

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 1, 2006

**TO:** K. Fortenberry, Technical Director  
**FROM:** R. Quirk and W. Linzau, Hanford Site Representatives  
**SUBJECT:** Activity Report for the Week Ending September 1, 2006

Mr. Quirk was out of the office this week.

Tank Farms: The site rep observed startup activities of the 242-A Evaporator. The facility was last in operation in March of this year to perform a cold run (see Activity Report dated 3/31/06) and the last hot run (reduction of tank waste) was about a year prior to the cold run. This campaign will feed 600,000 gallons from waste tank AW-102 and transfer sludge to AP-103 and AP-108 with a projected waste volume reduction of 42 percent. In general, the operations were well conducted even though a number of mechanical problems caused delays. The seal water flowrate for the slurry pump was below the operating specification. A waiver was granted to operate with a lower flowrate after the manufacturer of the seal was consulted and an additional operator surveillance was incorporated into the operating procedures. Currently, waste is being fed to the evaporator and the specific gravity is being raised to 1.42 prior to starting slurry transfer to AP-103.

K Basins Closure (KBC): The project determined it was advisable to implement changes to the design of the sludge retrieval system in K East to address an ALARA concern. Check valves will be installed in the lines to the sparge and re-suspension/dilution lances to preclude backflow of the sludge into the dilution skid. One of the hoses will also be replaced with a shorter length but larger diameter hose to ensure that there is adequate dilution water during hand sparging. The continued questioning of the adequacy of the design by Engineering is a sign of an improving organization. The implementation of the design change is scheduled to begin after the start of the Contractor Operational Readiness Review.

Waste Treatment Plant: During drilling operations of deep borehole C4996, a small interbed was encountered that was in addition to the four interbeds anticipated. This interbed, known as the Byron interbed, was at a depth of 1,322 feet below grade, is about five feet thick and is between lava flows in the Priest Rapids Member. Before the intersection of this interbed, the drilling plan was to proceed 100 feet past the last interbed to a depth of 1,368 feet but the plan is being revised to proceed to 1,468 feet to ensure good shear wave data collection of the basalt in that region. In addition, the revised plan includes drilling of the corehole to the same depth to confirm thicknesses of the interbed and surrounding basalt.

The site rep conducted a walkdown of the High Level Waste facility to view concrete wall penetrations that are configured to provide radiation shielding and prevent streaming. A significant number of these penetrations may require placement of additional shielding or modification because errors have been identified in design, fabrication or construction. The site rep has requested a briefing on the causes, scope and corrective actions for these discrepancies.