

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 4, 1998

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director

**FROM:** J. Kent Fortenberry

**SUBJECT:** SRS Report for Week Ending December 4, 1998

**Future Plutonium Storage at SRS** - Below is a summary of surplus Pu metal, oxide, or treated residues (in units of 3013 containers) currently planned for either Immobilization or MOX.

SRS	1,500	ANL-W	1,500
RFETS	2,100	LANL	300
Hanford	4,000	LLNL	100

10,000 additional containers can be expected from Pantex pits. The planned capacity for Pu storage at SRS is 5000 containers in APSF and 3000 containers in K-Area. This storage capacity will be used for the SRS, RFETS, and Hanford material. Plans are to transfer Pu from RFETS by 6/2002, at which time transfer of Pu from Hanford could begin. Without additional storage space, Pu from LANL, LLNL, and ANL-W will have to be stored at those sites until the Immobilization and MOX facilities are ready to begin receiving and processing material. If there are no delays in the start-up of the Immobilization facility, transfer of Pu from LANL, LLNL, and ANL-W could begin 10/2006. The proposed MOX facility would also have to be completed (currently scheduled for 2007) in order to complete the transfer of Pu from LANL, LLNL, and ANL-W. The ability to process Pantex pits through the Pit Disassembly and Conversion facility (scheduled to be operational by 3/2005) also depends on the availability of either the MOX facility to accept the converted Pu or the Immobilization facility to free up storage space. WSRC has identified the need for a joint EM/MD/SRS effort to address integration issues associated with the storage and processing of surplus Pu. Limited storage capacity could result in the extended use of existing aging storage facilities, a delay in the de-inventory of other sites, or a delay in pit disassembly. There are also questions regarding the compatibility of packaging processes and containers such as non-ASME cans being used at LANL as well as non-ASME cans and low-fired oxide being considered for the Pit Disassembly and Conversion facility.

**Americium-Curium Vitrification** - The first integrated vitrification run (precipitation and feed system coupled to the melter and pour system) with the developmental 5-inch Cylindrical Induction Melter (CIM) was successfully conducted this week at the TNX facility. The second phase of the DOE-SR sponsored independent review also began this week with the Independent Review Team (IRT) making its first site visit. The IRT will review Am-Cm development work, safety documentation, and program/project management. The team is composed of team leader Teresa Fryberger (PNNL), Larry Avens (LANL), Dave Odland (independent consultant), Tom Weber (independent consultant), Steve Barnes (West Valley), and Philip Hildebrandt (independent consultant). Based on discussions during this initial visit the team will likely look closely at the alternative processes that have been considered. The team also appears to be very interested in the pre-treatment operations that must be performed in preparing feed for the proposed vitrification of Am/Cm. The team is planning two additional site visits, and a final report is expected in February 1999. The conceptual design package (5% design complete) for Am-Cm vitrification is also scheduled for completion in February 1999. These results, including results from the 5-inch CIM integrated runs, will be used in making a decision in mid-February of whether to proceed with preliminary design of the vitrification system. WSRC is reluctant to identify an estimated project completion date until after a project re-baseline at 40% design completion, scheduled to occur June 1999. However, conservative estimates indicate an operational vitrification system by August 2001, and completion of Am-Cm stabilization by June 2002.