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For Immediate Release

SRS Completes Neptunium Work, Continues to Support NASA

AIKEN, S.C. (March 30, 2009) – The last of the neptunium inventory at the Department of Energy’s (DOE) Savannah River Site (SRS) has been successfully stabilized and shipped out, providing a source for power that is expected to satisfy the needs of the nation’s space program for the next 20-30 years.

For decades, SRS has furnished materials for the nation’s space program. Until several years ago, that support came in the form of plutonium-238. Now, it’s through production of neptunium-237 oxide. The means to produce more neptunium does not exist, and this national asset is being conserved for future space missions.

This neptunium has been safely and successfully converted from a liquid into a more stable powder form and shipped to the Idaho National Laboratory (INL). It will be loaded as targets into reactors at INL and Oak Ridge to produce plutonium-238, which will be used in NASA’s deep space probes.

Pu-238 has a unique combination of high heat output and long life, allowing designers to keep weight at a minimum and still have a power supply that is effective for many years. Where solar power is not practical, NASA uses Pu-238 as a heat source in Radioisotopic Thermoelectric Generators. These convert heat to electrical power to operate various deep space vehicles, such as the Galileo, Ulysses, Cassini, and more recently the New Horizons mission to Pluto. Small heat generators have also been used to keep the axle lubricant of the Mars Rovers from freezing. Pu-238 produced from the irradiation of neptunium targets has provided electrical power for 25 NASA space missions and heater units for additional missions, going back to 1961 and as recently as 2006.

Neptunium solution resulted from the recycle of highly enriched uranium during decades of reactor fuel cycles and H Canyon/HB Line operations. A radioactive material, it was stored in liquid form since the 1980s and then, beginning in 2004, was converted into oxide, or powder, in HB Line. Those conversions were completed in early November, and the material was packaged and shipped from H Area to K Area, and then to Idaho. A small amount was also shipped to Oak Ridge National Laboratory to be used for research programs.

Chuck Munns, president and chief operating officer for Savannah River Nuclear Solutions, LLC, said the employees deserve the credit for the safe success of this long-running campaign.

“This is hard work, and it’s important to the Site and the nation to stabilize these materials,” he said. “Employees in H Canyon, HB Line, the analytical laboratories, K Area, and SRNL deserve a lot of credit for executing such a long-term project safely and successfully.”

Although H Canyon continues to operate, the small amount of neptunium produced as a result will be handled as waste, said Fred Dohse, who directs nuclear materials operations for SRNS.

“The neptunium inventory was produced by processing our recycled Site spent nuclear fuel, which had a high concentration of this material,” he said. “The material we will be processing in the future doesn’t have nearly the amount of neptunium in it that our SRS fuel had.”

SRS is owned by the Department of Energy. SRNS is the management and operating contractor.

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