DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 2, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending July 2, 2021

Hanford Site: Site operations were disrupted this week by record-breaking high temperatures. Impacts included reduced outdoor operations, temporary closure of the site's primary health clinic, modified work schedules and increased telework, cases of heat exhaustion, out-of-service decontamination facilities due to high water temperature, and reduced 222-S laboratory functions because of cooling system malfunctions.. As of this report, most of the impacts to site infrastructure, including the 222-S laboratory have been addressed. However modified work schedules to mitigate heat stress will most likely continue through the summer for many projects.

Tank Side Cesium Removal (TSCR) System: Tank Farms Operations Contractor (TOC) nuclear safety personnel completed their evaluation of a potential inadequacy of the safety analysis that stemmed from the discovery that the TSCR project did not hold necessary documentation for certain welds associated with the safety-significant system process enclosure (see 6/18/2021 report). After reviewing the results of the evaluation, the TOC Plant Review Committee (PRC) determined that the conditions represent a positive unreviewed safety question since they could increase the probability for a malfunction of equipment important to safety that was previously evaluate in the existing safety analysis. Based on their determination, the PRC decided to retain the existing compensatory measure which precludes placement of the TSCR System into operating mode. The measure will remain in place until repairs and required safety basis changes are completed, and DOE approves its removal.

Liquid Effluent Retention Facility (LERF): Two workers who were working in basin 44 were found to have contamination; one on the bottom of their shoe, and one on the skin of their wrist. The individual with skin contamination was successfully decontaminated. These events occurred with a different set of personal protective equipment (PPE) than the event that occurred last week (See 6/25/21 report). The PPE modification was initiated to reduce heat stress that results from wearing two sets of PPE and included a change to a single set of semi-permeable coveralls with an outer set of waterproof bibs, arm sleeves, and muck boots. During an in-progress ALARA review, workers noted that heat stress caused PPE sweat through, which can wick contamination, and that the new muck boots seemed to wear in an unexpected way, either due to the high temperatures or nature of the work. TOC personnel continue to explore alternate schedules to maximize work under cooler conditions and intend to return to a fully impermeable coverall set to reduce the risk of sweat through. They will also review the adequacy of the muck boots.

Test Bed Initiative Low-Level Offsite Disposal Project (TBI): DOE announced that they are performing an environmental assessment to support initiation of the next phase of the TBI. This phase would involve treatment of 2,000 gallons of low-level tank waste, which would be subsequently grouted, and then shipped to an out-of-state waste disposal site. DOE further stated that, should the project prove successful, DOE may at some point decide to proceed with full-scale implementation of the technology. DOE also emphasized that the project is intended to supplement, not supplant, the vitrification of waste at the Low Activity Waste Facility, and indicated that they are committed to working collaboratively with states, tribal nations, and local communities to move this effort forward.