

DFLAW

DIRECT-FEED LOW-ACTIVITY WASTE

Hanford's DFLAW Program integrates a group of individual projects, facilities, and infrastructure upgrades, with involvement from all of Hanford's contractors.

Through DFLAW, the U.S. Department of Energy will retrieve, treat, and immobilize low-activity waste.

Background

The U.S. Department of Energy (DOE) is on the verge of achieving a cleanup commitment decades in the making: treating Hanford's tank waste using the Direct-Feed Low-Activity Waste (DFLAW) Program. Tank waste treatment is a key component of DOE's strategic cleanup vision. "Direct-feed" means Hanford's tank waste will be separated to remove the more radioactive portion (solids and cesium) so that the resulting low-activity (less-radioactive) waste can be fed directly to the Waste Treatment and Immobilization Plant's (WTP) Low-Activity Waste (LAW) Facility for immobilization in glass.

DFLAW is a collection of interdependent projects and infrastructure, managed as a program, that will operate together to vitrify (immobilize within glass) and dispose of low-activity waste. Supporting DFLAW requires significant upgrades to Hanford Site infrastructure and coordination and integration among DOE field offices and Hanford contractors. DFLAW will be the most highly integrated operational program at Hanford and in the DOE complex. The DFLAW facilities can be viewed using the self-guided [Hanford Virtual Tour](#).

Mission

Safely, efficiently and effectively treat Hanford tank waste.

Vision

Unified, prepared and empowered team driven to achieving effective tank waste treatment.

Supporting DFLAW

DFLAW is one of the highest priorities in the DOE Office of Environmental Management portfolio. The DFLAW Program requires a sitewide commitment to excellence to drive the cultural, operational and performance transformation required to successfully begin DFLAW in 2023 and immobilize waste in glass.

The One Hanford focus continues to shape conditions for DFLAW mission success and the transition to production operations.



Direct-Feed Low-Activity Waste Program (cont.)

DOE's mission at Hanford is to deliver safe, efficient, and effective cleanup, protective of the workforce, the public and the environment. The Hanford of today is focused on the future — on creating value, enabling progress, and maximizing risk reduction. DFLAW represents an achievable and affordable approach to delivering progress and building confidence in the process in the near term, which can be built upon over time to expand and accelerate the overall Hanford tank-waste treatment mission.

Completing this mission requires a shift in the culture at Hanford. DFLAW operations will require a degree of coordination and teamwork Hanford has not experienced in several generations. DFLAW represents sitewide operations because WTP requires not only transfers of waste from Hanford's Tank Farms, but the treatment of secondary waste, disposal of vitrified waste, and robust site infrastructure to support 24/7 operations. The activities required to establish, support and operate the DFLAW support facilities span

Hanford field offices and all major cleanup contractors, and are thus being accomplished under a single, integrated DOE management team with a "One Hanford" focus.

The DFLAW Program has highlighted the greater interdependency and need for integration between Hanford field offices, prime contractors, stakeholders, tribal nations, and DOE Headquarters, to play their parts in supporting the common objective of reducing the risk from Hanford tank waste as soon as practicable.

As DOE implements readiness activities and begins DFLAW, an increased operations tempo and sense of deliberate haste has emerged as teams steadily work to bring facilities online. Achieving DFLAW operations by the end of 2023 will require a sustained collective commitment to excellence and teamwork, a robust integration program, and a singular leadership focus to deliver success.

Facilities

AP Tank Farm



- Double-shell Tank AP-107 is the feeder tank to the TSCR System
- Pretreated low-activity waste feed will be stored in double-shell Tank AP-106 and transferred in 9,000-gallon batches to the LAW Facility

TSCR



The Tank-Side Cesium Removal (TSCR) System will filter out suspended solids and remove radioactive cesium to produce low-activity waste feed from tank waste liquid.

ETF/LERF



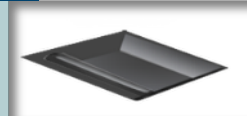
The Effluent Treatment Facility (ETF) and Liquid Effluent Retention Facility provide storage and treatment for a variety of mixed liquid wastes at Hanford.

ILAW Transporter



The immobilized low-activity waste (ILAW) transporter conveys glass-filled containers from the WTP to the Integrated Disposal Facility (IDF).

IDF



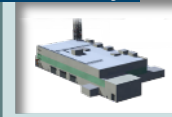
- Engineered disposal facility
- Accepts containers of vitrified low-activity waste for disposal
- Accepts solidified secondary waste forms from WTP operations

Infrastructure



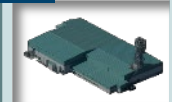
Provides emergency response, electrical, roads, water, sewer, security, emergency, IT, facilities, and other services in support of all Hanford cleanup activities.

LAW Facility*



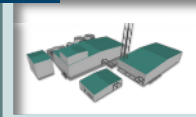
- Mixes low-activity waste feed with glass-forming material and heats them in two high-temperature melter
- The vitrified waste is stored in steel containers for disposal

LAB*



The Analytical Laboratory provides laboratory services necessary to confirm the LAW Facility is producing compliant glass.

EMF*



- The Effluent Management Facility treats the liquid effluent from the LAW Facility in an evaporator
- Pumps decontaminated liquids to the ETF for further treatment

BOF*



The Balance of Facilities provide necessary services to support LAW Facility operations.

222-S Laboratory



Provides analytical services for the Hanford Tank Farms and DFLAW feed qualification.

* These facilities support both DFLAW and the WTP

