May 2008

LOW-LEVEL RADIOACTIVE WASTE

Status of Disposal Availability in the United States and Other Countries

GAO Accountability • Integrity • Reliability

Highlights

Highlights of GAO-08-813T, testimony before the Subcommittee on Energy and Air Quality, Committee on Energy and Commerce, House of Representatives

Why GAO Did This Study

Disposal of radioactive material continues to be highly controversial. To address part of the disposal problem, in 1980, Congress made the states responsible for disposing of most low-level radioactive waste (LLRW), and allowed them to form regional compacts and to restrict access to disposal facilities from noncompact states. LLRW is an inevitable by-product of nuclear power generation and includes debris and contaminated soils from the decommissioning and cleanup of nuclear facilities, as well as metal and other material exposed to radioactivity. The Nuclear Regulatory Commission (NRC) ranks LLRW according to hazard exposure—classes A, B, C, and greater-than-class C (GTCC). The states are responsible for the first three classes, and the Department of Energy (DOE) is responsible for GTCC. Three facilities dispose of the nation's LLRW—in Utah, South Carolina, and Washington State.

The testimony addresses (1) LLRW management in the United States and (2) LLRW management in other countries. It is substantially based on two GAO reports: a June 2004 report (GAO-04-604) and a March 2007, report (GAO-07-221) that examined these issues. To prepare this testimony, GAO relied on data from the two reports and updated information on current capacity for LLRW and access to disposal facilities.

To view the full product, including the scope and methodology, click on GAO-08-813T. For more information, contact Gene Aloise at (202) 512-3841 or aloisee@gao.gov.

What GAO Found

As GAO reported in 2004, existing disposal facilities had adequate capacity for most LLRW and were accessible to waste generators (hereafter referred to as disposal availability) in the short term, but constraints on the disposal of certain types of LLRW warranted concern. Specifically, South Carolina had decided to restrict access to its disposal facility by mid-2008 for class B and C waste—the facility now accepts about 99 percent of this waste generated nationwide—to only waste generators in the three states of its compact. If there are no new disposal options for class B and C wastes after 2008, licensed users of radioactive materials can continue to minimize waste generation, process waste into safer forms, and store waste pending the development of additional disposal options. While NRC prefers that LLRW be disposed of, it allows on-site storage as long as the waste remains safe and secure. In contrast, disposal availability for domestic class A waste is not a problem in the short or longer term. In 2004, GAO reported that the Utah disposal facility—which accepts about 99 percent of this waste generated nationwide—could accept such waste for 20 years or more under its current license based on anticipated class A waste volumes. Since 2005, the volume of class A waste disposed of has declined by two-thirds primarily because DOE completed several large cleanup projects, extending the capacity for an additional 13 years, for a total of 33 years of remaining disposal capacity. However, the June 2004 analysis, and the updated analysis, were based on the generation of LLRW only in the United States and did not consider the impact on domestic disposal capacity of importing foreign countries' LLRW.

Ten of the 18 countries surveyed for GAO's March 2007 report have disposal options for class A, B and most of C waste, and 6 other countries have plans to build such facilities. Only 3 countries indicated that they have a disposal option for some class C and GTCC waste; however, almost all countries that do not provide disposal for LLRW have centralized storage facilities for this waste. Only Italy reported that it had no disposal or central storage facilities for its LLRW, although it plans to develop a disposal site for this waste that will include waste from its decommissioned nuclear power plants and from other nuclear processing facilities. Italy initially expected this disposal site to be operational by 2010, but local governments' resistance to the location of this disposal site has delayed this date. The March 2007 report also identified a number of LLRW management approaches used in other countries that may provide lessons to improve the management of U.S. radioactive waste. These approaches include the use of comprehensive national radioactive waste inventory databases and the development of a national radioactive waste management plan. Such a plan would specify a single entity responsible for coordinating radioactive waste management and include strategies to address all types of radioactive waste. GAO had recommended that NRC and DOE evaluate and report to the Congress on the usefulness of these approaches. While the agencies considered these approaches, they expressed particular concerns about the significant resources required to develop and implement a national inventory and management plan for LLRW.