SAVANNAH RIVER SITE (SRS)

"The past year has been filled with historically significant efforts in our mission to cleanup legacy waste at SRS. With the Salt Waste Processing Facility continuing to ramp up, we are processing more salt waste and vitrifying more high-level waste than ever before. We've begun accelerated de-inventory of L Basin and are poised for more success in environmental cleanup and restoration. I am excited to see the progress in the coming years."

– Mike Budney, Manager, Savannah River Operations Office

HIGHLIGHTS

- Received approval for Accelerated Basin De-inventory mission, which will accelerate spent nuclear fuel disposition.
- Treated more than 2.1 million gallons of tank waste and removed over 3.7 million curies from the waste.
- DOE will transition primary management responsibility for Savannah River Site from EM to the National Nuclear Safety Administration.
- Completed deactivation work and transitioned the 235-F Facility to cold and dark status to prepare for decommissioning.
- **Completed all concrete placements for Saltstone Disposal Unit 9—an EM 2022 priority.**
- Accelerated closure of D Area by demolishing 15 facilities.
- Broke ground on the Advanced Manufacturing Collaborative to support Savannah River National Laboratory.
- Savannah River National Laboratory launched the Regulatory Center of Excellence.

INNOVATING CLEANUP WITH ADVANCED MATERIALS MANAGEMENT

SRS safely executed and delivered on its 2022 operational commitments to package, ship, store, process, and disposition nuclear materials. The Accelerated Basin De-inventory mission was approved, allowing for processing of spent nuclear fuel at H-Canyon without recovery of high enriched uranium. This accelerates basin material processing by 20 years, freeing space in L Basin for other uses and saves approximately $4 billion in lifecycle costs.

An important upgrade project was completed at H Canyon with the installation of an electrolytic dissolver. This new capability will allow for the dissolution of stainless-steel clad fuel from foreign research reactors.

The completed CCO Characterization and Storage pad in SRS's K Area has the capacity to hold 3,800 CCO drums while awaiting shipment to WIPP.

An electrolytic dissolver, used to dissolve stainless-steel clad fuel, was installed in H Canyon.

Workers at the K Area Complex continued making progress in Savannah River's mission to downblend surplus plutonium for disposition. Over the course of 2022, they exceeded downblending expectations ahead of schedule, and achieved readiness to ship the downblended material as transuranic, or TRU, waste to the Waste Isolation Pilot Plant (WIPP).

Workers reduced the footprint in D Area by 30,000 square feet as they continue to make progress in decommissioning and demolition activities. A total of 15 facilities have been demolished and over 100,000 cubic feet of waste removed this year.

The site also reached a significant milestone with the completion of deactivation activities at the legacy 235-F Facility. Completing this work will allow the decommissioning of the facility to proceed. This year, DOE also provided federal and state environmental regulators with its planned in-situ decommissioning end-state for the facility.

IMPROVING LIQUID WASTE SYSTEM CAPABILITIES

The Defense Waste Processing Facility (DWPF) underwent a significant process improvement this year with the implementation of a key processing chemical used in the vitrification plant's flowsheet. Glycolic acid replaced formic acid, allowing for safer and more efficient processing of high-activity radioactive waste at DWPF, leading to more efficient conversion of waste into glass.

The SWPF laboratory uses manipulators to handle process samples and equipment within its radioactive cell, which help protect workers handling the radioactive materials

Workers in progress of completing all concrete placements on Saltstone Disposal Unit 9.

This change is a step to ensure the Salt Waste Processing Facility (SWPF) can run at high production rates since DWPF will be able to treat greater quantities of waste due to the stability of the process. In addition, to support the higher production rates coming from SWPF, the Saltstone Production Facility is preparing to move to 24/7 operations in 2023.

This year, EM has operationally closed the first two support structures in the SRS Liquid Waste Program. F Area Diversion Boxes 5 and 6 in the F Tank Farm have been filled with cementitious grout, making both structures operationally closed. A diversion box is an underground concrete structure that holds a series of connection points that allow high-level radioactive waste to be transferred from one tank or facility to another. These closures join the list of the eight high-level waste tank closures at SRS that have similarly been filled with grout.

ENHANCING SAVANNAH RIVER NATIONAL LABORATORY

Local and congressional officials along with leaders from DOE, the Savannah River National Laboratory (SRNL), and the University of South Carolina (USC) Aiken broke ground on the Advanced Manufacturing Collaborative (AMC) facility on the USC Aiken campus.

The 50,000-square-foot facility will not only provide new laboratory, office and conference space suitable for advanced manufacturing research and development (R&D), but more importantly, it will house collaborative and R&D spaces for spinning innovative technologies into the Department and spinning them out into the commercial sector.

Construction of the AMC facility is expected to be completed in 2024.

SRNL, in its first year as a standalone national laboratory, also established the Regulatory Center of Excellence. This capability brings together a diverse network of experts and researchers charged with helping EM and others manage complex issues involving science, government, and communications.

Officials participate in the groundbreaking of the AMC facility on the USC Aiken campus.