

# DOE Radioactive Waste Management Update

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Presentation to the Environmental Management Advisory Board

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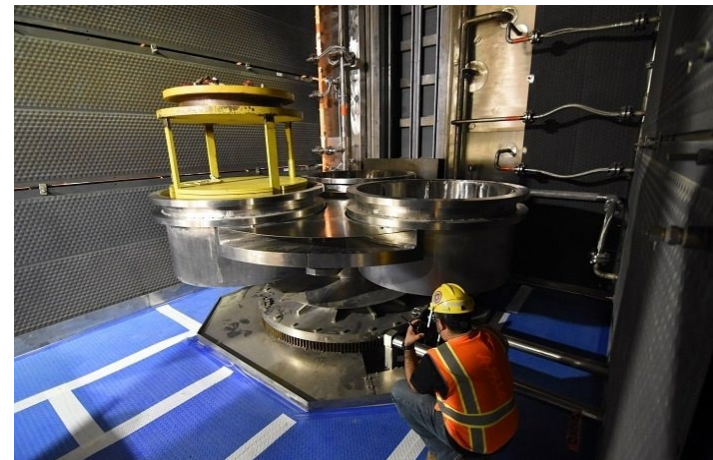
December 2021

## Recent Accomplishments

- Continued success toward start-up of Direct-Feed Low-Activity Waste
  - Completed construction at Low-Activity Waste (LAW) Facility (vitrification) and 3,500-foot-long pipe connecting tank-side cesium removal to treatment facility.
- Proposed Test Bed Initiative Demonstration (2,000-gallons)
- Completed building and testing the Tank-Side Cesium Removal (TSCR) system that will start treating tank waste in 2022 to build up a supply to feed directly to the vitrification facility in 2023.



Hanford workers fit sections of double-walled pipe in place, connecting the site's tank farms to the Waste Treatment and Immobilization Plant.



An engineer conducts tests on the turnstiles inside the pour caves of the LAW Facility. The turnstiles will hold three stainless steel containers into which vitrified waste will be poured during operations.

## Recent Accomplishments

- Sodium-Bearing Waste Treatment
  - Concluded two-year outage at the Integrated Waste Treatment Unit (IWTU) – a major milestone toward treatment of remaining ~900,000 gallons of liquid radioactive waste and associated tank closures.
  - Next Steps: Initiate and complete 50-day confirmatory demonstration run and subsequent radiological operations.
- Waste Calcine Treatment
  - Continued Calcine Retrieval Demonstration efforts and readiness.
  - Finalize Analysis of Alternatives update and evaluate recommendations regarding treatment.



**During the 2-year outage at IWTU, crews completed more than 50 modifications to the liquid-waste treatment facility.**



**IWTU treatment process will convert liquid sodium-bearing waste into a solid, granular, carbonate product for on-site storage pending final disposition.**



# Savannah River Site Tank Waste Treatment

## Recent Accomplishments

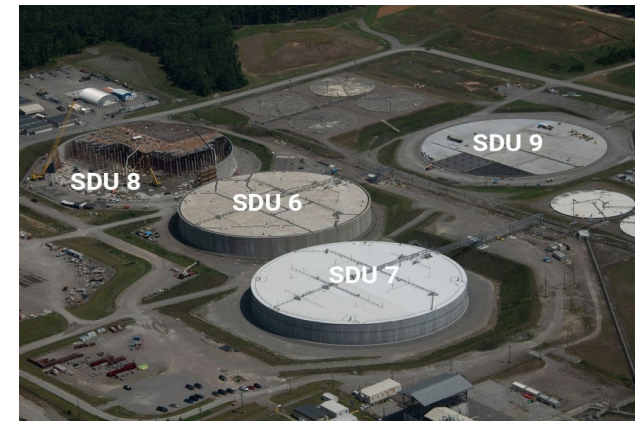
- Commenced treatment operations at newly constructed Salt Waste Processing Facility (SWPF) and completed construction of Saltstone Disposal Unit 7 (33-million-gallon capacity).
- Over 19.7 million gallons of material, including decontaminated salt solution, transferred to the Saltstone Production Facility, resulting in more than 27.65 million gallons of saltstone produced.
- >4,250 glass canisters produced since Defense Waste Processing Facility (DWPF) began operations in 1996.



**Savannah River Site (SRS) is treating record-setting amounts of waste as the SWPF proves to be an aggressive workhorse for the site's liquid waste mission.**



**Left: Spare Melter for Waste Vitrification at DWPF.**



**Right: Saltstone Disposal Units at SRS.**

# Waste Isolation Pilot Plant/ National TRU Program

## Recent Accomplishments

- Finished mining of eighth transuranic (TRU) waste disposal panel at the Waste Isolation Pilot Plant (WIPP).
- Completed foundation for 55,000-square-foot New Filter Building as part of Safety Significant Confinement Ventilation System (SSCVS).
- Successful testing of 700-C fan to increase air flow to workers.
- Received Class 3 Permit Modification for excavation of new shaft and connecting drifts.
- Completed ~13,000 shipments of defense TRU waste shipments to WIPP – Currently averaging about 5 to 7 shipments per week.

**Right: The SSCVS will be the largest containment fan system among DOE facilities when finished.**



**Top: An electric continuous miner machine chews through the last wall of salt in Panel 8's Room 7 to complete the rough cut of the panel.**





# Additional Waste Management Accomplishments

## Moab UT Uranium Mill Tailings Remedial Action Project



Accomplished an EM 2021 priority by successfully relocating another million tons of uranium mill tailings away from the Colorado River to the Crescent Junction disposal Cell (above), bringing the cumulative total to 12 million tons permanently disposed.

## Oak Ridge National Laboratory (ORNL)



Successfully completed processing and disposing the low-dose inventory of uranium-233 stored at ORNL, ending a 2-year effort that has eliminated a portion of the site's legacy nuclear material and provided rare nuclear isotopes for next-generation cancer treatment research.

## Los Alamos National Laboratory



Established a new processing line to more efficiently process and repackage drums of low-level nuclear waste at Technical Area 54 for disposal offsite. Using the new processing line, workers have remediated waste containers varying in size from 55-gallon drums to 500-gallon standard waste boxes.

- **Betsy Forinash**, Director of Infrastructure Management and Disposition Policy
- **Doug Tonkay**, Acting Deputy Assistant Secretary for Waste and Materials Management
- **Kristen Ellis**, Acting Director of Regulatory, Intergovernmental and Stakeholder Engagement