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Savannah River Site Streamlines Liquid Waste Lab Operations

AIKEN, S.C. (October 20, 2022) – Unifying laboratory operations and streamlining analytical processes are changing the game for the [U.S. Department of Energy's Office of Environmental Management \(EM\)'s](#) liquid waste program at the [Savannah River Site \(SRS\)](#).

Savannah River Mission Completion (SRMC), the SRS liquid waste contractor, has consolidated its three labs under the liquid waste program into one organization. This change unifies the analytical capabilities rather than the labs working independently.

SRMC's labs at the Defense Waste Processing Facility ([DWPF](#)), Effluent Treatment Facility (ETF), and Salt Waste Processing Facility ([SWPF](#)) perform various analyses of material processed in the [liquid waste system](#).

The SWPF lab is the newest location and has been in use since radioactive commissioning of the facility [began in October 2020](#). Lab results are used for process control; nuclear safety, criticality prevention, and material accountability; product quality; radiological waste characterization; regulatory compliance; and personnel safety.

Melissa Santaella-Ramos, senior manager for SRMC Laboratories, said the organizational change will provide an integrated focus across SRMC's laboratories to promote consistent and efficient operations, while sharing lessons learned and best practices.

"Combining Savannah River Mission Completion's laboratories under one umbrella will strengthen our ability to provide the analytical resources essential to our mission," Santaella-Ramos said. "We will build on the decades of operational experience of the DWPF and ETF labs, while maximizing the new analytical capabilities and state-of-the-art equipment that the SWPF lab brings to the program, combining the wealth of scientific knowledge of the talented personnel across SRMC laboratories."

Evidence of this integrated focus is in how personnel collaborate on improvements to manipulator arms used for remote handling of radioactive material in the labs. A work group has been established to perform routine preventive maintenance on the manipulators. This initiative will help reduce equipment degradation, improve ergonomics and minimize the risk of injuries from manipulator use.



Salt Waste Processing Facility (SWPF) lab technician Dorion Carter analyzes samples using a glovebox in Savannah River Mission Completion's SWPF laboratory.

In another change, crucial analytical processes to support qualification of salt batch feed for SWPF acceptance criteria can now take place within the SWPF lab. Salt batch qualification ensures the salt waste feed batches meet the specifications for safe processing through SRMC's facilities.

Wyatt Clark, SRMC chief operating officer, said these improvement initiatives at the laboratory are essential as SRMC continues to ramp up facility production rates.

“Organizationally joining liquid waste laboratory operations, as well as now performing key analytical activities internally, supports the ability to keep our facilities running as safely and effectively as designed,” Clark said. “These improvements position SRMC and the Department of Energy to meet milestones, overcome future challenges and fulfill our mission.”

Radioactive liquid waste is generated at SRS as byproducts from the processing of nuclear materials for national defense, research, medical programs and outer space missions. Totalling about 34 million gallons, the waste is stored in the remaining 43 underground carbon-steel waste tanks grouped into two tank farms at SRS. The SRS liquid waste program consists of high-hazard operations, which include complex engineering, procurement, construction, waste treatment, grouting, and disposal to operationally close the waste tanks.



Salt Waste Processing Facility (SWPF) lab technician Jennifer Zimmerman operates a manipulator to maneuver radioactive samples in Savannah River Mission Completion's SWPF laboratory.