

from Savannah River Nuclear Solutions, LLC

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**For Immediate Release**

## SRS Upgrades Helium Recovery System

AIKEN, S.C. (July 24, 2012) – Savannah River Nuclear Solutions, LLC (SRNS) Tritium Programs recently completed a project to design, build and relocate a new system for separating and capturing helium-3. An important byproduct of the tritium manufacturing process, this form of helium gas is primarily used in radiation detectors employed by the United States Department of Homeland Security to detect neutron activity from nuclear material.

SRNS, the management and operations contractor at the Savannah River Site (SRS) is responsible for the recovery and management of helium-3 as one of their key missions for the National Nuclear Security Administration (NNSA). The recovery system upgrade project paves the way for a larger initiative to maintain and modernize Tritium operations while reducing operational footprint and costs. The Tritium Responsive Infrastructure Modifications initiative will leverage technology advancements, so that the large, aging and more expensive processes will move from Cold War-era facilities into newer, smaller and less expensive accommodations, thereby reducing operating expenses by \$28 million annually.

The previous helium-3 recovery system had been operating for over 40 years and was no longer cost effective to operate or maintain. The age of the equipment, potential for contaminants, and the need to relocate the recovery process out of the previous Cold War-era facility, drove the requirement to install an upgraded system in a new location.

Shop fabrication activities began in November 2010 and field activities began in April 2011 to provide a state of the art, oil, mercury and lead free system that would separate and bottle helium gas. To accomplish this, the project required the construction of a glovebox to house



*Operator Cindy Sizemore installs a tank to be filled with helium-3, a byproduct of the tritium manufacturing process.*

*The Savannah River Site is owned by the U.S. Department of Energy and is managed and operated by Savannah River Nuclear Solutions, LLC.*

approximately 1,200 feet of stainless steel piping connected by approximately 1,300 welds, four vacuum pumps, three compressors, two zeolite beds and 20 instruments. In addition to the glovebox, the new system incorporates two ASME code stainless steel tanks for feed and waste, a control panel, oxygen monitor, exhausts duct and several interfaces to existing Tritium plant systems.

“The helium-3 recovery system upgrade project and others like it are critical for the SRS tritium operation to continue providing safe, secure, reliable and cost-effective solutions to meet national needs,” said Savannah River Site Office Manager Doug Dearolph. “Relocating this process not only enables us to vacate our older facilities in the future, but it also positions us to effectively support the NNSA’s helium-3 recovery mission for years to come.”

Modernizing and right sizing the tritium operations infrastructure, as well as increasing the supply of helium-3 are two national security initiatives within the Enterprise•SRS strategy for leveraging site capabilities and expertise to provide solutions to national problems.

Savannah River Nuclear Solutions, LLC, is a Fluor Partnership comprised of Fluor, Newport News Nuclear and Honeywell, responsible for the management and operations of the Department of Energy’s Savannah River Site, including the Savannah River National Laboratory, located near Aiken, South Carolina.

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