

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 15, 2002

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
J. J. McConnell, Deputy Technical Director  
**FROM:** R. T. Davis/ T. D. Burns  
**SUBJECT:** SRS Report for Week Ending November 15, 2002

Board members A. J. Eggenberger and J. E. Mansfield along with staff members J. K. Fortenberry, R. E. Tontodonato and D. G. Ogg were on-site this week reviewing high-level waste, nuclear material processing and storage, material disposition, and defense program activities. On Tuesday, Board members toured the Tritium Extraction Facility construction site and the proposed site for the Pit Disassembly and Conversion Facility. On Wednesday, Board members toured P-Area, L-Basin, and the K-Area Material Storage facility.

**HEU Blend Down:** The first Readiness Assessment (RA) for the Highly Enriched Uranium (HEU) Blend Down program covers transfer of blend grade HEU from H-Canyon to the HEU receipt tank in HA-Line. Field work for this RA was complete in October (site rep weekly 10/25/02). This week, WSRC completed corrective actions for the Type A findings and signed off on the final RA report. DOE line management performed oversight activities during the RA and should complete their report next week. During the next week, WSRC will be running solutions through 2<sup>nd</sup> uranium cycle to produce blend grade HEU and the first transfer of solution to HA-Line is expected to occur next Friday. Sample results following this transfer will help provide assurance that WSRC can meet the purity specifications for the final Low Enriched Uranium product.

**Low-Curie Salt:** WSRC has decided to remove the unexpected solids found in Tank 50 prior to returning this tank to high-level waste service (site rep weekly 11/1/02). The solids contain a small amount of organic material that would require more stringent flammability controls to be invoked on Tank 50. Potential carry-over of these organics during transfers could force other tanks to adopt the more stringent flammability controls as well. Additionally, there is a concern that oxalates in the solid material could facilitate the precipitation of uranium and lead to potential criticality problems. WSRC is preparing a path forward to remove and disposition the solids from Tank 50.

**Americium/Curium:** SRTC analyses of the F-Canyon simulant material (site rep weekly 10/18/02), though not conclusive, indicate that elevated temperature coupled with extended agitation are likely contributors to the flow degradation problems experienced during previous cold runs. Also, moderate dilution has been demonstrated to restore the degraded simulant to acceptable flow characteristics. Controls on heating and agitation have been identified to avoid future degradation of either simulant of actual americium/curium material, and an intermittent flushing capability for the waste header is being pursued to ensure that pluggage can be cleared without interrupting a transfer should flow characteristics of either simulant or americium/curium material degrade despite the restrictions on temperature and agitation. Testing this week with newly prepared simulant resulted in flow rates through the waste header in excess of requirements (> 20 gpm). However, the viability of the contingency flushing capability remains to be demonstrated. An additional integrated cold run is scheduled for early-December and the actual americium/curium transfer is expected in mid-January.