SRS CONSTRUCTING SECOND LARGE-SCALE DISPOSAL UNIT

Savannah River Remediation (SRR), the liquid waste contractor at the Savannah River Site (SRS), has begun constructing the outer shell of the site’s second large-scale saltstone disposal unit (SDU), known as SDU 7.

SDU 7 is designed to hold 32 million gallons of saltstone, a non-hazardous waste form that is produced by treating decontaminated salt waste with dry materials to create a cement-like grout. The unit’s outer structure is being constructed in 25 different sections, using a 220-ton crane to place the formwork, including the erection of 208 support columns. The outer shell is made of high-strength, reinforced concrete, which will be wrapped with seven layers and 341 miles of steel cable for added strength. It will take about seven months to complete the shell.

When complete, SDU 7 will be 43 feet high and 375 feet in diameter, just like the original mega-volume unit built next to it, SDU 6. The inside of the SDU will be lined with a rubber coating that will be epoxy-bonded to the floors and walls. The liner protects the wall structure from chemical degradation over time and potential leakage during the filling.

The SDUs are designed to permanently dispose of the treated decontaminated salt solution removed from SRS’s high-level tank waste in the form of saltstone. SDU 7, as well as future additional SDUs, are being constructed to accommodate the very large volume of decontaminated salt solution that will be generated at the Salt Waste Processing Facility (SWPF), the newly constructed salt waste treatment facility currently undergoing testing and commissioning.

After the shell is completed, the next step in the project is to finish the roof structure, and then wrap the unit with the steel cable and install the interior rubber liner. SDU 7 construction is on schedule to be completed by spring 2022.

SRR RECOGNIZES FOUR EMPLOYEES FOR LIFESAVING ACTIONS

Four SRR employees have been recognized this year for acting as both first responders and good Samaritans.

Tank Farm Operators Scarlet Jones and Michael Hall jumped into action on a January morning carpool ride to work when they discovered an overturned car on a sparsely traveled road onsite. Jones dialed 911 while Hall assessed the driver’s injuries and ensured he was stable. They stayed with the injured individual until site emergency medical services technicians and law enforcement arrived. Jones and Hall credited their actions to training given at the Savannah River Site, which enabled them to take the necessary actions during an emergency.

“There are heroes all among us at Savannah River Remediation.”
- Tom Foster
SRR President and Project Manager

L to R: Scarlet Jones, Tom Foster, Michael Hall
Rodney Walker, an SRR senior project advisor, was in his office when a coworker approached him for discussion. Walker immediately noticed the employee was not acting well, showing signs of blurred vision and dizziness. After Rodney helped the employee to a desk, he called the onsite emergency number. The employee was transported to an off-site hospital and was recovering from vasovagal syncope, a sudden drop in heart rate.

Kevin Brotherton is an SRR waste treatment engineer and volunteers as a community first responder. Last summer, he responded to a woman off-site in need of medical attention. Her breathing stopped while Brotherton was giving her oxygen and monitoring her pulse. He initiated CPR, which restarted her heart by the time the ambulance arrived. When the woman reached the hospital, she regained consciousness and eventually fully recovered.

SRR President and Project Manager Tom Foster awarded all four employees with lifesaving awards at senior executive meetings. “There are heroes all among us at Savannah River Remediation,” Foster said. “Some of it is about being in the right place at the right time, but it’s also very much about knowing the right ways to respond to emergencies safely and efficiently. I am proud of all our employees who have demonstrated the courage to step in and step up in those moments when they were needed the most.”

For the first time in the history of the SRS, two salt waste streams are processing at the site. The waste is being processed through two salt-decontamination operations: an integrated interim salt processing operation called the Actinide Removal Process and the Modular Caustic Side Solvent Extraction Unit (ARP/MCU), and a newly implemented process called Tank Closure Cesium Removal (TCCR). SRR operates both ARP/MCU and TCCR.

With help from the parallel processing streams, now more than 10 million gallons of salt waste have been processed since salt-decontamination operations began at SRS. The progression of salt processing technology has played a significant role in achieving the 10-million-gallon milestone, said Jim Folk, DOE-SR assistant manager for waste disposition.

Salt-decontamination operations are designed to remove nearly all of the cesium from the salt waste stored in underground tanks before the waste stream is sent to the Saltstone Production Facility (SPF). At SPF, the salt waste is mixed with a cement-like grout to form saltstone, which is permanently stored in above-ground saltstone disposal units.

SRS works on dual salt streams; reaches 10m gallons processed

Salt waste accounts for more than 90 percent of the tank waste at the site.

The ARP/MCU process was implemented in 2008. ARP/MCU uses solvents and filters to remove the radioactive isotopes and is a pilot project.

The newest salt-decontamination project, TCCR, began operating in January 2019. The process uses filters, ion exchange columns, and a specially engineered resin to remove cesium from Tank 10. More than 150,000 gallons of waste have been processed so far.

SRS completes first batch in waste removal pilot project

The first batch of processed radioactive liquid waste using a new technology at SRS is complete. SRR launched TCCR operations in January 2019 and finished processing the first batch of salt waste through TCCR in February.

Workers processed the beginning batch, about 152,000 gallons of dissolved salt waste, at a rate of five gallons per minute. It was the first of several batches expected to be processed — 600,000 to 750,000 gallons total — over an estimated 9-month operating period.
TCCR is a demonstration project designed to accelerate removal of radioactive salt waste from the SRS underground waste tanks to support tank closure.

The recent TCCR batch process included transferring salt waste from Tank 10 into the TCCR processing module. Once inside the remotely operated module, the waste went through pre-filters and multiple ion exchange columns, where it was treated with an engineered resin to remove the cesium, which is a radioactive chemical element.

Preparations to begin the second batch are underway, including adding water to the tank to begin dissolving the saltcake in the waste.

SRR EMPLOYEES VOLUNTEER TIME, SKILLS FOR NEIGHBORS IN NEED

Savannah River Remediation employees volunteered their time and skills to help their neighbors in need for the United Way’s Project Volunteers In Service In Our Neighborhoods (VISION) event.

On March 15, 2019, nearly 80 SRR employees volunteered for Project VISION at three private residences and four agencies. The private resident projects included improving accessibility by replacing stairs, decks, and an enclosed porch. The agency projects included landscaping, staining a fence, painting, sorting and organizing a storage facility, and cleaning playground equipment.

Project VISION, an annual event in its 23rd year in Aiken County, is put on for agencies and residents, who often depend on volunteers like SRR employees participating in the improvement projects.

Another group of SRR employees volunteered for a project, known as Project SERVE, in the Augusta area. The employees gathered to perform tasks for Child Enrichment Inc. Volunteers were tasked with overall grounds beautification, improving the outside area of the facility, assembled furniture, and cleaned the playrooms.

Additional volunteers will take part in Barnwell County’s Project CARE at the Gail Reyes Center in Williston. Grass-cutting, weed-trimming, and garden-planting are all planned for a busy day of activities that had to be rescheduled due to weather.