

Primary Media Contact:
Lindsey MonBarren
Savannah River Nuclear Solutions
803.645.5455
lindsey.monbarren@srs.gov

DOE Media Contact
Amy Boyette
803.952.6120
amy.boyette@srs.gov

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HALEU Production Preparations to Begin at Savannah River Site

AIKEN, S.C. (March 30, 2023) - The Savannah River Site's (SRS's) H Canyon facility recently initiated actions to recycle a small amount of used highly enriched uranium (HEU) that is stored in the Site's H Area and down-blend it into high-assay low enriched uranium (HALEU), helping to provide much needed fuel for U.S. advanced nuclear reactors.

LEU – fuel made up of up to 5% U-235

HALEU – fuel made up of between 5% and 19.75% U-235

HALEU is more desirable for use in nuclear power reactor designs because it allows for smaller designs, longer life cores, increased fuel efficiency and less waste.

“The projected demand for HALEU far exceeds the current supply,” said HALEU Program Manager Jeff Hasty for Savannah River Nuclear Solutions, the site's managing and operating contractor. “Because of H Canyon's most recent mission of blending HEU into LEU for commercial fuel reactors, H Canyon has stored HEU solutions available for use.”

The Savannah River National Laboratory (SRNL) completed a series of analyses to show down-blending of HEU from H Canyon liquid solutions could meet specifications needed for the advanced reactors. Those analyses helped SRS in initiating the planned HALEU project in H Canyon. “SRNL plays a major role in the research of the Nuclear Fuel Cycle research and development and is always excited to see our efforts applied in real world applications,” said SRNL Environmental and Legacy Management Deputy Associate Laboratory Director Bill Bates.

The facility has begun preparations for the pending mission, which will include equipment repair, training, procedure revisions and environmental impact analysis. Support is also being provided by the SRNL to complete a detailed set of sample analyses to ensure the HALEU meets reactor material specifications and to certify the shipping containers for material transport. Down-blending is expected to begin in 2025.

“This approval is a win-win,” said Hasty. “H Canyon has a useful path for the stored HEU, and at the same time, HALEU availability is increased for the emerging advanced reactors.”



H Canyon at the Savannah River Site

To see more about HALEU, click here: <https://www.youtube.com/watch?v=Kgw7FEklwBo&t=46s>