

Highlights of [GAO-11-752T](#), a testimony before the Subcommittee on Energy and Power, Committee on Energy and Commerce, House of Representatives

## Why GAO Did This Study

Since the 1940s, the Department of Energy (DOE) has been processing natural uranium into enriched uranium, which has a higher concentration of the isotope uranium-235 that can be used in nuclear weapons or reactors. This has resulted in over 700,000 metric tons of leftover depleted uranium, also known as “tails,” that have varying residual concentrations of uranium-235. The tails are stored at DOE’s uranium enrichment plants in Portsmouth, Ohio and Paducah, Kentucky. Although the tails have historically been considered a waste product, increases in uranium prices may give DOE options to use some of the tails in ways that could provide revenue to the government.

GAO’s testimony is based on its March 2008 report ([GAO-08-606R](#)). GAO updated the analysis in its 2008 report to reflect current uranium prices and actions taken by DOE. The testimony focuses on (1) DOE’s options for its tails and (2) the potential value of DOE’s tails and factors that affect the value.

In its 2008 report, GAO suggested that Congress consider clarifying DOE’s statutory authority to manage its tails. No action on this recommendation has been taken to date. Also, GAO recommended that DOE complete a comprehensive uranium management assessment. DOE issued a uranium management plan in December 2008 that addressed GAO’s recommendation.

View [GAO-11-752T](#) or key components. For more information, contact Gene Aloise at (202) 512-3841 or [aloisee@gao.gov](mailto:aloisee@gao.gov).

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## NUCLEAR MATERIAL

### DOE's Depleted Uranium Tails Could Be a Source of Revenue for the Government

## What GAO Found

DOE’s potential options for its tails include selling the tails “as is,” re-enriching the tails, or storing them indefinitely. DOE’s current legal authority to sell its depleted uranium inventory “as is” is doubtful, but DOE generally has authority to carry out the other options.

- *DOE’s authority to sell the tails in their current unprocessed form is doubtful.* Because of specific statutory language in 1996 legislation governing DOE’s disposition of its uranium, DOE’s authority to sell the tails in unprocessed form is doubtful, and under the rules of statutory construction, DOE likely lacks such authority. However, if Congress were to provide the department with the needed authority, firms such as nuclear power utilities and enrichment companies may be interested in purchasing these tails and re-enriching them as a source of nuclear fuel.
- *DOE could contract to re-enrich the tails.* Although DOE would have to pay for re-enrichment, it might obtain more value from selling the re-enriched uranium instead of the tails if its re-enrichment costs were less than the discount it would have to offer to sell the tails as is.
- *DOE could store the tails indefinitely.* This option conforms to an existing DOE plan to convert tails into a more stable form for long term storage, but storing the tails indefinitely could prevent DOE from obtaining the potentially large revenue resulting from sales at current high uranium prices.

DOE issued a comprehensive uranium management plan in December 2008 that stated that the department would consider selling depleted uranium or re-enriching it to realize best value for the government and that it would begin selling or re-enriching depleted uranium in 2009. However, to date, DOE has not sold or re-enriched any of its depleted uranium and, according to DOE officials, has no current plans to do so.

The potential value of DOE’s depleted uranium tails is currently substantial, but changing market conditions could greatly affect the tails’ value over time. Based on May 2011 uranium prices and enrichment costs and assuming sufficient re-enrichment capacity is available, GAO estimates the value of DOE’s tails at \$4.2 billion—about \$3.4 billion less than GAO’s March 2008 estimate. However, this estimate is very sensitive to changing uranium prices, which have dropped since GAO’s March 2008 report was issued. GAO’s estimate is also very sensitive to the availability of enrichment capacity. In particular, DOE would have to find a company with excess enrichment capacity beyond its current operations, which may be difficult if large amounts of enrichment processing were required.