



Savannah River Site Citizens Advisory Board

Recommendation 223 Plutonium Consolidation – GAO Report

Background

The Department of Energy (DOE) stores about 50 metric tons of plutonium that is no longer needed by the United States for nuclear weapons. Some of this plutonium is contaminated metal, oxides, solutions, and residues remaining from the nuclear weapons production process. To improve security and reduce plutonium storage costs, DOE plans to establish enough storage capacity at Savannah River Site (SRS) in the event it decides to consolidate its plutonium at SRS until it can be permanently disposed of in a geologic repository at Yucca Mountain, Nevada. The Government Accountability Office (GAO) was asked to examine (1) the extent to which DOE can consolidate this plutonium at SRS and (2) SRS's capacity to monitor plutonium storage containers.

The GAO recently issued a report that recommends that the department develop a comprehensive strategy to consolidate, store, and eventually dispose of its plutonium and ensure that its facilities' cleanup plans are consistent with its plutonium consolidation plans. The report notes several complications, including heightened costs due to necessary security upgrades, difficulties preparing the plutonium for transportation, and other problems that have delayed consolidation at SRS. The report points out that the department has twice scrapped plans to build facilities at SRS that would have been capable of storing and monitoring excess plutonium as well as processing the material for eventual shipment to Yucca Mountain. Due to these cancellations, DOE has no means for processing its most heavily contaminated plutonium into a form suitable for permanent disposition (Ref. 1).

DOE cannot yet consolidate its excess plutonium at SRS for several reasons. First, DOE has not completed a plan to process the plutonium into a form for permanent disposition, as required by the National Defense Authorization Act (NDAA) for Fiscal Year 2002. Without such a plan, DOE cannot ship additional plutonium to SRS. . Until DOE develops a permanent disposition plan, additional plutonium cannot be shipped to SRS and DOE will not achieve the cost savings and security improvements that consolidation could offer. Second, SRS cannot receive all of the plutonium from DOE's Hanford Site because it is not in a form SRS planned to store. Specifically, about one-fifth of Hanford's plutonium is in the form of 12-foot-long nuclear fuel rods, which Hanford had planned to ship intact to SRS as part of its efforts to accelerate the cleanup and demolition of its closed nuclear facilities. However, SRS's storage plan called for storing DOE's standard storage containers and not intact fuel rods. Recent changes in DOE's security requirements have complicated SRS's storage plans by eliminating one facility that DOE planned to use to store plutonium

The NDAA for Fiscal Year 2002 calls for DOE to prepare a plan for disposal of the surplus defense plutonium and defense plutonium materials currently located at SRS and for disposal of defense plutonium and defense plutonium materials to be shipped to SRS in the future. Congress requested the plan no later than February 1, 2002, and stipulated that if DOE does not submit the plan by the required date, DOE shall be prohibited from shipping defense plutonium or defense plutonium materials to SRS during the period beginning on February 1, 2002, and ending on the date on which such plans are submitted to Congress (Ref. 2).

The plan requirements included a review of each option considered for disposal; an identification of the preferred option for disposal; an estimate of the cost of construction and operation of any facilities required for disposal; a schedule for the expeditious construction of such facilities, including milestones; a firm schedule for funding the cost of such facilities; and a specification of the means by which all defense plutonium and defense plutonium materials will be removed in a timely manner from SRS for storage or disposal elsewhere.

The Act goes on to state that if DOE determines not to proceed at the SRS with construction of the plutonium immobilization plant, or with the mixed oxide fuel fabrication facility, DOE shall prepare a plan that identifies a disposition path for all defense plutonium and defense plutonium materials that

would otherwise have been disposed of at such plant or such facility, as applicable.

Comments

While the report has several inaccuracies and comes across as critical, it does reaffirm what the SRS Citizens Advisory Board (CAB) has been pointing out for several years — that DOE has no comprehensive plan to manage, consolidate or dispose of plutonium. The CAB has adopted several recommendations (Ref. 3, 4, 5 & 6) that specifically address plutonium disposition. The SRS CAB repeatedly has asked DOE to expedite the development of a complete, well-considered plan for the disposition of all excess plutonium to preclude unnecessary extended storage at SRS. The CAB has also asked that DOE not ship plutonium to SRS until there is a realistic exit strategy for the stored plutonium. The CAB's basic concern is that SRS not receive additional plutonium until a viable and demonstrated disposition path is available and DOE is processing plutonium from vulnerable form(s) to a less vulnerable form. These recommendations are similar to many of the stipulations in the NDAA for Fiscal Year 2002.

DOE's written comments on the GAO report, point to the establishment of the Nuclear Materials Disposition and Consolidation Coordination Committee (NMDCCC). This Committee will be responsible for developing and ensuring implementation of a Strategic Plan for disposition and consolidation of special nuclear materials. DOE intends for this Strategic Plan to include a comprehensive strategy for plutonium consolidation. However, DOE provided very little information on the specifics of the reports/plans that will be developed, the timeline/due-dates for the reports/plans, the members of the committee, and the roles and responsibilities of the committee members.

Recommendation

The SRS CAB recommends that DOE:

1. Develop a comprehensive strategic plan to consolidate, store, and eventually dispose of its plutonium no longer needed for the nuclear weapons program. The plan to develop the strategy must include a public participation component. DOE shall develop the disposition plan with input from the public and consideration of the public's concerns.
2. As part of the Nuclear Materials Disposition and Consolidation Coordination Committee Strategic Plan, evaluate building a dedicated robust facility capable of storing and monitoring excess plutonium as well as processing the material for eventual shipment to Yucca Mountain.
3. By November 15, 2005, provide specifics on the Nuclear Materials Disposition and Consolidation Coordination Committee including:
 - the working titles of reports that will be developed and the timeline for their development
 - the timeline, with milestones, for the development and approval of the strategic plan,
 - the members of the committee
 - roles and responsibilities of committee members.

References

1. "Securing U.S. Nuclear Materials: DOE Needs to Take Action to Safely Consolidate Plutonium," U.S. Government Accountability Office (GAO), GAO-05-665, July 2005.
2. National Defense Authorization Act for Fiscal Year 2002, SEC. 3155. Disposition of Surplus Defense Plutonium at Savannah River Site, Aiken, South Carolina.
3. Citizens Advisory Board Recommendation No. 170 (adopted September 23, 2003), "EM Owned Plutonium Storage and Disposition at SRS."
4. Citizens Advisory Board Recommendation No. 171 (adopted September 23, 2003), "NEPA Implementation."
5. Citizens Advisory Board Recommendation No. 188 (adopted March 24, 2004), "Plutonium Disposition".
6. Citizens Advisory Board Recommendation No. 196 (adopted July 27, 2004), "Plutonium Shipments and Disposition".

Agency Responses

[Department of Energy-SR](#)