News from the Savannah River Site
U.S. Department of Energy • Aiken • SC • 29808

Media Contacts:
Sonya Goines, U.S. Department of Energy
803.952.8564
Sonya.Goines@srs.gov

Colleen Hart, Savannah River Remediation
803.208.2428
Colleen.Hart@srs.gov

For Immediate Release

Tank Closure Project Goes Operational at Savannah River Site

AIKEN, S.C. (January 24, 2019) – DOE-Environmental Management (DOE-EM) has begun operating a significant tank closure project at the Savannah River Site (SRS), representing a major step forward in the liquid waste cleanup mission at SRS and across the DOE complex.

EM and its SRS liquid waste contractor Savannah River Remediation (SRR) this month initiated operations for the Tank Closure Cesium Removal (TCCR), a demonstration project designed to accelerate removal of radioactive waste from the SRS underground tanks to support tank closure.

The process involves waste treatment technology that uses filters, ion exchange columns, and a specially engineered resin to remove cesium — a radioactive chemical element — from the salt waste. Salt waste accounts for more than 90 percent of waste in the SRS tank farms.

DOE-Savannah River Manager Mike Budney said the TCCR operation, if proven feasible, will be key to accelerating EM's waste retrieval and tank closure efforts.

"The Tank Closure Cesium Removal project will supplement existing and planned facilities in the removal of radioactive cesium from liquid waste stored at the site, keeping with the DOE priority of protecting people and the environment," Budney said.

The modular enclosure is deployed at Tanks 10 and 11 in H Tank Farm. The waste from Tank 10 will pass through the TCCR process, including a set of pre-filters and multiple ion exchange columns. The waste stream is treated with an engineered resin inside the ion exchange columns to remove the cesium. The cesium-rich resin and ion exchange columns will then be dried and sent to an interim safe storage area onsite and monitored prior to future disposal. The decontaminated salt solution will be transferred to Tank 11 and on to the Saltstone Production Facility for disposal at SRS.

The high-level waste constituents, such as cesium, must be removed from the tanks before the tanks can be operationally closed and removed from service. Cesium's characteristics make it a top priority for removal.

(more)

TCCR will process several batches during this demonstration period. The first step in batch processing is salt dissolution, where water is used to dissolve the solid salt waste in the tank, called salt cake. After salt dissolution, but prior to processing the waste through TCCR, the batches of material will be sampled and analyzed, and its chemical constituents verified to be within the safety basis requirements before sending it through the TCCR process.

TCCR is expected to process 600,000 to 750,000 gallons of dissolved salt waste over a nine-month operating period. At the end of the demonstration period, DOE and SRR will evaluate the effectiveness of the TCCR system to decontaminate radioactive salt waste for disposal and the feasibility of continued TCCR operation and future units.

EM's Savannah River National Laboratory contributed to research and development of ion exchange technology at SRS in support of the TCCR program. Westinghouse Electric Co. and Columbia Energy and Environmental Services supplied the TCCR unit.

Cutline 1: The TCCR unit, stationed near Tanks 10 and 11 in the SRS H Tank Farm, consists of three modular skids: a main process enclosure housing all systems and components to treat the radioactive salt waste, a separate ventilation skid to provide environmental conditioning and contamination control for the main process enclosure, and a control skid to house the operating and video monitoring systems and provide for operator interface.

-END-