

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 19, 2013

TO: S. A. Stokes, Acting Technical Director
FROM: D. Gutowski and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending July 19, 2013

Plutonium Finishing Plant (PFP). The contractor continues to investigate means to accelerate the safe demolition of the PFP facility. The site rep and personnel from the Richland Operations Office (RL) observed a demonstration of one means, filling gloveboxes with polyurethane foam. This is intended to immobilize the high levels of internal contamination when there is a need to size-reduce the boxes. The demonstration test was performed with a glovebox that was not contaminated and at a remote facility. The foam-forming materials were pumped under significant pressure into the glovebox using proprietary equipment. The contractor supervisor for the test said that they would likely continue the current practice of removing equipment and contamination from the PFP glovebox, to the extent practical, before adding the foam.

Various RL safety personnel raised questions before the test began but did not receive satisfactory answers. Questions raised included whether a hazard analysis has been performed, whether all void spaces will be filled, whether off-gas from the chemical reactions have a deleterious impact on downstream HEPA filters, and whether the foam will separate from the glovebox walls after being exposed to repeated cycles of heating and cooling. The test was generally successful but some void spaces were not filled and the glovebox was not instrumented so the peak temperature of the foam was unknown. In response to a subsequent question from the site rep, a senior RL manager said they would follow a Technology Readiness Level (TRL)-like process before using this process in the actual PFP facilities.

Sludge Treatment Project. The contractor formally submitted the Preliminary Documented Safety Analysis to RL for review and approval. They also plan to submit the Critical Decision (CD)-2/3 package for approval in the near future.

242-A Evaporator. Workers encountered radiation readings (primarily beta) on a jumper nozzle in the pump room that exceed the void limit for their Radiological Work Permit. The workers stopped the job and modified the Radiological Work Permit to include temporary shielding for the hot nozzle. After installing the shielding on the nozzle, the radiation levels were acceptable to continue work with the jumpers.

Tank Farms. The contractor is attempting to repair the leaking slurry pump in single-shell tank C-107 to continue retrieval. Troubleshooting efforts this week have not been successful.

The site reps met with L. D. Olson who replaced M. Johnson as the President and Project Manager for the Tank Operations Contractor.

Waste Treatment Plant (WTP). The site rep observed remediation of biologically-spread radioactive contamination at the High-Level Waste facility (see Activity Report 6/21/2013). The initial scope of work was performed well. This was the first instance of radiological work at WTP not related to radiography.

M. McCullough replaced F. Russo as Project Manager for the WTP contractor.