



Savannah River Site Citizens Advisory Board

Recommendation 214 Plutonium Disposition Options

Background

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 approximately 13 metric tons of excess plutonium-laden materials that do not have an approved disposition path, although a minor portion of this amount may be suitable for MOX fuel. A large quantity of this plutonium material is stored at Savannah River Site (SRS). Currently, DOE is considering, at a preconceptual stage, the design and construction of a plutonium vitrification facility at SRS for the disposition of this plutonium (Ref. 1).

Furthermore, it appears likely all the surplus plutonium and plutonium materials in the DOE complex will eventually be transported to SRS for storage and disposition (Ref. 2). Without a clearly defined and approved disposition path, plutonium storage in SRS facilities could continue indefinitely. This extended storage at a single location would reduce some risk factors but would not eliminate others. Long-term storage increases the lifecycle costs of plutonium disposition. If vitrification is not pursued swiftly, or encounters political, funding, or policy reevaluations, the opportunity to utilize the Defense Waste Processing Facility (DWPF) for the disposition of the vitrified plutonium will be lost, and the plutonium will likely remain at SRS even longer. Plutonium vitrification coupled with the DWPF will leverage DOE's DWPF capital costs.

Comments

The SRS Citizens Advisory Board (CAB) has adopted several recommendations (Ref. 3, 4, 5 & 6) that specifically addressed plutonium disposition. The SRS CAB 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 knows how it is going to process plutonium from vulnerable form(s) to a less vulnerable form. The SRS CAB believes that plans for plutonium processing should not be limited to the plutonium vitrification facility. There are other options like processing plutonium in H-Area or at least process a portion of the plutonium in H-Area until the plutonium vitrification facility is operational. Such an option is supported by the DNFSB as well as the SRS CAB.

Recommendation

The SRS CAB recommends that DOE:

1. Send no additional shipments of DOE excess weapons grade plutonium to SRS until five percent of the existing quantities of plutonium at SRS has been dispositioned successfully.
2. Not rely solely on the plutonium vitrification facility to process the excess plutonium but pursue options to process plutonium in H Area.

References

1. Savannah River Site Proposed Plutonium Vitrification Capability, presentation to the NM Committee by Sachiko McAlhany, April 25, 2005.
2. SRS Environmental Management Program Performance Management Plan, WSRC-RP-2002-00245, rev. 6, August 7, 2002.
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".

Minority Statement
From William Willoughby
On
“Plutonium Disposition Options”

On May 24, 2005, the Savannah River Site (SRS) Citizens Advisory Board (CAB) approved the “Plutonium Disposition Options” recommendation presented by the Nuclear Materials Committee. While I agree with the principles behind the recommendation, I did not vote for its approval. Instead, I decided to submit a Minority Statement to voice my concerns.

I believe that the decision to limit recommendation #1 to “DOE excess weapons grade plutonium” is too narrow and is not consistent and conflicts with the wording in the “Comment” section of the motion. I can understand the potential need to ship small quantities of excess plutonium from samples, standards, and research-related materials to SRS and not want to restrict the shipment of this material. But, I am concerned that significant quantities of surplus plutonium from processing residues, non-irradiated fuel and fuel fabrication scraps, and waste materials may not be included under the term “excess weapons grade plutonium”. I believe DOE needs to determine a disposition path for all of the excess plutonium in the DOE complex and significant quantities of all of this excess plutonium should not be sent to SRS until some of the existing inventory of plutonium currently stored at SRS is dispositioned.. Therefore, as part of this Minority Statement, I formally request that DOE:

1. Send no significant shipments of DOE excess plutonium to SRS for long-term storage until the disposition path for this material has been determined and at least five percent of the existing quantities of plutonium at SRS has been dispositioned successfully.

Agency Responses

[Department of Energy-SR](#)