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Employees Innovate, Repurpose Equipment to Improve Waste Processing at SRS

AIKEN, S.C. (June 2, 2025) – The U.S. Department of Energy <u>Office of Environmental Management</u> and its liquid waste contractor at the <u>Savannah River Site</u> (SRS) have improved workflow by creating a buffer area for radioactive waste transferred between two critical waste processing facilities.

Savannah River Mission Completion (SRMC) repurposed two 5,000-gallon holding tanks to serve as "lag storage" between the <u>Salt Waste Processing Facility</u> (SWPF) and the <u>Defense Waste Processing Facility</u> (DWPF). The lag storage provides needed space to hold the waste, called strip effluent, transferred from SWPF before being processed at DWPF.

Strip effluent is the high-activity radioactive waste that has been stripped from the larger liquid waste stream at SWPF. It is then sent to DWPF to undergo vitrification, which converts the waste into a solidified glass form suitable for long term storage and safe disposal.

SRMC Chief Operations Officer Wyatt Clark said this new storage system is an upgrade needed to continue production improvements.

"The <u>liquid waste system</u> is a highly integrated system, meaning the productivity of one plant is directly dependent on the availability of another," Clark said. "Our team was very creative by identifying this need and implementing a lag storage solution using repurposed equipment."

The new cost-effective approach means SRMC can operate the two facilities more independently.

"That way, if DWPF is down for maintenance, SWPF can continue to process and transfer feed into this new temporary storage. When DWPF returns online, the feed will be readily available," Clark said.

Another part of this improvement effort was the creation of a new tool to remotely manage the movement of the waste in and out of the lag storage tanks at DWPF. The tool, which is a system of valves designed

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and built by SRMC employees, uses remote-control switches to allow for the routing of strip effluent from SWPF to either DWPF for processing or to one of the temporary holding tanks.

"This remote routing system gives us more than one destination for the waste transferred out of SWPF," Clark continued. "It gives us additional flexibility to strengthen our production. Each process improvement we implement brings us closer to reaching our optimum rate of 9 million gallons per year at SWPF."

The new tool, developed by SRMC Engineering and Maintenance personnel, will also make the job of routing the waste much quicker, as the valves will be opened and closed by way of small, electric motors encased in stainless steel that are connected to the valves.

In the past, a remote-controlled crane would perform that 36-hour function by removing the cell cover from the feed pipes and setting the cover aside. Next, the crane would use a wrench to turn the valves and, once that task was performed, the crane would replace the covers on the pipes. This new motorized valving system will perform the routing process in approximately one-sixth the time previously required.

Tony Robinson, EM acting assistant manager for waste disposition at SRS, believes this modernization of the routing system will help keep the SRS Liquid Waste Program on track.

"Innovation has always been at the heart of our Liquid Waste Program at SRS," Robinson said. "Whether it's new technologies or new uses for old technologies, working smarter helps us also work safer."



<u>Cutline</u>: Savannah River Mission Completion created a new system of remote-controlled valves to manage the flow of radioactive liquid waste into and out of the strip effluent lag storage program. The tool will also make the job of routing the waste much quicker, as the valves will be opened and closed by way of small, remote-controlled electric motors built into the valves. The unit is shown here prior to its installation in the Savannah River Site Liquid Waste Program.