

News from the Savannah River Site

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Savannah River Site's H Canyon Resumes Next Step to Process Spent Nuclear Materials

AIKEN, S.C. August 22, 2016 – On August 5, Savannah River Site's (SRS) H Canyon restarted the First Cycle unit operation in H Canyon for the first time in more than five years, enabling the uranium from spent nuclear fuel (SNF) currently stored at SRS to be shipped out of South Carolina.

In First Cycle, uranium from spent nuclear fuel (SNF) is separated from aluminum, fission products and other impurities. This is the fourth out of five unit operations to restart since the Department of Energy (DOE) Amended Record of Decision in 2013, allowing SRS to process 1,000 bundles of SNF and 200 High Flux Isotope Reactor (HFIR) cores. The fifth and final operation - blend down to low enriched uranium (LEU) - is the last unit operation that remains to be restarted.

"LEU blend down is estimated to restart within two years," said Patrick McGuire, DOE Assistant Manager for Nuclear Material Stabilization. "After blend down, the LEU will be shipped to a Tennessee Valley Authority (TVA) vendor for the manufacture of reactor fuel to be used for the production of commercial nuclear power. The last shipment made to the vendor was in November 2011. As more material is



H Canyon Senior Control Room Operators Deborah Thomas (top) and Audrey Davis prepare for the startup of the First Cycle Unit Operations. This is the first time the operation has run in more than five years.

shipped, more SNF will be able to be removed from storage in the SRS L Area Basin, processed through the H Canyon and shipped to TVA.”

Deborah Thomas and Audrey Davis are both H Canyon Senior Control Room Operators and have been working in H Canyon for 31 and 29 years, respectively. They both expressed their excitement at seeing First Cycle running again.

“It’s a milestone to me, being close to retirement age and seeing this equipment start up again,” said Davis. “We are cleaning up the environment and playing a role in our nation’s nuclear nonproliferation missions by safely and productively dispositioning the spent fuel we have stored here.”

“First Cycle is really the heart of the canyon because without First Cycle, nothing else is going to run,” Thomas added. “It’s exciting to be able to show this to the new operators. This is kind of our last hurrah before retirement, and it is nice to know we have done this for the next generation. We have left our mark and done it safely.”

In the blend down process, highly enriched uranium recovered from bundles of spent fuel rods from foreign and domestic research reactors is mixed with natural uranium to make LEU.

“Disposition of the approximately 1,000 bundles and up to 200 HFIR cores is expected to be completed in 2024, which would potentially allow DOE to authorize more missions for H Canyon,” said McGuire. “Producing LEU again in H Canyon helps keep our nation safe, while providing clean energy; it would be hard to find a better mission than that.”

H Canyon is the only operating, production-scale, radiologically shielded chemical separations facility in the U.S. Originally constructed to produce nuclear materials in support of our nation’s defense weapons programs, the facility’s mission changed after the Cold War into one of helping to disposition and stabilize nuclear materials and spent nuclear fuel from legacy cleanup, and both foreign and domestic research reactors.

Savannah River Nuclear Solutions is a Fluor-led company whose members are Fluor Federal Services, 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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