

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 2, 2009

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending January 2, 2009

Waste Treatment Plant: The contractor issued its report that addresses the potential for using a reduced radiological material-at-risk (MAR) inventory in the safety analysis and design (Activity Report 12/19/08). The contractor noted that the radiological waste is dominated by the waste in two double-shell tanks, AZ-101 and AZ-102, and suggests that this waste rather than the values specified in the contract could be used for the design. The contract specified MAR has been described as the super tank, which is a compilation of the worst constituents in all tanks in the tank farms. The results of the MAR reanalysis noted in this interim report include: large-scale events that would involve multiple vessels (e.g., earthquakes and headspace explosions) in the Pretreatment Facility (PT) would likely still exceed the evaluation guidelines for safety-class (SC) controls; the functional classification of the PT C5 ventilation, air system, and vessel mixing and purge systems would not change; the functional classification of some PT HPAV controls as well as the seismic and equipment qualification requirements of some PT equipment could be reduced; no events in the High Level Waste Facility (HLW) would trip the guideline for SC controls; one of the two trains of emergency power for the HLW could be eliminated; and the seismic and equipment qualification requirements of some HLW equipment could be reduced.

A team, including senior personnel from the Office of River Protection (ORP), the WTP and tank farms contractors, and personnel from other sites will meet next week to discuss the conservatism in the existing safety basis. Three areas that affect conservatism will be addressed: interpretation of DOE STD 3009; the use of the super tank, including the impact of radioactive decay; and additional conservatism applied by the contractor.

Tank Farms: The contractor is resolving two issues that are preventing tank waste retrievals and transfers. Both deal with Commercial Grade Item Dedication (CGID). The first issue was determined to be a Technical Safety Requirements (TSR) violation because key components of the safety-significant (SS) leak detection system used for many waste transfers were procured as commercial grade and not upgraded with the CGID process (Activity Report 11/21/08). Another TSR violation was declared because SS valves used to prevent waste transfer misroutes were not leak tested per the standard identified in the Documented Safety Analysis (DSA) (Activity Report 11/28/08). The other functional requirement noted in the DSA for these valves is that they must comply with ASME B31.3. This week ORP determined that the CGID packages for the valves were inadequate with respect to the B31.3 requirements. The contractor is assessing the vendor's QA program that was in place when the valves were procured to determine if it is sufficient to support dedication of the valves. The contractor is also revising their QA program to comply with NQA-1-2004 requirements including CGID.

River Corridor Closure Project: An electrical fault in a transformer external to the building resulted in arcing, actuation of the fire protection system, and loss of normal electrical power to Building 324, the Chemical Materials Engineering Lab. The hazard category 2 facility is undergoing deactivation and the plans were to remove normal power within the next few months. No electrical equipment in the facility is SC or SS.