Facts from the Savannah River Site
SRS
NUCLEAR SECURITY • ENVIRONMENTAL STEWARDSHIP • SCIENCE AND ENERGY

H Canyon

H Canyon was constructed in the early 1950s and began operations in 1955. The interior of the building resembles a canyon because the processing areas resemble a gorge in a deep valley between steeply vertical cliffs. It is 820 feet long, 122 feet wide and 66 feet tall, with several levels to accommodate the various stages of material stabilization, including control rooms to monitor overall equipment and operating processes, equipment and piping gallery for solution transport, storage, and disposition. To minimize worker radiation exposure, work in the canyon, including maintenance, is remotely performed by overhead bridge cranes.

H Canyon is the only operating, production-scale, radiologically shielded chemical separations facility in the United States. H Canyon began operations in the early 1950s. The facility's operations historically recovered uranium and neptunium from fuel tubes used in nuclear reactors at the Savannah River Site (SRS), to produce radioactive materials used in making nuclear weapons. After the end of the Cold War, the facility's mission changed to one of nonproliferation and environmental cleanup.

The interior of the facility resembles a canyon, giving the facility its name. Most canyon operations are done from a control room using remote control cranes. One side of the canyon is considered "hot" because it has higher radiation levels, while the other side of the canyon is "warm" because it has lower radiation levels. No one has been inside the "hot" side of the canyon since it began operations.

Employees who work in the building are protected from radiation by the thick, steel reinforced concrete walls, which also help protect the public and the environment.

Following its Cold War mission, H Canyon recovered highly enriched uranium (HEU) from used nuclear fuel (UNF) and blended it down with natural uranium to produce 301 metric tons (MT) of low-enriched uranium. The UNF was dissolved, then the uranium was recovered from the dissolved solution through a

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U.S. DEPARTMENT of ENERGY

The Savannah River Site is owned by the U.S. Department of Energy. Savannah River Nuclear Solutions is the management and operations contractor at the Savannah River Site. Savannah River Mission Completion is the current liquid waste contractor at the Savannah River Site.

NNSA National Nuclear Security Administration

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complex chemical process. The uranium was used to make fuel for commercial power reactors.

In 2022, the Department of Energy implemented a new approach to UNF disposition, called Accelerated Basin De-inventory, that used H Canyon to dissolve UNF and then instead of recovering the uranium, sent it to the Site's liquid waste program to be vitrified and safely stored on-site until a federal repository is identified.

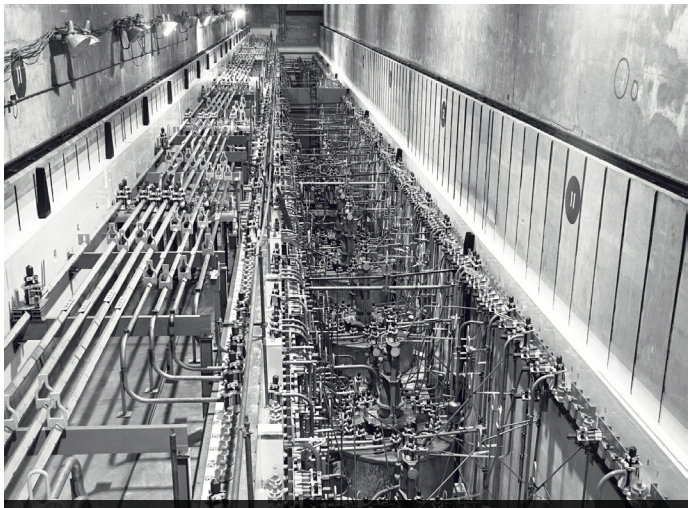
In 2026, SRS Operations received approval to return H Canyon to uranium recovery to produce up to 22.8 MT of high-assay low-enriched uranium (HALEU) for advanced reactors to support jump-starting the nuclear energy renaissance. Referred to as the Fuel Utilization, Extraction, Leverage (FUEL) mission, H Canyon will again demonstrate its flexibility and readiness to serve the nation.

The FUEL mission will dissolve approximately 80% of the UNF stored in L Basin and then separate the HEU. The HEU will be blended down using natural uranium to produce HALEU, then transferred to industry partners for beneficial reuse in advanced reactors.

H Canyon is also being used as a "test bed" for new technologies, allowing outside parties to test in a real-life operating facility.

Although it is over 70 years old, H Canyon has maintained and proven its originally intended flexibility by adapting to the needs of its customers. H Canyon is a one-of-a-kind national asset that serves the state, the nation and the world. The facility continues to remain in a high state of readiness, with associated technical staff available, to complete its designated missions and future opportunities.

H Canyon is operated by the Department of Energy's Office of Environmental Management.



The interior of H Canyon before beginning operations.