April 3, 2008

NUCLEAR MATERIAL

Several Potential Options for Dealing with DOE's Depleted Uranium Tails Could Benefit the Government

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Highlights

Highlights of GAO-08-613T, a testimony before the Subcommittee on Oversight and Investigations, 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 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 and an environmental liability, recently an about tenfold increase 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 31, 2008, report entitled *Nuclear Material: DOE Has Several Potential Options for Dealing with Depleted Uranium Tails, Each of Which Could Benefit the Government* (GAO-08-606R). The testimony focuses on (1) DOE's potential options for its tails and (2) the potential value of DOE's tails and factors that affect the value. It also contains an analysis of DOE's legal authority to carry out the potential options.

In its report, GAO recommended that Congress consider clarifying DOE's statutory authority to manage depleted uranium. GAO also recommended that DOE complete a comprehensive uranium management assessment as soon as possible.

To view the full product, including the scope and methodology, click on GAO-08-613T. For more information, contact Robert A. Robinson at (202) 512-3841 or robinsonr@gao.gov.

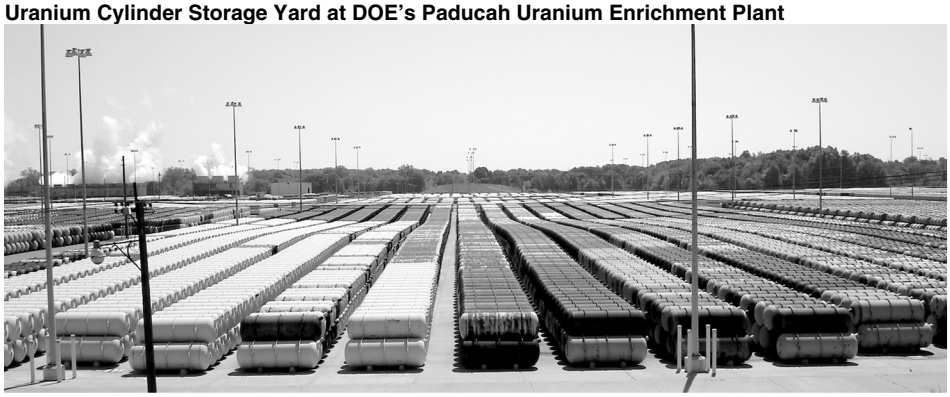
What GAO Found

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. The department has not finished a comprehensive assessment of these options and is still evaluating the details of how such options might be implemented.

- *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, we believe that DOE's authority to sell the tails in unprocessed form is doubtful and that, under 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.* While this option conforms to an existing DOE plan to convert tails into a more stable form for long term storage, storing the tails indefinitely could prevent DOE from obtaining the potentially large revenue resulting from sales at currently high uranium prices.

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 February 2008 uranium prices and enrichment costs and assuming sufficient re-enrichment capacity is available, GAO estimates the value of DOE's tails at $7.6 billion. However, this estimate is very sensitive to changing uranium prices, which recently have been extremely volatile, as well as to the availability of enrichment capacity.

Uranium Cylinder Storage Yard at DOE's Paducah Uranium Enrichment Plant



Source: DOE.