

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 5, 2004

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending November 5, 2004

Waste Treatment Plant (WTP): Regarding WTP's transition to a DOE-STD-3009 approach, the Board stated in their May 29, 2003 letter that "it is the Board's expectation that the revised control set will still maintain a heavy reliance on . . . preventive controls and limit the use of mitigative . . . controls to appropriate applications." The Board staff discussed with Bechtel how their proposed control set for molten glass spills, whose credited safety significant controls mitigate the consequences of a spill rather than prevents the spill, meets this expectation.

Tank Farms: A 25% extension can be granted for technical safety requirement surveillance frequencies. Since the clock is reset when the surveillance is actually performed, it presents a vulnerability with meeting the TSR's intent if repeated extensions are granted. A Site Rep review of a year's worth of extensions did not find that this has occurred to date. However, it appears that planning for transfers could be improved since many of the extensions are requested shortly before a waste transfer after it is discovered that equipment tests are not up-to-date.

A Potential Inadequacy in the Safety Analysis was declared after new calculations found that the times to reach the lower flammability limit in 3 tanks was less than the frequency that monitoring was required. However, in practice the monitoring of these tanks was being performed more frequently than the revised frequency. In addition, it was discovered that there was a long-standing error in the waste compatibility spreadsheet which may have resulted in the erroneous conclusion that a tank was meeting corrosion chemistry limits when it actually was not.

K Basin Closure Project: Fluor Hanford (FH) is aggressively pursuing the use of divers to conduct debris size reduction, debris removal, and vacuuming sludge. The anticipated benefits would be to reduce cost and schedule by increasing efficiency with short handled tools and hands on work instead of long-handled tools. FH has also stated that long term dose reductions may be possible by completing the work faster, although no study has been performed to support this yet. During a presentation by FH and the diving company, DOE radiological control personnel and the site rep questioned the experience of the divers with water as contaminated as the K Basins as well as actual and potential radioactive particulate concentrations as this, especially in K-East basin. The divers agreed that the high contamination levels experienced from recent cross contamination occurrences and equipment removal far exceed their experience. The project has proposed placing a diver suit in the basin for several hours in the vicinity of long handled tool operations similar to what the divers would be doing and evaluating the contamination levels and ability to decontaminate. Concerns with the large quantity of mobile radiological source would also need to be addressed, this includes not only corroded fuel and fuel fines but also Ion Exchange resin that has been found to have dose rates in excess of 100R/hr.