

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 12, 2010

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending February 12, 2010

Board staff members F. Dozier, R. Oberreuter, A. Polaski, C. Shuffler, and S. Stokes were on-site to review the design of the safety systems at the WTP Pretreatment Facility.

Plateau Remediation Contractor (PRC): DOE concluded that the Integrated Safety Management System (ISMS) was not adequately implemented by the contractor because of major weaknesses in TRU Waste Retrieval operations. At the out-brief for the ISMS Phase II Verification, the DOE team noted the problems at Waste Retrieval include: emergency response procedures were not followed; hazards were not adequately identified, controlled, and communicated; problems were not resolved prior to restarting work; scope creep resulted in procedures no longer supporting current operations; and responsibilities were not commensurate with training or qualification. The team also identified problems with ISMS at other PRC operations, including: safety requirements were not integrated in 25 percent of reviewed work packages; hazard identification and analyses for projects with long durations were not tailored for specific work activities; and feedback and improvement were not effectively implemented at the activity level.

The DOE team noted two significant upsets when the contractor used an excavator to move soil in a TRU burial ground trench. The scope of work, hazard analysis, and control development did not reflect the ad hoc nature in which the TRU waste was buried in this trench. A worker inadvertently removed the port cover from a buried glovebox with the excavator bucket; surveys determined what had been categorized as a radiological buffer area had become a high contamination area. Workers resumed retrieval operations days later before lessons-learned were identified. They penetrated a buried pressurized vessel with the excavator bucket, resulting in two jets of odorous gas and soil. Personnel failed to implement emergency response procedures, did not call 911, and did not request assistance from the Hazmat response team for two hours. Worker and management responses demonstrated a failure to implement lessons-learned from the waste retrieval event at the 618-2 burial ground and waste spill event at tank S-102.

Plutonium Finishing Plant (PFP): The contractor identified a Potential Inadequacy in the Safety Analysis (PISA) because calculations using default dose conversion factors (DCF) result in non-conservative doses. The Board's staff recently questioned the basis for changing some DCFs in an amendment to the safety basis. The contractor subsequently identified an ICRP recommendation to use a different DCF for typical fires. An extent-of-condition review identified PISAs at several other facilities, including U Plant, PUREX, REDOX, and 224-T.

Tank Farms: The contractor concluded they were not ready to implement major changes to the DSA next week. Both the contractor assessment team and the ORP oversight team noted deficiencies including the failure to validate the flowdown of safety basis requirements into procedures as well as poor retention of material from training (see Activity Report 12/24/09).

River Corridor Closure Project: A worker was contaminated on their forehead during cleanup activities after applying fixative to a hot cell in Building 324. The application of lessons-learned from problems applying fixative at N Reactor were not evident (see Activity Report 12/11/09).