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Media contact:

Colleen Hart

(803) 208-2428

Colleen.Hart@srs.gov

In Mark of Progress, SRS Crews Remove Cesium Columns from Tank Closure Unit

Aiken, S.C. (February 9, 2021)– For the first time, Savannah River Remediation (SRR), the liquid waste contractor at the Savannah River Site (SRS), has removed columns that are filled with cesium in a demonstration project designed to accelerate removal of radioactive salt waste from underground tanks.

Operated by SRR, the Tank Closure Cesium Removal (TCCR) unit removes cesium from the salt waste in Tank 10 in the SRS H Tank Farm. TCCR is a pilot demonstration of innovative technology helping accelerate tank closure at SRS.

Building on the experience of commercial nuclear plant decontamination and following the disaster response associated with the Fukushima Daiichi accident, the TCCR technology selectively removes radioactive cesium from dissolved salt waste.

A commercial supplier designed, fabricated, tested, and delivered the mobile cesium removal system, which has been deployed at Tank 10 for the treatment of liquid salt waste. The radioactive cesium is filtered and holds to a specially engineered resin inside four ion-exchange columns within the process unit. The decontaminated salt solution discharge is sent to Tank 11 and eventually to the Saltstone Production Facility for onsite disposal. Savannah River National Laboratory supported research and development of the ion-exchange resin.

The original columns were adequately filled with the cesium collected from the waste. The four columns, which were in operation since January 2019, were removed from the TCCR unit via mobile crane in December 2020. They were then transported to a nearby interim safe storage pad. Four new columns are expected to be installed in the spring.

SRR President and Project Manager Phil Breidenbach said the task of removing the columns is a first for this project.

“On the surface, it appeared to be like any other crane lift and equipment transport, which are routinely performed in the tank farms; however, this equipment contained cesium-rich, high-level waste, which was transported above-ground via roadway to an onsite interim safe storage pad,” Breidenbach said. “It was all handled safely and executed with outstanding teamwork by our highly skilled workforce.”

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The majority of the salt waste inside the tanks at SRS will be processed through the Salt Waste Processing Facility, which began radioactive operations in October 2020. TCCR will supplement that processing to help accelerate the SRS liquid waste mission.

TCCR has processed three batches, or nearly 300,000 gallons, of salt waste since the demonstration project began.

SRR is a team of companies led by Amentum with partners Bechtel National, Jacobs, and BWX Technologies, Inc. Critical subcontractors for the contract are Orano, Atkins, and Amentum N&E Technical Services.



Cutline: Savannah River Remediation crews remove the first column filled with cesium from the Tank Closure Cesium Removal (TCCR) unit via crane in H Tank Farm at the Savannah River Site. All four of the original columns have been removed from TCCR and will be replaced by new columns this year.

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