DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 15, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending June 15, 2001

HLW Tank 5: On Thursday, WSRC discovered a leak in the primary wall of Tank 5 at the 94" level (approximately 29" below the waste level). Waste is contained in the annulus. This leak is similar to leaks seen recently in Tank 6. Both of these tanks are Type I tanks located in F-Tank Farm with a similar operating history. WSRC has been using these tanks, and Tank 8, to store DWPF recycle waste and other higher silicate waste material.

On Monday, WSRC completed a transfer of approximately 100,000 gallons of DWPF recycle from Tank 22 in H-Area to Tank 5. Crawler and annulus inspections performed prior to this transfer did not indicate any problems. The leak identified on Thursday is near a vertical weld and also appears to be inline with a downcomer that is welded to the tank internal wall. A similar downcomer likely contributed to 4 of the 6 leak sites identified in Tank 6.

WSRC is developing procedures and performing system modifications to support a transfer of waste from Tank 5 to Tank 8 to reduce the waste level below this leak site. This transfer is scheduled to be performed by the middle of next week and will increase the waste level in Tank 8 to approximately 160", which is above recent operating history seen during sludge removal activities. Tank 8 is also a Type I tank in F-Area; however, it does not have the internal downcomer that may have contributed to some of the cracks seen in Tanks 5 and 6. Loss of this storage space may impact DWPF operations within the next month unless recycle storage options are identified and implemented.

2H Evaporator: As a part of the cleaning activities, the dilute nitric acid cleaning solution and dissolved scale from the pot are transferred to a temporary tank for neutralization prior to sending the material to Tank 42. Last weekend during this neutralization process, approximately 1200 gallons of waste were released from the neutralization tank into a stainless steel dike. The material was contained and no personnel uptakes or contaminations were identified. The cause of this leak is still being investigated. This week, WSRC efforts have focused on safely confining the waste, removing waste from the dike and decontaminating the dike. WSRC will likely pursue additional mechanical cleaning of the pot next week; however, chemical cleaning activities are on hold pending recovery from this spill.

HB-Line: WSRC continues preparations for the startup of HB-Line Phase II to convert H-Canyon plutonium solutions to oxide. Demonstration runs with equipment, procedures and operators in-place are scheduled to begin in mid-July followed by the WSRC and DOE Operational Readiness Reviews (ORRs) in August and October, respectively. Procedure development and training are on-going. System modifications are nearing completion with the exception of transfer lines between H-Canyon and HB-Line. Replacement of these jacketed transfer lines may not be complete when the WSRC ORR begins.