

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 17, 2008

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending October 17, 2008

Tank Farms: A technology exchange meeting was held between the Tank Operations Contractor, representatives from Savannah River Site (SRS), partner companies, and subcontractors. Topics discussed were tank integrity evaluations, including single-shell tanks; enhanced chemical cleaning proposed for final cleaning of tanks at SRS; various types of pumps used for retrieving sludge; and modular wiped film evaporators.

Safety-significant ventilation systems in every double-shell tank farm experienced unplanned shutdowns during the last week. Ventilation has been restored in all but two of the six double-shell tank farms. Causes range from improper implementation of the work control program (see Hanford Activity Report 10/10/08), failures in the electrical supply system, and failures in the non-safety-related control system of a recently upgraded ventilation system. Contractor senior management believes that all the problems are unrelated, but they are reviewing them to determine if there are common causes.

Solid Waste Storage and Disposal Project: The contractor discovered a noncompliance with the Technical Safety Requirement (TSR) Specific Administrative Control (SAC) that ensures vented drums that contain flammable gases are segregated and abated to safe levels before movement. On September 17, 2008, a retrieved drum was vented and sample results indicated high volatile organic compound levels but was not labeled as needing abatement nor placed in the diffusion zone. A similar event occurred almost a year ago when a drum with elevated hydrogen levels was moved out of the diffusion zone prior to completion of the abatement period. The event last year was one of a sequence of TSR violations that were classified as recurring (see Hanford Activity Report 11/23/07), but the corrective actions were ineffective in preventing this recent human performance failure.

Sludge Treatment Project: The project completed preliminary cost estimates and hazard assessments of the seven alternatives for grouting the sludge from the floor, pits, and settler tube tanks as recommended by the Independent Expert Review Committee (IERC) (see Hanford Activity Report 9/12/08). The contractor concluded that most of the activities for the alternatives are similar to those previously analyzed and only safety-significant controls would likely be required. Additionally, they noted that if a new facility is built to process the liquid sludge, it would likely require safety-significant confinement. The project proposed to DOE that the new facility could also be used to house a pretreatment system for tank waste. The project addressed the other recommendation of the IERC by noting that if they encounter too many problems with the container used to ship the sludge to the central plateau, they could build the new facility near the K West Basin rather than on the central plateau.

The contractor continues the characterization of knockout pot (KOP) sludge (see Hanford Activity Report 7/25/08) and has noted that there are significant differences between the sludge in the various canisters. The variability of the sludge makes it more difficult to determine the number of long-term storage containers that will be required.