

THE HANFORD SITE

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Hanford Tank-Side Cesium Removal System Readied to Treat Tank Waste

RICHLAND, Wash. – The Hanford Site is on the verge of initial radioactive and chemical waste treatment.

Today, the U.S. Department of Energy announced construction and readiness assessments are complete on the Tank-Side Cesium Removal (TSCR) system at Hanford, a [DOE 2021 priority](#).

Transitioning TSCR from the building and testing phase to operations is a major step toward treating tank waste.

Click [here](#) to view a ceremony marking the completion of TSCR construction and readiness assessments, as well as additional TSCR information. ([Click here to access raw video and interview sound bites.](#))

“Completing TSCR construction this year was a top priority for the Department of Energy’s Office of Environmental Management,” said Brian Vance, manager of the DOE Office of River Protection and Richland Operations Office. “For the first time, we will be able to treat a significant amount of Hanford’s tank waste. This is an exciting and historic time.”

The TSCR system will remove radioactive cesium and undissolved solids from waste currently stored in large underground tanks in preparation for [vitrification](#) — the process of immobilizing waste in glass.

The waste treated through TSCR will be stored in a double-shell tank until it is fed directly to the Waste Treatment and Immobilization Plant’s [Low-Activity Waste \(LAW\) Facility](#). In the LAW Facility, the waste will be mixed with silica and other glass-forming materials. The mixture will be fed into melters and heated to 2,100 degrees Fahrenheit.

“We expect to begin heating up the first melter inside the LAW Facility by the end of this year,” said Vance. “When each piece comes together, it’s a cause to celebrate, because we’ve come one step closer to our goal of treating tank waste.”

TSCR is critical to beginning the treatment process using Hanford’s [Direct-Feed Low-Activity Waste \(DFLAW\) Program](#), a system of interdependent projects and infrastructure improvements, managed and highly integrated as a single program, that will operate together to vitrify the waste.

Click [here](#) to view an animation of the DFLAW Program process.

ORP tank operations contractor Washington River Protection Solutions designed the TSCR system and managed the construction and installation by subcontractors AVANTech, Atkins Nuclear Secured, Fowler General Construction, and Apollo.

“This is the culmination of nearly three years of coordinated work, from design, construction, and now operations, all done in the midst of a pandemic,” said John Eschenberg, WRPS president and CEO. “We are just weeks away from being able to operate TSCR. We are now transitioning our

workforce from construction and testing activities to full-on 24/7 operations. This is an accomplishment that we all are very proud of.”

WRPS was able to complete the project on time, while keeping workers safe during the COVID-19 pandemic.

TSCR relies on a technology that was deployed successfully at several locations worldwide, including the Fukushima Daiichi nuclear power plant cleanup in Japan. It uses a design concept similar to that of a unit built for DOE’s Savannah River Site in South Carolina.

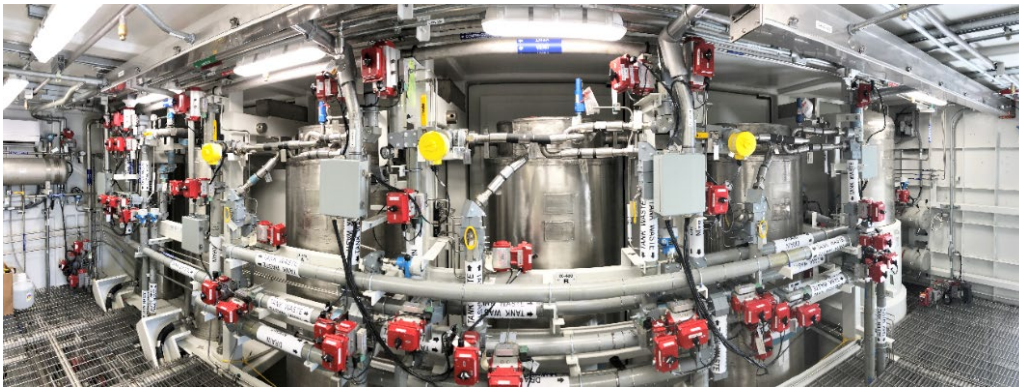
TSCR is targeted to begin treating waste in early 2022 in preparation for DFLAW operations to begin by the end of 2023.



Hanford Site leadership is handed a symbolic key from Washington River Protection Solutions (WRPS) to indicate construction and readiness assessments are complete on the Tank-Side Cesium Removal system. Pictured, back row, from left, are Monica Kembel, production operations manager, WRPS; Ben Harp, deputy manager, Office of River Protection (ORP); Janet Diediker, federal project director, ORP; and Delmar Noyes, assistant manager for Tank Farms, ORP; front row, from left, John Eschenberg, president and CEO, WRPS; and Brian Vance, manager, ORP and Richland Operations Office.



Brian Vance, manager of the Office of River Protection and Richland Operations Office, left, is given a tour of the Tank-Side Cesium Removal (TSCR) system ancillary enclosure by John Eschenberg, president and CEO of Washington River Protection Solutions. This enclosure contains support equipment necessary for TSCR operations, including a compressed air system, potable water tank, softened water system, and fire suppression system.



A bird's eye view inside the Tank-Side Cesium Removal (TSCR) system's process enclosure. Construction and readiness assessments are complete, and in just a few months, TSCR is scheduled to begin treating waste currently stored in large underground tanks in preparation for vitrification, the process of immobilizing waste in glass.

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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