

Primary Media Contact:  
Emily Kirk  
Savannah River Nuclear Solutions  
(803) 208-0338, [emily.kirk@srs.gov](mailto:emily.kirk@srs.gov)

NNSA Media Contact:  
Bryan Cox  
NNSA-Savannah River Field Office  
(803) 989-9050, [Bryan.Cox@nnsa.srs.gov](mailto:Bryan.Cox@nnsa.srs.gov)

**FOR IMMEDIATE RELEASE**

## Essential SRPPF Operations System Passes First Round of Testing

**AIKEN, S.C.** (September 12, 2022) – A material transfer system that will be central to operations in the Savannah River Plutonium Processing Facility (SRPPF) has successfully completed its first round of testing. The results will help guide the final design of the system, which will transport materials through the facility's various steps in producing plutonium pits needed for the nation's nuclear deterrent.

The Savannah River Site (SRS) is repurposing an unfinished National Nuclear Security Administration (NNSA) facility as the SRPPF. Design work for the conversion is currently underway. "The material transfer system will be the veins and arteries of the SRPPF, moving material from beginning to end of the production process," said Patrick Schneider, Savannah River Nuclear Solutions (SRNS) Plutonium Modernization Manager of Operations. "Designing, assembling and testing a prototype of the transfer system now will allow the development of a final system that works seamlessly with the production processes."

A version of the system will also be installed in SRPPF's Training & Operations Center, where training, qualification and procedure development will begin well in advance of operations in SRPPF.

Work in the SRPPF will take place inside gloveboxes, which are enclosures that allow employees to perform work in a protective environment. The material transfer system will move materials, tools and waste through the series of connected gloveboxes.

SRPPF worked with the Savannah River National Laboratory (SRNL) on the system. The partnership among SRPPF Operations, SRPPF Maintenance, SRPPF Project Engineers and SRNL researchers was one of the keys to the testing program's success. Schneider said, "Bringing together this cross section of functional organizations at this early stage in the project will support our future success."

SRNL began by researching available technologies for moving materials and items through the system. They evaluated the different technologies to determine which would be the most effective, have the fewest moving parts, and be the easiest to maintain. After looking at pulley-driven, chain-driven and others, a magnetic drive was selected as the best option because it does not present maintenance challenges like chains that need lubrication or belts that stretch over time.



*Kristen Phillippi, SRNS Operations Support Specialist – SRPPF, loads a 10-pound bag into the test transport container that sits on a cart driven by magnetic technology within the prototype of the material transfer system.*

SRNL assembled the first version of the system and operated it in the lab to make sure it would run. It was then transferred to an existing facility that will eventually become SRPPF's Training & Operations Center, where a three-person operations team began putting it through its paces. The prototype had to demonstrate movement laterally and around corners. The final test was a multi-phase endurance test to ensure that it could transport more than the required weight over a four-week period.



*A prototype of the material transfer system that will be used to move material and items during the plutonium pit production process in SRPPF.*

Each phase required the system to run 24/7 for a week. The test began with a nearly 10-pound empty cart operating for the first week. A 10-pound bag was added to the cart for the second week, then another 10-pound bag was added for week three, and finally, a third 10-pound bag was added to complete the month-long test. "When we got to 40 pounds, it was still operating and functioning, so we know it can do what's needed," Schneider said. "The magnetic-driven technology proved to be efficient and low maintenance."

Information gained from testing has been shared with the glovebox design team. They will update the system's design, based on improvements indicated by the testing. Then the updated system will be assembled, and testing will begin again.

Established by Congress in 2000, NNSA is a semi-autonomous agency within the U.S. Department of Energy responsible for enhancing national security through the military application of nuclear science. NNSA maintains and enhances the safety, security, and effectiveness of the U.S. nuclear weapons stockpile; works to reduce the global danger from weapons of mass destruction; provides the U.S. Navy with safe and militarily effective nuclear propulsion; and responds to nuclear and radiological emergencies in the U.S. and abroad.

Savannah River Nuclear Solutions, a Fluor Corporation-led company with Newport News Nuclear and Honeywell, is responsible for the management and operations of the Department of Energy's Savannah River Site, located near Aiken, South Carolina.