

Building on success:

Closing radioactive waste tanks at the Savannah River Site

South Carolina's federal nuclear reservation, Savannah River Site (SRS), is performing work in radioactive liquid waste disposition and tank closure that was almost unheard of six years ago, when the U.S. Department of Energy (DOE) began a new focus on the way to handle this waste by contracting a company to focus solely on that effort.

Enter Savannah River Remediation (SRR), which is fulfilling the liquid waste mission at SRS by operationally cleaning and closing the waste tanks on Site. Beginning with a tradition of safety, the liquid waste mission is a culmination of steps and examination from all entities-federal and state regulators, plus stakeholders-involved.

Built between 1954 and 1980, the four different tanks types (Type I, Type II, Type III/IIIA and Type IV) at SRS are designed to safely store radioactive waste. Types I and II, known as "old-style" tanks, are a top priority for operational closure. Tank 16, the old-style tank most recently closed, is the first closure of a Type II tank, which was constructed in 1956.

The old-style tank closure schedule and deadlines are outlined in a Federal Facility Agreement (FFA) signed by DOE, the South Carolina Department of Health and Environmental Control (SCDHEC) and the U.S. Environmental Protection Agency (EPA). The agreement is to remove old-style tanks from service, a significant step in the country's efforts to reduce the risk of Cold War legacy waste to employees, the public and



Savannah River Remediation employees monitor the grout-pour control room for Tank 16 grouting at the Savannah River Site.

the environment.

Complying with state and federal regulators is an important step in the tank closure process to ensure the work receives the right vetting, explanation and understanding. Regulatory agencies ensure that every step is carefully documented and is consistent with the governing laws and agreements in place. Therefore, it is imperative that SRR maintains its open, interactive partnering with its customer, DOE, and state regulators.

Tank 16, filled with grout in September, was the first tank closed in H Tank Farm, the fifth closure under the SRR contract and the seventh tank closed as SRS. The first

six tanks cleaned and closed were in F Tank Farm. The initial two -Tanks 17 and 20-were closed in 1997 under a legacy company of SRR and were the first two radioactive waste storage tanks closed in the nation. Tanks 18 and 19 were filled in 2012; the first to be closed under the SRR contract. The other two tanks operationally closed under SRR's lead were Tanks 5 and 6 in 2013.

Like all the other tanks before it, Tank 16 journeyed through the entire waste removal process, stabilization, decommissioning and isolation from the rest of the Tank Farm complex. The waste removal process includes high-and low-level waste separation,

the waste being sent to either the Defense Waste Processing Facility or the Saltstone Production Facility, respectively. Once emptied, tanks must be cleaned. Tank cleaning is not complete until DOE and the regulators are satisfied that the tanks are clean enough to grout. Stabilization begins when specially formulated grout is poured into the tank. Stabilizing tanks reduces the risk to employees, the public and the environment.

Radioactive liquid waste tank closure-a task nearly unheard of six years ago-is becoming commonplace at the Savannah River Site. SRS is pioneering environmental clean-up in South Carolina and in the nation.



A cement truck begins the initial pouring of grout into Tank 16 at the Savannah River Site (SRS) on June 2, 2015. It was the fifth tank closed since 2012 by Savannah River Remediation, the liquid waste contractor at SRS.

October 1985 – L reactor restart. First reactor to be rehabilitated and restarted after a long period of inactivity.

1985 – DOE Subsurface Microbiology Program begins, which revolutionizes environmental remediation through the use of biological organisms.

1986 – Saltstone construction begins

1988 – Effluent Treatment Project operations begun

1988 – Remaining reactors are shut down

1989 – Name of the Site changed from Savannah River Plant to Savannah River Site

April 1989 – DuPont contract ends, Westinghouse contract begins

1990 – Saltstone Facility startup

June 8, 1992 – K Reactor, restarted since contract change, goes critical for a test run before getting shut down permanently.

1992 – End of Cold War

1994 – Replacement Tritium Facility startup

1996 – L Area Complex Basin equipment reconfigured to safely handle and store used nuclear fuel from off-site research reactors

1996 – Defense Waste Processing Facility startup

1997 – First high-level waste tanks (#17 and #20)

1999 – Washington Group International acquires the government services business of Westinghouse, changing the Westinghouse Savannah River Company name to Washington Savannah River Company

1999 – The Department of Energy signs a contract with a consortium, now called Shaw AREVA MOX Services, LLC, to design, build and operate a Mixed Oxide Fuel Fabrication Facility



K-Area storage

2000 – K Reactor building converted to K Area Materials Storage Facility

2000 – SRS celebrates 50th Anniversary

2003 – Parsons selected to design, build, commission and operate for 1 year the Salt Waste Processing Facility and construction begins

2004 – Savannah River Technology Center designated Savannah River National Laboratory (SRNL)

2006 – T Area closure complete

2006 – F Area deactivation complete

2007 – Tritium Extraction Facility opens

