News from the Savannah River Site
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For Immediate Release

Historic Valve Replacement Achieved at the Savannah River Site

AIKEN, S.C. – (June 5, 2025) – The Savannah River Site (SRS) recently achieved a historic milestone by replacing one of the main isolation valves on the River Water System (RWS) for the first time since its installation in 1952.

Initially designed to provide cooling water to the Site's five production reactors through three pumphouses off the Savannah River and Par Pond, the RWS's original mission ended with the reactors' shutdown in 1991. Today, the system continues operations to supply river water to the Biomass Cogeneration Facility (BCF), L Lake, and K and L areas, ensuring an uninterrupted flow of boiler feedwater and serving as a secondary water source for Par Pond during drought conditions. The BCF relies on this water source for boiler feedwater to produce steam, electricity and firewater.

Savannah River Nuclear Solutions (SRNS) Utility Maintenance Mechanics Josh Howell and Ray Youngblood tighten flange fasteners on the newly replaced H7 Valve at the Savannah River Site.

The H7 Valve, located near D Area on what is called the “Ellenton” header, is a crucial component of the RWS, providing isolation capability on the distribution header. This massive valve— weighing over 15,000 pounds and measuring 48 inches in diameter— had a broken stem, rendering the valve inoperable and 50% closed. Repairing the stem was not feasible due to the valve stem’s diameter and the site's welding procedure restrictions, leaving only one viable option of replacing the valve.

SRNS Utility Maintenance Mechanics Tim Roach and Darren Rushton remove old studs from the original H7 Valve.

“When initial attempts to remove the valve didn’t go as planned, the team adapted and worked cohesively, completing the task safely without damaging adjoining pipes,” said Richard Brown, SRNS Design Authority Engineer. “We took timeouts when needed, reconvened as a team, modified the plan, and got the job done."

Billy Vowell, SRNS Water Operations, added, “Extensive planning, performing task readiness reviews, and ensuring safety in the valve pit allowed us to successfully replace the valve without injury. The teamwork was remarkable. We had to remove a valve with gasket material so tight that we needed 100-ton jacks to free it. Additionally, fabricating a spacer for the new valve

“This 1950s-era valve had never been replaced before,” said Andrew Ellsworth, SRNS Utility Commodity Group Manager. “Extensive planning was required to determine the best course of action. Restoring its functionality provides a credible isolation point and enhances the operability of our River Water System.”

Randy Keenan, SRNS Director of Site Services, said, "Updating infrastructure that has been in service since the 1950s is no small feat. This project not only restored isolation capability of our River Water System but also demonstrated our commitment to safety, innovation and operational excellence. The successful outcome is a testament to the meticulous planning and teamwork across various departments. It’s an exciting milestone for SRS, completing a job that everyone knew would be difficult."

SRS has spent several years preparing for the valve replacement.

The original H7 Valve after removal.

to fit perfectly was a significant achievement.”

Replacement of the H7 Valve marks a pivotal achievement in maintaining the integrity and efficiency of the RWS, underscoring the dedication and collaboration of the SRNS Site Services’ teams.

SRNS Rigging team transports the new valve to the “Ellenton” River Water header.

Savannah River Nuclear Solutions, a Fluor and HII partnership company, is responsible for the management and operations of the Department of Energy’s Savannah River Site, located near Aiken, South Carolina.

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