

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 10, 2005

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** J. S. Contardi/M.T. Sautman, SRS Site Representatives  
**SUBJECT:** SRS Report for Week Ending November 10, 2005

**HB-Line:** This week in Phase I, a maintenance technician removed a programmable logic controller (PLC) card in order to repair a disabled component. The technician was unaware of all the functions the card controlled and an unexpected safety significant alarm was received in the control room. The PLC card was labeled as general service since no safety class or safety significant components were controlled by the card and hence no interactions with safety-related components was assumed. When the card was removed, an engineered interlock closed valves to the purge air system. As required by the authorization basis, the contractor entered the facility into a limiting condition for operations (LCO). The technician's actions did not degrade a safety-related component, however, the unexpected entrance into an LCO could have been avoided. A critique was held and corrective actions identified. The contractor has also reported the event as a management concern.

To adequately address this event and several others, the contractor has suspended all HB-Line operations for 48 hours and will not restart Phase 1 dissolution operations until operational performance improves.

**Modular Repackaging System:** The lead controller determined that the performance of the emergency preparedness drill that was conducted for the Readiness Assessment (RA) team was unsatisfactory. The Site Reps are waiting to see how this drill failure is addressed by the facility and contractor RA team, especially since the Department of Energy (DOE) RA team evaluated this drill in parallel with the contractor RA team. This practice is not the norm elsewhere.

**Defense Waste Processing Facility:** A preliminary analysis indicates that an explosion due to trapped hydrogen could cause the Mercury Water Wash Tank (MWWT) and some seal pots to fail. A detailed analysis is determining whether the MWWT failure mode would be due to burst or fragmentation since the latter may result in nearby safety equipment being damaged. Attempts so far to identify preventive controls for these explosions have not been successful. The final safety basis strategy may involve relying on mitigation or accepting the risk. Because of the lack of existing code guidance and limited data, the Site Rep believes the path forward outlined by the contractor will require extensive review of the gas composition, how the pressure spike during an explosion was modeled, and how the ability of the equipment to withstand an explosion was evaluated.

**Tritium Extraction Facility:** The Site Reps observed oral boards for a shift technical engineer and control room operator, one of which was a failure. The boards were thorough, conducted professionally, and fairly assessed the candidates' performances.

**Department of Energy Oversight:** Based on preliminary review results, the Site Reps intend to expand their review of DOE's line and independent oversight programs and their effectiveness.