



News from the Savannah River National Laboratory

Media Contact: Angie French
(803-725-2854
angeline.french@srnl.doe.gov

FOR IMMEDIATE RELEASE

RESEARCH COLLABORATION WINS NATIONAL RECOGNITION

AIKEN, S.C. (May 17, 2011) – A decade-long collaboration among several U.S. Department of Energy National Laboratories, DOE contractors and a university is leading to a significant reduction in the stored high-level radioactive waste requiring treatment at the Savannah River Site, and earning kudos for its participants.

The U.S. Department of Energy's Savannah River National Laboratory received notification that the team responsible for "Development and Implementation of High-Level Salt Waste Processing Technology at SRS" was selected to receive the Council for Chemical Research's 2011 Collaboration Research Award. Team members include SRNL (operated for DOE by Savannah River Nuclear Solutions, LLC), Oak Ridge National Laboratory, Argonne National Laboratory, Pacific Northwest National Laboratory, Idaho National Laboratory, Savannah River Remediation (the liquid waste contractor at SRS), Parsons, General Atomics, IBC Advanced Technologies, and the University of South Carolina. The initial work was funded by the DOE Office of Basic Energy Sciences and by the DOE Office of Technology Innovation & Development in the Office of Environmental Management.

Representatives of SRNL and Oak Ridge National Laboratory accepted the award on behalf of the team at the annual CCR meeting. CCR Executive Director C. Paul Mendez praised the initiative as an example of teamwork. "This project involved the three pillars of US chemical research -- government labs, industry and academia -- in a collaborative, team process that epitomizes CCR's mission," he said. "We are proud to recognize the outstanding achievement of all the partners as they progressed from fundamental research not yet tied to an application all the way to plant construction and successful operation."

-MORE-

We Put Science To Work™

A U.S. Department of Energy National Laboratory managed and operated by

SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC
AIKEN, SC USA 29808 • SRNL.DOE.GOV

Research Collaboration Wins National Recognition

May 17, 2011

2/2

The 10+-year research and technology deployment program began with the inception of the basic scientific concepts involved, and culminated with the successful startup of chemical processes for removal of cesium, radioactive strontium, and selected actinides from the alkaline waste solutions stored in the SRS high-level radioactive waste tanks. The Actinide Removal Process and the Modular Caustic Side Solvent Extraction Unit – two new operating processes at the Savannah River Site – started up in 2008 as interim processes for the treatment of SRS salt solutions, and as proving grounds for the Salt Waste Processing Facility, now under construction. With three years of operation, the combined facilities have decontaminated over 1.5 million gallons of High-Level Waste and allowed consolidation of the radioactive cesium, strontium, and plutonium into stable glass canisters.

At SRS, decades of nuclear material production for the nation's defense resulted in the generation of millions of gallons of high-level radioactive liquid waste, currently stored in large underground steel tanks. Since 1996, the Site has been converting much of that inventory of waste to a stable glass form, suitable for long-term storage and permanent disposal. Despite enhancements to that process, existing facilities were unable to process one major type of waste due to the large volumes involved: large volumes of salt solutions containing small amounts of radionuclides. The team's work resulted in a process that decontaminates these salt solutions, sending the small quantities of radionuclides for conversion into glass with the remaining highly radioactive waste. This leaves the large quantities of decontaminated salt solution clean enough to be handled using much less expensive low-level waste disposal methods.

The Council for Chemical Research is a Washington-based organization whose membership represents industry, academia, and government. CCR's membership represents most of the U.S. chemical research enterprise, currently comprising more than 200 companies, universities, and government laboratories with a combined R&D budget of more than \$7 billion. CCR was formed in 1979 to promote cooperation in basic research and encourage high quality education in the chemical sciences and engineering. The mission of the CCR is to benefit society by advancing research in chemistry, chemical engineering, and related disciplines through leadership collaboration across discipline, institution, and sector boundaries.

SRNL is DOE's applied research and development national laboratory located at the Savannah River Site. SRNL puts science to work to support DOE and the nation in the areas of environmental management, national and homeland security, and energy security. The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC.

SRR is the SRS Liquid Waste contractor for DOE. SRR is composed of personnel from a team of companies led by URS with partners Bechtel National, CH2M Hill and Babcock & Wilcox.