

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 5, 2012

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending October 5, 2012

W. Linzau was off-site this week and J. Troan was on-site providing site rep support.

Plutonium Finishing Plant (PFP): A worker performing routine radiological surveys experienced symptoms of respiratory distress shortly after investigating a spill in the duct level of 234-5Z. The worker was wearing the PPE specified in the radiological work permits (RWP), including a respirator with a particulate but not chemical cartridge. He was investigating a drop falling from an overhead pipe when he noted a fist-sized wet spot on the floor. He surveyed the spot and reported that the contamination levels were less than detectable and the leak appeared to be coming from a 60 percent nitric acid process line near the ceiling. The worker began coughing vigorously and became nauseous. He was taken by ambulance to the hospital and treated for chemical exposure. Approximately 15 other potentially affected workers were evaluated by the on-site medical provider, but no related issues were identified. During the event investigation, the contractor identified that contrary to a report written in 2006 that noted all nitric acid lines in this room had been drained, this line had not been drained. This was known by some of the staff for about one year but not reported to management. Workers concluded this week that there had been an intermittent leak from an elbow in the overhead nitric acid line. The senior contractor manager at PFP told engineering to review all the chemical lines in the process facilities and identify any that had not been drained. He then told the staff to drain and remove these lines to eliminate the hazards before performing any nearby work. He also directed his management team to modify the RWPs used for routine surveys so workers are required to leave the area rather than investigate unanticipated conditions. Additionally, he reinforced that all spills of unknown materials are to be treated as hazardous chemicals until proven otherwise.

Safety Culture Survey: As part of the extent of condition review for the Board's Recommendation 2011-1 on safety culture at WTP, the Richland Operations Office and Office of River Protection conducted a safety culture survey of their federal and contractor employees. The independent contractor who conducted the survey presented an overview of the results this week and noted that, in general, the responses indicate there is an adequate safety culture but also identified areas that require improvement. DOE and contractor managers are reviewing details in the survey report so they can develop corrective actions.

Tank Farms: The contractor concluded that the waste transfer pump in double-shell tank AN-106 failed again (see Activity Report 3/2/12). This pump provides the supernatant that is used with the Mobile Arm Retrieval System (MARS) to retrieve waste from single-shell tank C-107. Replacing the pump in AN-106 will delay completing the C-107 retrieval operations beyond the expiration date for the two recently extended justifications for continued operations (JCOs) (see Activity Report 9/21/12). The contractor is evaluating if they should proceed with the planned revisions to the DSA that will resolve the generic waste transfer system freezing and water hammer JCOs. They may use a DSA addendum that addresses the specific waste system freezing issues with equipment in the C-107 MARS enclosure box.

Plateau Remediation Contractor: J. Fulton replaced J. Lehew as the president of the company.