United States Government Accountability Office

Questions for Low-Level Radioactive Waste Management Experts

Introduction

The U.S. Senate Committee on Energy and Natural Resources has asked the Government Accountability Office (GAO) to report on approaches to improve the system of managing low-level radioactive waste in the United States. Concerns have been raised that deficiencies in the disposal component of this system may be placing excessive financial and other burdens on those entities that generate this class of radioactive waste. In particular, the U.S. Nuclear Regulatory Commission (NRC) contends that it is now time to explore alternatives to the present system because future availability of disposal capacity and the costs of disposal remain highly uncertain, and radioactive waste generators need predictability and stability in a national disposal system.

Research Objectives

GAO seeks to identify and examine approaches to help overcome deficiencies in the low-level radioactive waste management system that affect its reliability, cost-effectiveness, and potential future safety, of which assurance of disposal availability is a primary component. GAO is currently seeking opinions from knowledgeable domestic experts in low-level radioactive waste management about ways to overcome these deficiencies. Notwithstanding operational health, safety, and security assurances, we hypothesize that a well managed low-level radioactive waste system would ensure that:

1) Governmental or other designated entities provide reliable central waste storage or disposal capacity for the radioactive waste that is generated;

2) Radioactive waste is removed from waste generator sites to central waste storage or disposal facilities in an efficient and timely manner;

3) Radioactive waste generation is sufficiently monitored to determine the need for central waste storage or disposal capacity as well as to track the location and movement of radioactive wastes that pose safety and security risks;

4) Adequate funds are available to cover the cost of radioactive waste preparation, packaging, transport, and placement in central waste storage or disposal facilities.

Such a system is primarily oriented towards removing radioactive waste from generator sites, although a case can be made for retaining some radioactive waste at active or decommissioned nuclear power plant sites, as well as Department of Energy sites, as long as it is safe and secure.

We are also seeking input from domestic low-level radioactive waste management experts about their awareness of approaches taken by other countries to manage comparable low- and intermediate-level radioactive waste. Such approaches, on further

examination by GAO, might support actions that could be taken to improve the management of these radioactive wastes in the United States.

The following questions are intended to help guide our discussion with domestic low-level radioactive waste management experts.

General Questions

1) Do you agree that the time is right to explore alternative approaches that would make the low-level radioactive waste disposal system more predictable (reliable) and stable (cost-effective)? If not, why not?

2) Do you believe that potential safety concerns might arise in the future if waste generators in most states are denied access to dispose of their classes B and C waste after mid-2008, and no other disposal alternative comes forward? What about greater-than-class C (GTCC) waste?

3) Do you believe that any lack of disposal availability for classes B and C waste after mid-2008, for at least five years, would significantly affect the use of nuclear materials by academic, industrial, medical, and government research entities? Why or why not?

4) We are attempting to identify deficiencies in the current low-level radioactive waste management system, which affect its reliability, cost-effectiveness, and potential future safety. As criteria, we hypothesize that a well managed system should have at least the four attributes previously stated. What is your opinion of these attributes as a workable model?

5) Would you revise these attributes in any way and, if so, how would you do so?

Provision of Central Waste Storage or Disposal Availability

6) Is there a better way to distribute responsibility for providing low-level radioactive waste disposal availability than the current system established by the Low-Level Radioactive Waste Policy Act of 1980, as amended?

7) What specific actions might be taken by the Congress or federal agencies to modify the current state compact system for providing low-level radioactive waste disposal availability?

8) It appears that some other countries have no plans to develop low-level radioactive waste disposal facilities, at least for long-lived intermediate-level radioactive waste. Is developing central storage facilities for classes B, C, and GTCC waste an option for the United States? Why or why not?

9) Can you provide examples of other countries that distribute responsibility for providing central waste storage and/or disposal availability more effectively and efficiently than is done in the United States?

Efficient and Timely Removal of On-Site Radioactive Waste

10) Despite license and inspection programs to help ensure that stored radioactive waste is safe and secure, do you believe that it is now time for NRC and Agreement States to consider placing time limits on the on-site storage of these radioactive wastes at non-nuclear utility sites that will not decay in a reasonable amount of time? Why or why not? What conditions would need to be in place for regulatory agencies to take this action?

11) Providing central storage facilities for classes B, C, and in some cases GTCC waste might be a mechanism to promote the removal of these wastes from generator sites in the absence of a disposal alternative or the high cost of disposal. Would providing this storage availability alone help encourage the efficient and timely removal of waste from generator sites?

12) Are you aware of any countries that have regulations and/or incentives in place that require and/or encourage the efficient and timely removal of low-level radioactive waste from generator sites to central waste storage or disposal facilities?

13) Many other countries have clearance rules for the lower end of our class A waste. Would instituting a clearance rule, in lieu of case-by-case exemptions, be an effective way to promote the more rapid removal of these wastes from generator sites, or in some cases negate the need for on-site removal of some waste? Why or why not?

14) In the case of sealed radiological sources, would a requirement that disused sources be returned to their manufacturer or supplier, as is done in France, be an effective way to promote the more timely removal of these sources from user sites? Why or why not?

Sufficient Waste Monitoring and Tracking

15) What are the potential benefits and costs of having a national or state-based system to track the quantities of radioactive waste in storage at waste generator sites, especially for classes B, C, and GTCC radioactive wastes?

16) Several countries seem to distinguish between low-level radioactive waste produced by nuclear power plants, and low-level radioactive waste resulting from academic, industrial, medical, and government research use of nuclear materials. Are there reasons to take this approach? If so, why?

17) Are you aware of any countries that are particularly effective at monitoring and tracking the volume and duration of on-site waste storage?

18) Is there a better way to track low-level radioactive waste that is transferred from generator sites to disposal sites than currently exists in the United States?

Adequate Funding for Waste Processing, Transport, Storage, and Disposal

19) What does the claim that the low-level radioactive waste system is not cost-effective mean to you?

20) Are low-level radioactive waste disposal costs higher than they should be in the United States, as compared to some other countries? If so, can you illustrate this claim?

21) What are the most important factors affecting the cost of disposal in the United States? Can disposal costs be made more predictable?

22) To what extent might the establishment of a national clearance rule for low-level radioactive waste affect the cost of disposing of these wastes? Is this a good idea?

23) In what ways has the reduction in waste generation affected the bottom line financial viability of developing any new waste storage and disposal facilities? Has the generation of low-level radioactive waste from year to year become more predictable?

24) Would charging some type of waste disposal fee upon the purchase of radioactive material by licensees help promote a more cost-effective disposal system and more predictable disposal costs? Why or why not? How might this be accomplished?

25) Would it be advisable to alter the way that escrow fund requirements are imposed on licensed users of radioactive materials to cover the future cost of decommissioning or decontaminating their facilities? Why or why not?

26) What information and steps would be required to establish a more effective escrow fund structure to ensure that sufficient funds are available to cover future decommissioning and decontamination costs?

Foreign Country Selection to Examine Best Management Practices

We have already identified some reports that provide information on the low-level radioactive waste management systems in other countries, including the National Reports from the First Review Meeting of the Joint Convention on The Safety of Spent Fuel Management and the Safety of Radioactive Waste Management. We are also using various country reports from the Nuclear Energy Agency and papers from the proceedings of the 2004 radioactive waste management meeting held in Cordoba, Spain.

27) Are you aware of other sources of information that compare the low-level radioactive waste management systems of countries?

We recognize that this is a long list of questions and that you might not be in a position to respond to some of them. If you would like us to have your written answers to those questions for which you have responses, we would welcome them at the time of our meeting or at a later date.

WE APPRECIATE YOUR ATTENTION TO THESE QUESTIONS