SRS Citizen's Advisory Board

Savannah River Site
Citizens Advisory Board

Recommendation 194
DWPF Recycle

Background
The critical shortage of tank space in the HLW system threatens to delay stabilization of nuclear materials at SRS and may result in suspending vitrification of HLW at the Defense Waste Processing Facility (DWPF). The DWPF was commissioned to begin transforming the sludge and supernate components of the High Level Waste into a vitrified product that would be disposed at the federal repository. The DWPF returns a recycle water stream from its process operations to the tank farm. This stream is currently the largest volume source of influent to the tank farm. Because it is the largest influent stream to the tank farm, reducing or redirecting some portion of it would help in the management of HLW tank space. SRS has plans to process some of the DWPF recycle (that portion potentially classified as low level waste) directly to Saltstone. Since the DWPF recycle stream is very dilute, it is appropriate feed for evaporation. SRS ultimately plans to install an acid-side evaporator to reduce the DWPF melter vapor phase emissions (also known as overheads) and offgas and canister decontamination overheads. The acid evaporator project is estimated to cost $50 million and will not become operational until FY09 (Ref. 1). Another key to tank space capacity and flexibility is the disposal of limited low-curie salt to Saltstone. If successful, this process as currently discussed with SRS, DHEC, and NAC would create tank space to support and accelerate waste removal, feed preparation, and tank closure (Ref. 2). This process would result in less than 5 million curies of radioactivity being disposed of in the Saltstone vaults as a low activity waste.

Comment
The Defense Nuclear Facilities Safety Board (DNFSB) has been a proponent of an acid-side evaporator for several years and points out the significant safety implications of failing to proceed with the development of salt removal and decontamination capabilities (Ref. 3). The Savannah River Site (SRS) Citizens Advisory Board (CAB) supports both concepts for increasing critically needed tank space. However, the SRS CAB is concerned about the 5-year delay in getting an acid-side evaporator operational and believes the project needs to be accelerated. In addition, the SRS CAB believes that SRS should proceed with the near-term DWPF recycle disposal and limited low-curie salt to Saltstone campaign as soon as possible.

Recommendation
While the main priority remains salt processing and tank closure, the SRS Citizens Advisory Board (CAB) supports increasing tank space capacity as funding allows and therefore recommends the following:

1. DOE-SR increase its emphasis on DWPF recycle reduction through implementation of technology and/or management techniques including contractor incentives.
2. DOE-SR accelerate the design and construction and regulatory approvals of the acid-side evaporator and strive to have it operational by FY07.
3. DOE-SR accelerate the near-term DWPF recycle disposal and limited low-curie salt to Saltstone campaigns as soon as regulatory approvals allow.
4. DOE-SR provide specific dates as soon as possible, but no later than December 31, 2004, on when the CAB can expect feedback on the progress of reducing the DWPF recycle, the evaporator installation, and low curie salt disposition.

References

1. Savannah River Site High Level Waste Tank Space Management Status, presentation to

the WM Committee by Doug Hintze, June 22, 2004.
2. Update on Accelerated Cleanup Activities at SRS, presentation to the WM Committee by Terrel Spears, June 22, 2004.
3. Defense Nuclear Facilities Safety Board, Staff Issue Report "Safety Impacts of Suspending Salt Disposition at the Savannah River Site" transmittal letter from John Conway, Chairman, June 18, 2004.

Agency Responses

Department of Energy-SR