News from the Savannah River Site
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Salt Waste Processing at Savannah River Site Reaches Record Levels

AIKEN, S.C. (September 13, 2021) – The Department of Energy's Office of Environmental Management (EM) is treating record-setting amounts of waste and dispositioning more decontaminated salt solution at the Savannah River Site (SRS), as the Salt Waste Processing Facility (SWPF) proves to be an aggressive workhorse for the site's liquid waste mission.

SWPF's operations led to significant new records that are expected to continue to climb this year: EM liquid waste contractor Savannah River Remediation (SRR) has transferred 1.87 million gallons of radioactive salt waste to SWPF this fiscal year through late August, surpassing the record set in 2013 for the amount of salt waste transferred to a processing facility in a fiscal year; SWPF's treatment of that waste, setting a new mark for the greatest quantity treated in one year at the site; and receipt of a record 2.63 million gallons of decontaminated salt solution at the Saltstone Production Facility (SPF). That facility's conversion of decontaminated salt solution into saltstone produced more than 4.2 million gallons of cementitious grout — also the greatest amount for any fiscal year in the site's history.

Parsons Corporation designed and constructed SWPF and has operated the facility since it began processing radioactive salt waste in October 2020.

SRR had set the previous processing records in fiscal 2013 through the use of interim salt waste processing facilities known as the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit (ARP/MCU). The technologies for removing the radioactive components of salt waste in SWPF were implemented and proven successful on a smaller scale at ARP/MCU.

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Mike Pittman, Parsons vice president of nuclear operations and SWPF project manager, commended the effort that made SWPF operational this year.

“I am proud to see this facility safely achieving a pace which exceeds past records,” Pittman said. “With the continued support of the other organizations here at SRS, SWPF will reach its potential and accomplish its mission.”

SWPF continues to ramp up processing during its first year of operations. Meanwhile, SRR is preparing salt waste batches to be transferred to SWPF. The batches are planned to reach a rate of 9 million gallons each year in the future.

SRR President and Project Manager Phil Breidenbach said that achieving these new production records reflects what can be accomplished when demonstrating the company's core value of teamwork.

"We could never achieve these new levels of productivity across the liquid waste program without a strong joint effort that includes DOE-Savannah River, Parsons, the Savannah River National Laboratory, and SRR," Breidenbach said. "Collaboration and innovation between groups within and outside our own organization have led to our ability to accomplish more. Our team has been inspired to increase its own output to higher levels than ever before, and we will continue to set new records every day through the end of this year.”

SWPF separates salt waste into two streams for disposition. High-activity radionuclides are removed and transferred to the Defense Waste Processing Facility (DWPF) to be immobilized in glass. The decontaminated salt solution is pumped to the nearby SPF to be permanently dispositioned onsite.

SPF converts decontaminated salt solution into saltstone by mixing the liquid feed with dry, cementitious materials. The mixture is then pumped into massive above-ground Saltstone Disposal Units (SDUs) to harden for permanent disposal.

Improvements to SPF included the installation of new equipment and production software, which have strengthened the facility’s performance and reliability. SRR continues to work toward completing additional SDUs, currently under construction, to increase space necessary for the disposition of grout.

Jim Folk, the DOE-Savannah River assistant manager for waste disposition, said SRR has spent more than 10 years readying the liquid waste program for integration with SWPF.

"Many of these facilities have been preparing for greater quantities of salt waste to pass through the system for permanent dispositioning," Folk said. "Enhancements in the tank farms, waste-routing systems, DWPF, and SPF are helping to safely and efficiently treat and dispose of the remaining liquid waste at SRS."

Cutline: *Improvements at the Saltstone Production Facility have made it possible for as many as four trucks to simultaneously unload dry materials into silos for mixing with decontaminated salt solution from the Salt Waste Processing Facility.*