DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 17, 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 17, 2020

DNFSB Staff Activity: M. Bradisse was on site to observe joint performance of a process hazard analysis by the Tank Farm Operations and Waste Treatment Plant (WTP) contractors. The hazard analysis focused on the interface between the Tank Farm waste feed delivery system and the WTP. It was performed to identify hazards that could be generated in one of the facilities, but affect the other. The analysis will ensure that the Tank Farm and WTP Low-Activity Waste Facility Documented Safety Analyses (DSA) contain necessary hazard controls to protect both facilities, the work force, and the public.

Building 324: Project personnel raised a question about the labeling of skids and hoses exterior to the building that supply hydraulic power, air, and water to the drill rig in room 18. Based on the configuration of the system, contractor radiological control personnel subsequently determined that the hoses and skids should have been posted as potentially contaminated, however no postings had been made. In addition, sub-contractor personnel had moved the hydraulic power unit (HPU) for the drill from its location at the facility to their offsite shop without appropriate radiological controls in place. Upon discovery of the condition, the contractor secured the shop. DOE, contractor, and Washington State personnel are in the process of completing radiological surveys at the sub-contractor's facility. While unlikely to contain contamination, the HPU will be moved back to building 324 and be handled as potentially contaminated while the project performs additional surveys. A critique has been scheduled.

Tank Farms: Tank Farm Operations contractor (TOC) determined that their current retrieval method is no longer effectively retrieving waste from single-shell tank (SST) AX-102. They are evaluating options for the next step in the retrieval process. Additionally, TOC personnel installed the first extended reach sluicing system into SST AX-104, which is the next tank scheduled for retrieval, and added caustic to the tank to shield the newly installed equipment from the high radiation fields within the tank. Caustic was used instead of water since it has the added benefits of potentially softening the waste in AX-104 prior to retrieval, and helping to maintain caustic conditions in the double-shell tank (DST) that receives the retrieved waste. Caustic conditions are necessary to help prevent corrosion of the DST primary tank shell.

A resident inspector observed a mockup of glove bag improvements and spill response actions that was performed to support an ALARA review that had been previously conducted for a glove bag leak (see 1/3/2020 and 1/10/2020 reports). Workers demonstrated installation and inspection of the glove bag, several work evolutions, and response to abnormal conditions. During the performance of the mockup, workers displayed good knowledge of the radiological work permit and work instructions, including appropriate response to off-normal conditions. Feedback from the mockup's participants was constructive and will be incorporated into the development of future glove bag designs, training, and work instructions. Some of the proposed improvements, such as the addition of plastic draping around the top hat, were standard practices in the past, but had not been formalized in glove bag design documents and had since been discontinued.