

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 30, 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 August 30, 2002

**Public Interaction:** On Tuesday, Dr. Burns briefed the Citizens Advisory Board on DNFSB perspectives regarding high-level waste activities at the Savannah River Site. Dr. Burns outlined several areas important to the Board including continued pursuit of alternate cesium removal technologies, minimization of the DWPF recycle influent stream, and mitigation of potential worker safety vulnerabilities at the Saltstone Production Facility prior to introduction of low-activity salt solution.

**Sludge Processing:** Two emergent issues with the Advanced Design Mixer Pump (ADMP) have delayed sludge removal activities in Tank 18. The pump column of the ADMP, which houses the shaft and other pump internals inside the tank, is pressurized to prevent waste in-leakage. Column pressure has an upper limit to restrict the potential consequences of waste aerosolization due to sparging should a column leak occur. Start-up testing of the ADMP indicated that insufficient air flow was being supplied to the column. WSRC is redesigning the safety significant orifice in the air supply line to increase the air flow.

Additionally, DOE-SR review of the Authorization Basis for Tank 18 sludge removal identified an error regarding the assumed pressure of the backup air supply system. The backup system was assumed to be at 95 psi consistent with the primary plant air supply. Subsequently, it was determined that the air bottles comprising the backup system are actually at 2200 psi. WSRC is revising the accident analysis calculations and expects to submit an AB revision to DOE for review next week.

**HEU Blend Down:** WSRC estimates that construction activities are more than 85 % complete and that the Highly Enriched Uranium (HEU) Blend Down Project is on schedule to support shipping Low Enriched Uranium (LEU) solution to the Tennessee Valley Authority vendor in March 2003. Equipment startup testing, operator training and procedure validation are on-going. WSRC plans to begin operations in a phased approach. The first phase involves producing and storing blend grade HEU in an HA-Line tank. The Readiness Assessment (RA) for this phase is scheduled for October with the first transfer of material to tank E4-2 in HA-Line scheduled for early November. H-Canyon storage capacity for HEU solution is nearly exhausted and transfer of material to HA-Line in November will help ensure WSRC can continue Mark 16/22 processing.

The second phase includes blending HEU with natural uranium to meet the LEU specifications. This activity is scheduled to begin in January 2003. The third phase covers loading LEU into shipping containers. The WSRC RA is scheduled for January with a DOE RA for this phase in February. The DOE RA will also cover aspects of the blending activity. NNSA continues to work with TVA and its vendor, Nuclear Fuel Services (NFS), to ensure that natural uranium will be delivered to the site in January and NFS can receive LEU in April.