

Peter S. Winokur, Chairman
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**DEFENSE NUCLEAR FACILITIES
SAFETY BOARD**

Washington, DC 20004-2901



December 7, 2011

The Honorable Steven Chu
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Chu:

The Defense Nuclear Facilities Safety Board (Board) issued Recommendation 2001-1, *High-Level Waste Management at the Savannah River Site* (SRS), to address the critical shortage of tank space in the high-level waste (HLW) system. This critical shortage threatened to delay stabilization of nuclear materials at SRS and potentially impact vitrification activities at the Defense Waste Processing Facility (DWPF). Once the Department of Energy (DOE) had addressed the immediate issue of leaks in an old-style tank, further corrective actions focused on selecting and developing salt processing capabilities and improving HLW management. The Board received DOE's letter dated November 8, 2011, describing the status of open commitments in the current Implementation Plan for Recommendation 2001-1. These few open items can be adequately tracked using the Board's normal oversight processes. Therefore, the Board closes Recommendation 2001-1.

During the last decade, DOE resumed operations at the Saltstone facility and started the Actinide Removal Process and the Modular Caustic Side Solvent Extraction Unit to process tank wastes. These efforts supported the removal of sludge wastes from about one-third of the old-style tanks. This sludge is being stabilized into glass at the DWPF. Furthermore, DOE returned Tanks 49 and 50 to normal service and significantly improved the availability of the 2H and 3H evaporators. Finally, DOE began issuing regular revisions to the HLW system plans and launched a series of initiatives to reduce waste inflows to the HLW system. Based on the above actions, the Board concludes that DOE has made satisfactory progress toward reducing the risks associated with old-style tanks and has met the intent of Recommendation 2001-1. The path forward for the open commitments is as follows:

- The Salt Waste Processing Facility (SWPF) project is mature—design and construction are currently 99 percent and 49 percent complete, respectively. The Board will oversee the remainder of this project using its normal oversight processes.
- The Board understands that new initiatives have reduced the near-term need to return Tank 48 to waste service. When the project is reactivated, the Board will oversee the design and construction of facilities necessary to eventually treat waste in Tank 48.

- The Board agrees with DOE's proposal to continue to use Tank 50 as a feed tank for Saltstone instead of modifying it for higher-curie material.
- DOE has committed to installing equipment to reduce the volume of DWPF recycle waste by 1.25 million gallons per year. The Board agrees with the proposal to coordinate this installation with the planned outage to physically connect the tank farms to SWPF.

Despite the significant progress noted above, DOE will face several challenges in the coming years that have the potential to increase the required service life of aging tanks and systems. In particular, when SWPF becomes operational, DOE will dramatically increase the processing rate for salt waste. This will, in turn, significantly increase the volume of decontaminated salt solution that must be processed through the Saltstone facility. The Saltstone facility has repeatedly shut down during the last few years as a result of plugging, pump failures, and other process upsets. The Board understands that during the first half of 2012, the operating contractor will attempt to improve the reliability of Saltstone by modifying much of the processing equipment. At the Board's public hearing in Augusta, GA, on June 16, 2011, DOE and its contractor discussed their intention to conduct a demonstration run to prove that Saltstone can reliably process decontaminated salt solution at the rates required for full-time SWPF operation. The Board considers this run to be of the highest importance, and looks forward to a full and thorough demonstration.

In closing, the Board remains concerned that challenges to the HLW system will lead to an extended mission for old-style tanks at SRS. The timescale for closing tanks has consistently fallen short of milestones set by DOE. The Board urges DOE to limit waste storage in the old-style tanks to that necessary to support waste removal and to expedite the closure of these tanks as a high priority. The Board will continue to track progress on waste removal and tank closure.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter S. Winokur". The signature is stylized and somewhat cursive.

Peter S. Winokur, Ph.D.
Chairman

c: Mr. David Huizenga
Dr. David C. Moody
Ms. Mari-Jo Campagnone