

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 3, 2001

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** R. T. Davis  
**SUBJECT:** SRS Report for Week Ending August 3, 2001

**Receiving Basin for Offsite Fuels (RBOF):** On Wednesday, a can containing Heavy Water Components Test Reactor (HWCTR) fuel disengaged from the lifting hook and dropped approximately 1 foot in the RBOF basin. Operators were moving this can to a cask for onsite shipment to L-Basin. Subsequent video inspection identified a 2 inch crack in the aluminum can with release of material into the basin. Once identified, the can was isolated in the repackaging basin. The facility entered a Limiting Condition of Operation (LCO) because the can degradation did not meet the requirements identified in the Nuclear Criticality Safety Evaluation (NCSE) for storage of this fuel. The LCO required immediately stopping fuel handling and developing a response plan within 24 hours. WSRC developed a response plan that required a criticality analysis and basin sampling. Based on satisfactory results, the LCO was exited. A path forward to overpack this fuel and ship it to L-Basin is currently being developed.

**2H Evaporator:** Last Sunday, WSRC formally exited the chemical cleaning mode for the 2H evaporator. This activity was required to remove solids that accumulated in the pot and resulted in shutdown of this evaporator in January 2000. This week, WSRC pursued jumper realignment and temporary modification removal to get ready for evaporator operations. Testing is on-going for the safety basis purge systems (compressed gas system and standby nitrogen system) that are required to help prevent a pot deflagration accident.

The solids identified in the 2H pot in January 2000 contained a higher ratio of uranium to sodium than assumed in the NCSE. A Potential Inadequacy in the Safety Analysis was declared and compensatory measures were established. Because of the potential for additional solids deposition after evaporator restart, a new NCSE was developed. The NCSE concludes that a criticality is incredible if programs are in place to maintain feed to the evaporator at low enrichment (less than 1.1 wt% U-235). As a part of the enrichment control program, WSRC began adding uranyl carbonate (depleted uranium) to the evaporator feed tank (Tank 43) last week to reduce the enrichment from approximately 4 wt% to a target of 0.7 wt%.

The staff continues to work with DOE-SR and WSRC to resolve issues associated with controls to prevent hydrogen deflagration. The contractor management self-assessment should begin within the next 2 weeks following approval and implementation of authorization basis documents. WSRC expects to begin the contractor readiness assessment in late August with evaporator startup scheduled for mid-October.

**HLW Tank 5:** On Monday, WSRC completed a transfer of approximately 270,000 gallons of waste out of Tank 5. This transfer reduces the waste level in this tank below all known leak sites and is consistent with Recommendation 2001-1.