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# Highlights

Highlights of [GAO-08-840](#), a report to the Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives

## Why GAO Did This Study

During the Cold War, the Department of Energy (DOE) produced nuclear materials for nuclear weapons at its Savannah River Site (SRS) by dissolving highly radioactive spent nuclear fuel from reactors in a facility known as H-Canyon. DOE planned to end H-Canyon operations in 2007 but now plans to continue H-Canyon operations until 2019 to process additional nuclear material. GAO was asked to (1) identify the types of nuclear materials DOE will process using H-Canyon and its associated costs of operation, (2) determine whether SRS's radioactive waste storage tanks and associated nuclear waste facilities are capable of handling the additional waste generated by H-Canyon, and (3) describe H-Canyon's compliance with safety and environmental requirements. To conduct its work, GAO reviewed DOE's plans to process nuclear material using H-Canyon and visited SRS to observe the canyon and associated radioactive waste treatment facilities.

## What GAO Recommends

GAO recommends that DOE (1) ensure that all of the HEU and plutonium that DOE identifies as suitable for processing using H-Canyon is included in the department's plans, (2) develop a comprehensive cost estimate that includes all associated costs to operate the canyon, and (3) develop a plan to ensure sufficient staff are available to complete safety analyses in a timely manner. In its comments, DOE cited the actions that it is taking to address these recommendations.

To view the full product, including the scope and methodology, click on [GAO-08-840](#). For more information, contact Gene Aloise at (202) 512-3841 or [aloise@gao.gov](mailto:aloise@gao.gov).

## NUCLEAR MATERIAL

### DOE Needs to Take Action to Reduce Risks Before Processing Additional Nuclear Material at the Savannah River Site's H-Canyon

#### What GAO Found

DOE plans to process 23 metric tons of highly enriched uranium (HEU) and plutonium using H-Canyon; however, its cost estimate of \$4.3 billion to \$4.6 billion to process these materials through 2019 does not include all associated costs. First, DOE may identify additional HEU and plutonium as suitable for processing using H-Canyon, which could delay H-Canyon's planned 2019 shutdown and increase operational costs. Second, the estimate does not include the cost of storing and treating the waste generated by H-Canyon operations—approximately \$253 million according to DOE.

SRS's waste tanks are nearing capacity, and SRS cannot manage the projected waste from planned H-Canyon operations without critical enhancements. DOE is developing new technologies and building new facilities to meet these challenges. The most critical of these facilities—the Salt Waste Processing Facility—was originally scheduled to begin operating in 2009 but has been delayed twice and is now not projected to begin operations until as late as November 2013. If the facility is not completed on schedule, SRS will continue to face waste storage capacity challenges, which could affect the H-Canyon operating schedule. In addition, several potential events could significantly impede waste processing at SRS. For example, storage capacity could be reduced if critical equipment that reduces the amount of water volume in waste tanks malfunctions or if tank leaks develop.

DOE has determined that H-Canyon is operating safely, and with minimal environmental impact, and DOE expects it will continue to do so in the future. However, DOE must complete further safety and environmental analyses prior to processing additional nuclear material using H-Canyon. Some of these analyses have been delayed by as much as 2 years because SRS lacks sufficient technical staff to conduct them. If these delays persist, the processing of nuclear material using H-Canyon could be delayed.

#### H-Canyon at DOE's Savannah River Site



Source: DOE.