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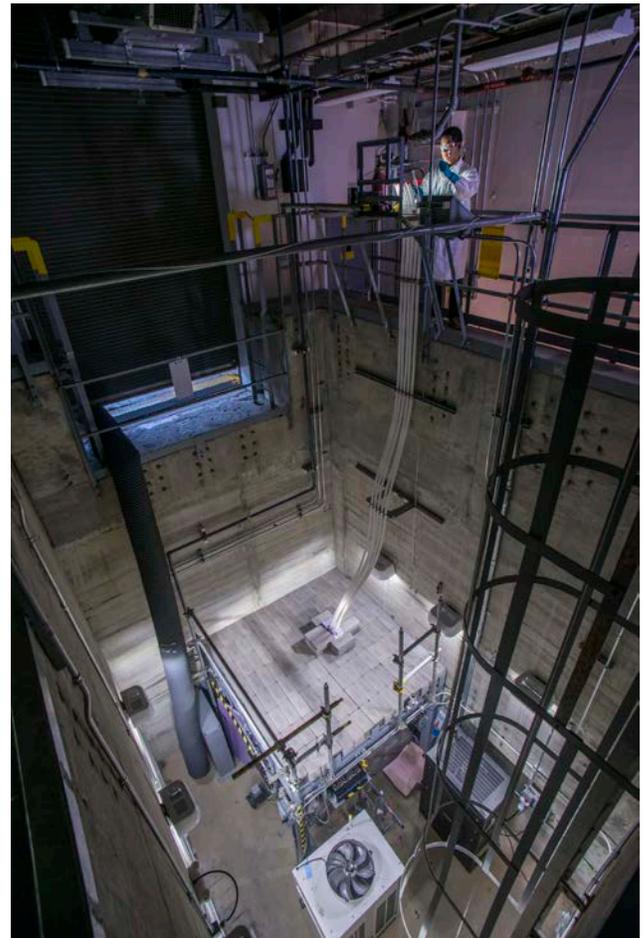
SRNL Facility Gets Makeover with Powerful New Neutron-Generation Capability

AIKEN, S.C. (July 28, 2016) – A portion of Savannah River National Laboratory that has been unused for more than two decades has been cleaned out, renovated, and is now the home for the lab's new thermal neutron source, which started operations in late June.

The first-of-a-kind neutron source replaces an aging facility at the lab that uses a Californium source which, because of its radioactive half-life, is beginning to see its effectiveness limited later this summer.

The thermal neutron source, more than three times more powerful than the existing capability, will be used to provide continuing analysis for corrosion control and other support to the National Nuclear Security Administration's (NNSA's) tritium mission, which the Savannah River Site carries out in support of the nation's nuclear defense. It will also support the Site's radiochemistry program.

"It's always exciting to expand the lab's capabilities, but even more so when we are able to repurpose under-utilized facilities," SRNL Director Terry Michalske said. "The new thermal neutron source will



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be a resource not just to the Savannah River Site, but eventually to the entire Department of Energy complex.”

The diminishing capabilities of the existing neutron-generation facility have been known for some time, and beginning in 2010, SRNL made a series of equipment modifications and procedural changes that allowed the existing capability to extend through the summer of 2016.

The project to replace the neutron-generation capability came with a \$3 million price tag for design, equipment, installation, shielding and support infrastructure, and ahead of a milestone to have the facility up and running by the end of June.

The new thermal neutron source, built by Adelphi Technologies, was installed in a portion of SRNL that was used for testing and demonstrating analytical equipment for the H-Canyon facility in the early 1990s. The non-radioactive facility had legacy materials that needed to be dealt with, including residual nitric acid solution in a 60-gallon tank and ancillary piping, before the source could be installed.

“It was like coming back to your garage and opening it back up after 25 years,” said SRNL Analytical Development Director Mark Barnes. “There was quite a bit we needed to clean out, but the facility itself was well-suited for the new mission.”

While the primary reason for replacing the neutron source is to serve the NNSA missions at the Savannah River Site, the new source potentially has additional applicability that will likely see interest from other DOE sites and academia.

“This is the first facility of its kind, and we’re able to take on much more extensive and complex experiments,” said David DiPrete, an advisory scientist on the project. “Down the road, we expect to do nuclear physics work as well.”

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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