

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 19, 1997

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director  
**FROM:** J. Kent Fortenberry / Joe Sanders  
**SUBJECT:** SRS Report for Week Ending September 19, 1997

Joe Sanders was on annual leave this week.

**HLW Tank Leak Detection Conductivity Probe** - Leak detection boxes equipped with alarming conductivity probes provide leak detection for double contained HLW transfer lines. While investigating an abnormal response to an alarm functional test, the Tank 22 leak detection box conductivity probe was found raised about 2 inches. When the probe was lowered to its required position it alarmed. About a pint of uncontaminated water was removed from the leak detection box to clear the alarm. A monthly surveillance verifies the correct position of the leak detection probes. Because of the implication that the probe may have been improperly raised to clear an alarm, Tank Farm management has solicited help from WSRC OGC to interview all of the operations shift supervisors. The results of these interviews will be used to determine any further investigations. Additionally, Tank Farm managers have been conducting a conduct of operations assessment this week. The source of the water appears to have been condensation. After removing the water, the system was pressure tested, revealing no leakage.

**H-Canyon FEB Review and Phase II Start-up** - H-Canyon Phase II operations, which includes First Cycle solvent extraction of uranium and neptunium as well as Solvent Recovery, is scheduled for restart February 1998. Cold chemical runs should start the end of this October, followed by both a WSRC and a DOE-SR Readiness Assessment. In addition, H-Canyon will undergo a Facilities Evaluation Board (FEB) review during the next two weeks.

**HB-Line Pu-239 Operation** - The processing of Pu-239 sweepings and turnings is scheduled to begin in HB-Line Phase I (Scrap Recovery) January 1998. Pu-239 material will be dissolved and filtered, and the resulting plutonium-nitrate solutions transferred to the H-Canyon until HB-Line Phase II (scheduled to startup the end of 1999) is ready to convert the solution to oxide. HB-Line has not processed significant amounts of Pu-239 in the past, imposing a minimum Pu-238 isotope weight percentage as a safety limit. To accommodate Pu-239, Nuclear Incident Monitors have been installed and a Double Contingency Analysis has been prepared. Although all vessels in HB-Line Scrap Recovery are geometrically favorable, criticality safety is maintained through control of plutonium isotopic content, fissile mass, and moderation. Readiness Self-Assessments are currently being conducted by the facility for the Phase I dissolver operations. A WSRC ORR is scheduled for this November, and a DOE ORR is scheduled for December.