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FOR IMMEDIATE RELEASE

SRNL Harvests Rare Materials from Legacy Nuclear Material Assemblies

AIKEN, S.C. (February 25, 2016) – A new program sponsored by the National Nuclear Security Administration (NNSA) is underway at the Department of Energy's Savannah River National Laboratory (SRNL) to recover rare, valuable materials from existing nuclear material assemblies. These assemblies have been stored at the Savannah River Site for more than 35 years and contain greater than 80 percent of the world's inventory of heavy curium and plutonium-244, a rare and economically irreplaceable material. Not only is this program recovering valuable isotopes, it's also moving legacy material out of South Carolina and putting it to use.

Savannah River Site L Basin Storage Facility

Plutonium-244 is uniquely important in high accuracy measurements analysis. The isotope serves as a reference material for analysis of other nuclear materials and is used as a baseline for source identification. It is also used for safeguard and environmental analysis. The curium is used in the production of californium, which has many industrial applications including oil exploration; nondestructive materials analyses; and medical research.

"Producing reference materials like plutonium-244 is vital for national safeguards and nonproliferation programs," explained Richard Meehan, Director of DOE-NNSA's Office of

Nuclear Materials Integration. “Ensuring measurement and analysis of unknown material with accuracy and precision is critical to our national security.”

According to SRNL Program Manager Bill Swift, the process allows SRNL to harvest these valuable resources from stored nuclear assemblies and convert an SRS legacy to an irreplaceable resource for our country. “Over a period of several years, we will be removing the assemblies from storage and shipping them to the Savannah River National Laboratory where they will be dissolved,” said Swift. “The valuable materials will be captured on an ion exchange resin column and sent to Oak Ridge National Laboratory in Tennessee for further purification and will be used to support isotope production.”

Making new plutonium-244 and heavy curium is not an economical option. When weapons production reactors closed at the end of the Cold War, so did the ability of any facility in the U.S. to produce these types of materials. The 65 assemblies currently stored at the Savannah River Site are the only economic means to harvest this rare material. This project will be executed in collaboration with Oak Ridge and Los Alamos National Laboratories as the future shipping and storage configurations are developed.

The Savannah River National Laboratory is a multi-program applied research and development laboratory for the U.S. Department of Energy. SRNL applies state-of-the-art science and engineering to provide practical, high-value, cost-effective solutions for our nation’s environmental cleanup, nuclear security and clean energy challenges. For more information, visit http://srnl.doe.gov

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