



Highlights of [GAO-03-426](#), a report to the Chairman, Subcommittee on Energy and Air Quality, Committee on Energy and Commerce, U.S. House of Representatives

Why GAO Did This Study

Spent nuclear fuel, the used fuel periodically removed from nuclear power reactors, is one of the most hazardous materials made by man. Nuclear power companies currently store 50,000 tons of spent fuel at 72 sites in 33 states. That amount will increase through 2010, when the Department of Energy (DOE) expects to open a permanent repository for this fuel at Yucca Mountain, Nevada. Concerns have been raised since September 11, 2001, that terrorists might target spent fuel. GAO was asked to (1) review federally sponsored studies that assessed the potential health effects of a terrorist attack or a severe accident on spent fuel, either in transit or in storage, and (2) identify options for DOE to further enhance the security of spent fuel during shipping to Yucca Mountain.

What GAO Recommends

GAO is recommending that, as DOE develops its plans for transporting spent fuel to Yucca Mountain, it assess potential options to further enhance the security and safety of this fuel.

In commenting on GAO's report, DOE and NRC generally concurred with the facts of the report. DOE noted that the information on transit was accurate and well-balanced, while the Nuclear Regulatory Commission (NRC) noted that the information provides a reasonable characterization of the current understanding of risks associated with spent fuel storage.

www.gao.gov/cgi-bin/getrpt?GAO-03-426.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Robin M. Nazarro at (202) 512-3841 or nazarro@gao.gov.

SPENT NUCLEAR FUEL

Options Exist to Further Enhance Security

What GAO Found

The likelihood of widespread harm from a terrorist attack or a severe accident involving commercial spent nuclear fuel is low, according to studies conducted by DOE and NRC. Largely because spent fuel is hard to disperse and is stored in protective containers, these studies found that most terrorist or accident scenarios would cause little or no release of spent fuel, with little harm to human health. Some assessments found widespread harm is possible under certain severe but extremely unlikely conditions involving spent fuel stored in storage pools. As part of its ongoing research program and to respond to increased security concerns, NRC has ongoing and planned studies of the safety and security of spent fuel, including the potential effects of more extreme attack scenarios, including deliberate aircraft crashes.

While NRC and DOE have found that spent fuel may be relatively safe and secure, DOE could potentially enhance the security of this fuel through options such as minimizing the number of shipments and picking up fuel in an order that would reduce risk, such as moving older less dangerous fuel first. These options could reduce the risk during transport and at some locations where the fuel is currently stored. However, contractual agreements between DOE and owners of spent fuel may limit DOE's ability to choose among these options. In addition, it is not clear that the benefits of these measures would justify the potential costs, including a possible renegotiation of the contracts between DOE and the spent fuel owners.