DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 8, 2017

TO: S. A. Stokes, Technical Director
FROM: P. Fox and D. Gutowski, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending December 8, 2017

Tank Farms. The contractor discovered that a sampling location's in-tank tubing for double shell tank (DST) AY-102 is larger than the size identified in calculations used to define the minimum sample line purge times for tank head space gas sampling. The error results in a non-conservative purge time that could yield incorrect hydrogen gas concentration results for TSR required flammable gas monitoring surveillances. The contractor's subsequent extent of condition review identified two other DSTs with a similar condition and they are working to verify that there are no double contained receiver tanks with the same issue. Because of sample procedure method differences, this condition does not affect sampling of single shell tanks. After a review of the condition, the contractor Plant Review Committee (PRC) determined that error constitutes a PISA. The PRC directed implementation of increased purge times based on conservative assumptions as a compensatory measure pending their evaluation of the PISA.

The running exhaust fan for the evaporator building K1 confinement ventilation system unexpectedly tripped resulting in a loss of negative pressure in the contaminated areas of the facility. The K2 system which provides a positive pressure in non-contaminated operating spaces continued to operate preventing the potential for contamination migration into those spaces. The exhaust fan could not be restarted in the normal automatic mode and had to be started manually. The other K1 exhaust fan control system faulted in November and it is not available. Contractor troubleshooting efforts have not identified the cause of either problem.

Plutonium Finishing Plant (PFP). Workers performing surveys in a Radioactive Material Area discovered beta-gamma contamination levels of 1.5 million dpm/100 cm^2 in an area where an excavator shear that had been moved from 618-10 Burial Ground to PFP had been previously staged. It appears that contamination escaped the plastic wrap that was used as contamination containment during the transportation and storage of the shear. The contractor will perform a causal analysis to identify actions necessary to prevent similar future occurrences.

Waste Treatment Plant (WTP). The contractor reported that they have implemented the most recent revision of the preliminary criticality safety evaluation (see Activity Report 6/17/2016) in the High Level Waste Facility and the Pretreatment Facility PDSAs.

618-10 Burial Grounds. RL announced the completion of 618-10 burial ground waste cleanup activities. The contractor continues to work infrastructure removal, as well as fill, grading, and vegetation restoration work related to reestablishing a natural condition at the site.

PUREX Plant. DOE announced that they will use engineered grout to stabilize PUREX Storage Tunnel 2 (see Activity Report 7/7/2017). This is the same method used to stabilize PUREX Storage Tunnel 1and was selected based on a review of alternatives conducted by an independent panel of experts. They determined that this stabilization method provides maximum protection of workers and the public without precluding future options for disposition.