

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 8, 2014

**TO:** S. A. Stokes, Technical Director  
**FROM:** D. Gutowski and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending August 8, 2014

**Plutonium Finishing Plant (PFP).** The site rep met with RL and contractor personnel to discuss why they have not performed non-destructive assay (NDA) of portions of the 26-inch Vacuum System process lines. This system was originally used to move material between gloveboxes. In 2005, workers found a segment of 6-inch pipe in the Vacuum System plugged with plutonium-rich solids. One of the horizontal pipe segments not NDAed was connected to and was just a few feet below the plugged segment. Contractor management is evaluating expediting the NDA for this particular pipe segment.

A worker performing NDA in a contamination area/airborne radioactivity area suffered a small puncture wound when the sharp stub of a tie wrap penetrated their latex gloves. The tie wrap had been used to firmly secure a high-voltage cable to the NDA probe. The initial and follow-up wound counts did not detect any contamination, and the worker was released for work. Workers have since removed the tie wrap. Management is also revising most radiological work permits to require more substantial hand protection for much of the work in the facility.

Workers encountered an unexpected white powder while taking a characterization sample from inside the E-4 ventilation exhaust duct. The E-4 system maintains gloveboxes and hoods at a vacuum. As expected for this upset condition, the work team stopped. The material will be sent to the 222-S Laboratory for characterization.

**Solid Waste Operations Complex.** The contractor determined from the NDA of a large waste box that it contained approximately five times more plutonium than anticipated. They concluded that although the quantity was significantly more than the value assumed in the criticality safety evaluation report, it was only a criticality safety deviation, not the more significant discrepancy or violation. The fiberglass reinforced waste box contained waste from PFP and had been buried in a trench. It was excavated a few years ago and has been stored outside in the Central Waste Complex since then.

**Waste Treatment Plant.** ORP, with concurrence from DOE headquarters, approved the Safety Design Strategy (SDS) for the High Level Waste (HLW) Facility with no conditions of approval. ORP plans to conduct an assessment of SDS implementation 6 to 12 months following conditional authorization to proceed with HLW engineering, procurement, and construction.

**Tank Farms.** The contractor issued an update to the waste transfer compatibility program which includes a new requirement to evaluate tanks AN-101 and AN-106 for any unexpected gas retention or release behavior. The evaluation must occur after exceeding 275 inches of sludge depth, but prior to reaching 300 inches of sludge. Sludge depth cannot exceed 300 inches until after the results of this evaluation are sent to ORP.

**Richland Operations Office (RL).** RL noted the Startup Notification Reports that were recently submitted by the River Corridor Closure and Central Plateau contractors did not provide sufficient detail for approval.