

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 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 15, 2017

D. Cleaves was on site providing Resident Inspector support.

Plutonium Finishing Plant. Demolition of the Plutonium Reclamation Facility (PRF) is nearly completed. The contractor succeeded in removing all of the canyon strongbacks and the overhead crane, leaving only portions of the east, south and west walls to be removed. A number of personal lapel monitors worn by workers outside of the airborne radioactivity area boundary have shown elevated readings over the past week and a half. Potentially impacted workers will undergo bioassay to determine if there was any uptake. Given the unexpected location of these readings, the contractor investigated possible sources. They discovered contamination along the southern and western borders of the demolition boundary and some contaminated equipment, but no definitive source that could have caused the lapel readings. The contractor has expanded the contamination boundary around the demolition zone and plans to complete demolition of PRF over the weekend. The stop work was resolved following the investigation and adjustments to the final demolition plans.

T-Plant. The contractor started their Readiness Assessment (RA) for receipt and storage of Sludge Transport and Storage Containers (STSCs) from K-West Basin. The RA included an emergency preparedness drill involving an explosive package being placed next to an STSC causing the container to topple and breach the lid seal. The project team also demonstrated the execution of procedures for the receipt, purging, and storage of STSCs. The purging evolutions were challenged by the failure of a pressure gauge. Facility personnel replaced the gauge and continued the evolution. The RA is expected to conclude next week.

Waste Treatment Plant. The contractor provided ORP with their documentation of the proposed resolution of Board issues related to pulse jet mixer (PJM) overblow and impact to vessels (see Activity Report 10/6/2017). They concluded, based on prototypic testing of PJMs in the Standard High Solids Vessel (SHSV) with settling solids, that the level and density measurement bubblers will adequately support control of PJMs while preventing overblows. The contractor considers that this testing confirms that PJM overblows are a very unlikely event. They also stated that their structural analyses of the proposed standard high solids vessel shows that PJM overblow events will not fail internal vessel components even after millions of PJM operating cycles.

The contractor completed the Process Hazard Analysis engineering study in support of the Low Activity Waste Documented Safety Analysis.

Tank Farms. The contractor authorized use of full face air purifying respirators rather than supplied air in the actively ventilated SY farm for specified work scope during non-waste disturbing activities (see Activity Report 3/17/2017).