided to the plant by infrastructure managed by contractor Hanford Mission Integration Solutions (HMIS). To "cut" offsite power, HMIS remotely opened the primary power supply breaker to the plant and then closed it once the test was completed.

The ability to restore power to the plant is critical. Two melters inside the plant's Low-Activity Waste (LAW) Facility will immobilize radioactive and chemical waste in a glass form. Once a melter has reached its operating temperature of 2,100 degrees Fahrenheit, it must remain at temperature for its entire lifespan. If a melter were to cool and the glass inside became solid, the melter would need to be replaced. The first melter will be brought up to temperature in the next few months.

"Achieving this milestone brings us a significant step closer to initiating melter heatup," said Mat Irwin, U.S. Department of Energy [Office of River Protection](#) deputy assistant manager for the plant. "The training has paid dividends and brings us one step closer to vitrification."



Waste Treatment and Immobilization Plant employees walk through and execute procedures to bring systems online inside the switchgear building during the loss-of-offsite-power test.

The entire Hanford Site is preparing for a shift to 24/7 operations by the end of 2023, when vitrification of tank waste is scheduled to begin as part of EM's Direct-Feed Low-Activity Waste ([DFLAW](#)) Program. The DFLAW Program is a system of interdependent projects and infrastructure improvements, managed and highly integrated, that must operate together to vitrify the waste.

During vitrification, waste treated to remove radioactive cesium and solids at a tank farm will be fed directly to the LAW Facility's melters. The waste and glass-forming materials will be mixed, heated, and poured into specially designed stainless-steel containers. The containers will be transported a short distance to the site's [Integrated Disposal Facility](#) for disposal.

The 300-ton Hanford melters are each four times larger than the one in operation at DOE's [Defense Waste Processing Facility](#) at the [Savannah River Site](#) in South Carolina. Hanford's [LAW Facility](#) is designed to vitrify 5,000 gallons of low-activity waste a day — or 1.75 million gallons a year — when operating at full capacity.

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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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