

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 24, 2009

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending December 25, 2009

Tank Farms: The Office of River Protection (ORP) sent a letter to the contractor that addressed the DOE Criticality Safety Steering Group (CSSG) recommendations from their recent review. The CSSG concluded there is an adequate margin of safety for subcriticality, but there were voids in the associated documentation. ORP directed the contractor to re-evaluate the technical bases for ensuring criticality safety for operations, and to address issues such as mixing and the separation of high-density and large-diameter particles that quickly settle on tank bottoms.

Last week the contractor identified that safety-significant waste transfer valves that will be used for the upcoming retrieval of waste from single-shell tank (SST) C-104 leaked during a low-pressure leak tightness test of other components. The work package to re-install the valve operator "funnel" did not note that nuts and lock washers were required, so workers removed them from the packing nut assembly and re-installed them above the funnel. This is another example of problems with work planning and control in the tank farms.

The site rep observed a contractor training session for the changes to the safety basis that are being implemented next month. This training was for managers in Operations and the technical staff; next month operators and technicians will receive similar training. The site rep noted the pace of the training was fast and the open-book written examination was not challenging.

Plutonium Finishing Plant (PFP): The steam-turbine-driven backup fan for the ventilation exhaust system unexpectedly started and the supply fans were automatically shut down when workers were removing an abandoned exhaust turbine control panel. The workers were new to PFP and did not understand the significance of the turbine starting, nor did they hear the public address announcements related to the turbine starting because they were in a high noise area, and therefore continued to work. A drawing incorrectly shows the control panel as having been removed almost 20 years ago, yet the ventilation system expert was not consulted during the work planning process to assist in the reconciliation of the error. The contractor is evaluating if an adequate walkdown was performed by the work planners because the old panel and new panel shared a ventilation header pressure sensing line.

River Corridor Closure Project: Workers were exposed to potentially contaminated dust from the demolition of an exterior room of N Reactor. The room being demolished was posted as a contamination area and had an opening to an adjacent corridor where workers were preparing to start work associated with the Fission Product Trap (see Activity Report 12/11/09). No personnel were near the demolition because it was roped off, but potentially contaminated concrete dust filled the corridor. No spread of contamination was discovered, but supervisors were slow to recognize the hazard and ensure worker safety. Management is evaluating the risks of conducting heavy demolition in parallel with other work activities in the same facility and integration of multiple contractor organizations.

Waste Treatment Plant: ORP completed an assessment of the design of the autosampling system. There were no findings, but a number of observations and follow-up items were discussed at the out-brief. The review did not address the ability to obtain a representative sample from a vessel.