

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 10, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending January 10, 2020

Tank Farms: Contractor management held an ALARA review to gather facts related to the contamination leak from a glove bag that occurred during its removal following grab sample operations in tank AP-105 (see 1/3/2020 report). Participants noted that, in its operational configuration, there was no evidence of leakage from the glove bag; typically slack in the glove bag's plastic material is used to create a trough below the tape that attaches the glove bag to the riser top hat assembly. The trough collects any free liquids that accumulate during the sampling operation. This configuration ensures that liquid does not directly contact the taped attachment. Workers did not notice that a significant quantity of liquid had collected in the trough until the bag was being removed; during removal, the bag was lifted, which eliminated the trough as the plastic was pulled taut for horse tailing. The leakage occurred when the accumulated liquid came contact with the tape seal. Other factors that were discussed were the quantity and method of application for water that is used for decontamination during sampling operations, tank waste dripping from the reel and cable that is used to collect samples, time and environmental effects on the tape seals, and the lack of absorbents in the waste bag trough that could have mitigated the spill. The contractor is performing a mockup of the glove bag configuration and is evaluating several Problem Evaluation Requests to improve its grab sample process.

The Tank Farms Operations Contractor (TOC) is working to develop methods to reduce corrosion on the bottom of double shell tank (DST) secondary shells in order to ensure integrity and extend the life of the DSTs. One means to accomplish this goal is to reduce ground water intrusion in the area below the tank. Risers and wells, which are connected to the waffled basemat under the secondary shell through drain pipes, are currently under a slight vacuum which may draw moisture into the area around the tank bottom. A possible method of reducing this intrusion is through modification of the leak detection riser and well ventilation system. The TOC intends to test a prototype ventilation system that will place a slight positive pressure on the riser and well to reduce the intrusion rate. Contractor personnel conducted a process hazard analysis (PrHA) to inform their design of the prototype system. The conduct of the PrHA was formal and performed by a highly qualified team of appropriate subject matter experts.

Plutonium Finishing Plant: As of this week, only a fraction of the large volume of debris generated during the final day of demolition of the A Remote Mechanical line has been loaded into cans for shipment to the Environmental Restoration and Disposal Facility (see 12/20/19 report). Several factors have contributed to the delay, including a limited availability of empty cans in the demolition area, holiday personnel availability, and recent high wind events that prohibit work in the demolition area. Wind-related damage has also impaired radio repeater systems installed to provide clear communication during demolition operations; as a result the project does not expect to load or ship any material until next week, at the earliest. DOE-RL managers met this week with project personnel to discuss a path forward to improve the understanding of and adherence to controls for high hazard activities as the contractor prepares to retrieve the remaining Plutonium Reclamation Facility debris in the coming weeks.