



Recommendation No. 153

April 23, 2002

TRU Waste Priority and Off-site Shipments

Background

The Waste Isolation Pilot Plant (WIPP) has been developed as the repository for the DOE Transuranic (TRU) waste. The WIPP site is located deep within underground salt deposits near Carlsbad, NM. The Savannah River Site (SRS) has two principal types of TRU waste contaminated with either Pu-239 or Pu-238. Pu-239 has a half-life of 24,500 years whereas Pu-238 has a much shorter half-life of 87.8 years. This means that Pu-238 is approximately 280 times more radioactive weight for weight than Pu-239. However, depending upon the amount or weight loading of each radionuclide, both waste streams can present significant risk levels, especially for Pu-238 wastes intermixed with organics, which can generate flammable hydrogen gases.

The SRS Citizens Advisory Board (CAB) has been concerned about the treatment and disposition of both waste streams for some time (Ref. 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10). On May 28, 2001, the first shipment of Pu-239 waste left SRS bound for WIPP. In FY01, seven (7) waste shipments were completed and SRS expected to make 12 shipments during FY02 (Ref 11). However, no shipments of Pu-238 waste has occurred and will not occur unless enhancements are made in the transportation requirements or costly alternative treatment technologies are employed (Ref. 12).

Comment

SRS has the largest inventory of Pu-238 TRU waste in DOE, and because there is no disposition path clearly identified for Pu-238 wastes intermixed with organics, they remain a great risk to the environment and the public near SRS. With the new push toward Cleanup Reform Appropriations, SRS should be making the elimination of this risk one of its highest operational priorities.

Over the years, the SRS CAB has been a strong advocate for DOE to institute an accelerated schedule for removing all of the TRU wastes from SRS. The SRS CAB was elated to hear about the first shipments of TRU waste to WIPP and applauds SRS for reaching this milestone. However, even these TRU waste shipments have been delayed because of the lack of availability of TRUPACT II shipping containers. SRS CAB finds this completely unacceptable, especially in light of the way the transfer of Mound Pu-238 TRU wastes to SRS was lauded as a way to accelerate SRS shipments of Pu-239 TRU waste to WIPP, while now all shipments have been delayed.

Recommendation

In light of the fact that SRS should strive to reduce the highest risks to its workers, the environment, and the public, the SRS CAB makes the following recommendations:

1. DOE-HQ allocates the necessary number of TRUPACT II containers for SRS to meet its FY 02 commitment of a **MINIMUM** 12 shipments.
2. DOE-HQ accelerates shipments of TRU waste from SRS by expanding capabilities such as HANDSS-55, and authorizations at SRS to package higher loading of Pu-238 or Pu-239 consistent with DOE, DOT, and NRC rules and regulations and meeting WIPP WAC in TRUPACT-II containers in order to maximize SRS risk reduction.
3. DOE-HQ expedites the removal of the highest hazard TRU waste from SRS and uses the Cleanup Reform Appropriations as a method to acquire funding to eliminate this risk.
4. DOE-HQ develops an effective and efficient operational plan to utilize the TRUPACT II containers for TRU waste shipments from all DOE weapons complex sites.
5. SRS expedites the design and construction of the facilities to repack, characterize, and certify its TRU waste shipments to WIPP.
6. DOE-HQ accelerates its work with the Nuclear Regulatory Commission to receive approval to transport higher gram loading of SRS Pu-238 TRU waste mixed with organics by incorporating technology such as the hydrogen "getters".

References

1. Citizens Advisory Board Recommendation No. 4 (adopted March 28, 1995), "Transuranic Waste".
2. Citizens Advisory Board Recommendation No. 11 (adopted November 28, 1995), "Transuranic Waste".
3. Citizens Advisory Board Recommendation No. 18 (adopted March 26, 1996), "Transuranic Waste".
4. Citizens Advisory Board Recommendation No. 27 (adopted November 19, 1996), "Treating Combustible Transuranic Waste and Shipment to WIPP".
5. Citizens Advisory Board Recommendation No. 47 (adopted November 18, 1997), "Environmental Management Integration and some SRS Specific Recommendation".
6. Citizens Advisory Board Recommendation No. 77 (adopted January 26, 1999), "WIPP RCRA Part B Permit".
7. Citizens Advisory Board Recommendation No. 97 (adopted September 28, 1999), "The Shipment of Pu-238 Waste to the Waste Isolation Pilot Plant".
8. Citizens Advisory Board Recommendation No. 111 (adopted January 25, 2000), "WIPP RCRA Permit/Transuranic (TRU) Waste".
9. Citizens Advisory Board Recommendation No. 125 (adopted May 23, 2000), "WIPP RCRA Permit Modification (Miscertification Rate on a Waste Stream Basis)".
10. Citizens Advisory Board Recommendation No. 130 (adopted September 26, 2000), "Mound TRU Waste Shipments to SRS".
11. Offsite Waste Shipments Update, presentation to the CAB WM Committee by Sonny Goldston, October 21, 2001.
12. Alternative Treatment Technology for Pu-238 Waste Forms, presentation to the CAB WM Committee by Dale Ormond, August 22, 2000.

Agency Responses

Department of Energy-SR