

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 4, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending October 4, 2019

Reduction Oxidation Facility (REDOX): While in surveillance and maintenance mode, the REDOX facility had experienced significant water infiltration, and worker entries avoided areas of pooled liquids due to potential radiological and chemical hazards. In 2017, DOE completed the installation of a new roof over the REDOX canyon (see 10/13/2017 report), but smaller leaks into the facility persist. Workers have recently begun making more frequent entries to perform characterization activities and remove some non-process related equipment and material. During an entry into a contamination area, two workers felt liquid drip on their heads. The individuals' heads were surveyed. Detecting no contamination, work for the day continued. The next day, a worker who had liquid drip onto their skin raised a concern to management; they convened a critique. At the critique, contractor personnel stated that the liquid was assumed to be water since it is common for pools of water to form following precipitation events. Assuming it was rainwater, workers controlled the liquid with pads, but did not follow procedures for a chemical or radioactive material spill. The critique revealed that the REDOX facility does not have a facility-specific spill response plan and that no chemical tests are performed on free liquids that are assumed to be from water infiltration. Contractor management expressed concern that this event is an example of normalization of deviance, and that all spills needed to be isolated and characterized using spill response procedures, preferably under a facility-specific spill response plan. Following the critique, management stopped all non-regulatory activities in REDOX until they determine how to better address radiological and chemical hazards in the facility.

Tank Side Cesium Removal (TSCR): ORP rejected a recently submitted Preliminary Document Safety Analysis (PDSA) for the TSCR system and spent ion-exchange storage pad (see 10/5/2018 report). The notification indicated that the PDSA did not fully satisfy the requirements established in DOE Standard 1189-2008. ORP noted that the Tank Farms Operations Contractor (TOC) needed to provide an approved process hazard analysis to support the PDSA, and that the PDSA did not adequately evaluate the performance of safety structures, systems, and components to show that they would be able to perform their safety function. ORP also stated that some design documents were still in development or were not provided in time to support their review. ORP requested that the TOC develop a recovery plan to address the issues, complete the necessary evaluations, and revise and resubmit the PDSA for approval.

Liquid Effluent Retention Facility (LERF): The TOC notified ORP that they will need additional time to complete their unreviewed safety question determination (USQD) that evaluates the potential inadequacy of the documented safety analysis that originated when sludge material was found in LERF Basin 44 (see 7/19/2019 report). To resolve the USQD, the contractor is developing a new hazard categorization document using methods contained in DOE Standard 1027-92. The notification indicated that they will complete the work in March 2020. Compensatory measures remain in place to prevent uncovering the sludge or transfer of the sludge to another LERF basin.