

SAVANNAH RIVER SITE

“Our SRS team rose to the challenges 2021 presented and exceeded expectations. We advanced our cleanup goals and entered a new era in processing radioactive material with the start of the Salt Waste Processing Facility operations. We continued effectively managing the site’s response to the COVID-19 pandemic.”

– Mike Budney, Manager, Savannah River Operations Office

HIGHLIGHTS

- Integrated Mission Completion Contract awarded – an EM 2021 priority.
- Processed more than two million gallons of waste at the Salt Waste Processing Facility (SWPF) in its first year of operations.
- Received approval to start construction for the remaining three Saltstone Disposal Units (SDU).
- Repackaged 69 plutonium containers (3013s) into Nuclear Regulatory Commission-certified shippable containers in preparation for future shipment to WIPP.
- Completed construction eight months ahead of schedule and \$32 million under budget for SDU 7, the second mega-sized SDU to permanently dispose of decontaminated saltstone – an EM 2021 priority.
- Deactivated and decommissioned five buildings in D Area.
- Completed the D Area Coal Yard cleanup project.
- Treated and disposed more than 3 million gallons of decontaminated salt solution at the Saltstone Production Facility – a record for any fiscal year in the history of the high-level radioactive waste program at SRS.
- Initiated WIPP characterization activities in newly constructed Criticality Control Overpack Characterization and Storage pad in K-Area.

IMPROVING LIQUID WASTE SYSTEMS CAPABILITIES

With the startup of the SWPF in October 2020, EM’s liquid waste mission began a new era of processing radioactive waste material at SRS. The SWPF will significantly increase the rate at which waste is processed and tanks are emptied. Despite challenges that prevented reaching a goal of 6 million gallons, more than 2.4 million gallons of salt waste have been processed at SWPF since the start of hot operations in October 2020.

This year, SRS improved key equipment and processes to support SWPF operations. In the tank farms, modifications were made to three waste storage tanks to convert them into blend tanks to prepare salt batches for SWPF. SRS significantly improved the process and shortened the time frame to expedite material for processing, from six months to only seven weeks. Four salt batches have been transferred and processed at SWPF.

SRS also made significant improvements in the DWPF canister production by re-evaluating a calculation to allow more strip effluent into a Sludge Receipt and Adjustment Tank (SRAT) batch, creating the first “super” SRAT batch. More strip effluent added to fewer canisters means the facility is stabilizing more cesium per canister, improving the overall efficiency of the vitrification process.



SRS continues to meet mission needs by constructing mega-sized SDUs to permanently dispose of decontaminated saltstone.

SRS continues to meet mission needs by constructing mega-sized SDUs. The larger-sized SDUs support the increased output from SWPF. Construction continues simultaneously on SDUs 8 and 9. Constructing the SDUs concurrently optimizes crews and resources used on the adjacent structures, ultimately cutting costs for the program. All major concrete placements for SDU 8 are complete. The floor of SDU 9 is complete – five (of 25) walls, and 48 (of 208) columns are in place as of early December. The remaining three SDUs needed to complete the tank closure mission at SRS – SDUs 10, 11 and 12 – all received approval to start construction.



SRS completed modifications to convert Tank 42 into the third blend tank for the SWPF feed. Pictured is the site of Tank 42.

INNOVATING CLEANUP WITH ADVANCED MATERIALS MANAGEMENT TECHNIQUES

SRS continued to make strides in effectively and safely managing nuclear materials through H Canyon. The facility began operations in the early 1950s and is the only operating, production-scale, radiologically shielded chemical separations facility in the United States. Additionally, progress was made toward the new Fast Critical Assembly project in H Canyon, which allows for dissolution of non-aluminum clad spent nuclear fuel and requires the installation of a new electrolytic dissolver and increases H Canyon dissolution capabilities.



SRS completed the D Area Coal Yard cleanup project to excavate and blend soil with fine-grade limestone to lower pH levels.

In the K Area Complex, plutonium downblending continued and glovebox operations moved to four shifts to help accelerate the removal of plutonium from South Carolina. With the Criticality Control Overpack Characterization and Storage pad built by the NNSA, EM can store and ship TRU waste directly from K Area to WIPP, increasing efficiency and security.

Progress was made in the deactivation of the F/H Analytical Laboratories and Building 235-F, and consolidation of the H Canyon and HB Line control rooms after placing HB Line in reversible layup last year.