



**Savannah River Site
Citizens Advisory Board**

**Recommendation 196
Plutonium Shipments and Disposition**

Background

Congress required the Defense Nuclear Facilities Safety Board (DNFSB) and the Secretary of Energy to submit to Congress reports on the actions taken by the Secretary of Energy in response to the proposals made in the DNFSB's study *Plutonium Storage at the Department of Energy's Savannah River Site* (Ref.1). The first report was to be provided not later than 6 months after submission of the study and every year thereafter. In its initial report to Congress, the DNFSB proposed that DOE complete a study to evaluate options for plutonium storage at the Savannah River Site (SRS). This proposal was intended to achieve a broad perspective on plutonium disposition and storage. Based upon the first annual report, the DNFSB concluded that while DOE is addressing the specific proposals in the initial study, the Secretary of Energy should take a more encompassing view of the current situation with regards to the storage and disposition options for the country's excess plutonium inventory (Ref. 2). Initial DOE storage plans were based on the assumption that planned immobilization and mixed-oxide fuel (MOX) facilities would provide a NEAR-TERM disposition path for all the excess plutonium metal and oxide. Accordingly, in 2001 the Actinide Packaging and Storage Facility (to package and store plutonium) was cancelled and DOE decided to store excess plutonium in existing 50-year-old facilities. Although K-Reactor (KAMS) is a 50-year-old facility, the DNFSB considers it to be a robust structure that can be made suitable for extended storage of plutonium. Building 235-F (235-F), also a 50-year-old facility, does not meet current safety standards and will require substantial upgrades before it is suitable for extended storage of plutonium. The DNFSB believes that DOE should remove plutonium currently stored in 235-F and not use it for extended storage of plutonium until proposals in the DNFSB's study have been implemented. The current DOE plutonium disposition plan relies, in part on successful licensing, construction, and operation of the MOX Fuel Fabrication Facility for disposal of most of the excess plutonium. However, DOE has not identified disposition plans for approximately 5 metric tons of excess plutonium principally from Rocky Flats, and a possible additional 4 metric tons of excess plutonium now at Hanford in Washington state. The DNFSB points out that it is important for DOE to establish a firm, technically feasible disposition path for excess plutonium not planned for use in MOX fuel. Without a clearly defined disposition path, plutonium storage in SRS facilities could continue indefinitely.

Comments

The SRS CAB again stresses to DOE the importance of involving the public early in the decision process. The CAB's basic concern/issue is not WHAT the ultimate disposal option is but that there is a documented disposal option with a definite timeline. At this time, with the little information available to them, the CAB can only conclude that no such necessary document exists for properly reducing risk from plutonium with no defined future use.

In summary:

- The DNFSB has chided DOE for not having a disposition path for the plutonium with no defined programmatic use (i.e., non-MOXable plutonium).
- DOE has transferred all the excess plutonium from Rocky Flats to SRS for indefinite storage. The plutonium at Hanford is packaged to be transferred from that facility to another, as yet undetermined facility, also for indefinite storage. It is most probable that SRS will be the recipient of the Hanford plutonium, as much as 4 metric tons.
- Congress has decreased the MOX facility funding for fiscal year 2005, and the start of construction has been delayed. The realization of the MOX facility is dependent on the negotiations between the US and Russia, and therefore cannot be depended upon. The

likelihood of having a facility to process the weapons-grade plutonium into commercial reactor fuel appears more and more unlikely.

- Classification of the Plutonium was considered by DOE several years ago and not pursued. DOE appears to have resurrected the vitrification option for certain plutonium forms.
- When does DOE expect to have a workable plan for the disposal of non-programmatic plutonium as has been requested by the DNFSB and that the SRS CAB is most interested in reviewing?

Recommendation

The SRS CAB recommends that DOE:

1. Ensure that an exit strategy exists before commitments are made to receive surplus plutonium at SRS.
2. Present the preferred proposed plutonium disposition strategy, its implementation, and schedule to the SRS CAB by September 26, 2004.
3. Make available to the CAB and the public any studies to support this plutonium disposition option.
4. Ensure a public forum and comment period on the plutonium disposition option is included in the NEPA process.

References

1. "Plutonium Storage at the Department of Energy's Savannah River Site," Defense Nuclear Facilities Safety Board study, December 1, 2003.
2. "Plutonium Storage at the Department of Energy's Savannah River Site – First Annual Report to Congress," Defense Nuclear Facilities Safety Board study, June 2004.
3. Citizens Advisory Board Recommendation No. 171 (adopted September 23, 2003), "NEPA Implementation" and Recommendation No. 170 (adopted September 23, 2003), "EM Owned Plutonium Storage and Disposition at SRS".
4. Citizens Advisory Board Recommendation No. 188 (adopted March 24, 2004), "Plutonium Disposition."

Agency Responses

Department of Energy-SR