DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 18, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending June 18, 2021

Tank Farms: The Tank Farm Operations Contractor (TOC) Plant Review Committee (PRC) met to evaluate an unreviewed safety question determination for a potential inadequacy of the safety analysis related to safety significant valves that are used to isolate systems to prevent tank waste misroutes, spills, and spray leaks (see 6/4/21 report). The PRC concurred with the positive determination which noted that the condition identifies a new equipment failure mode, increases the probability of a malfunction of a component that is important to safety, and reduces the existing margin of safety for tank farm operations. The TOC intends to remove insulating material from the affected valves but must revise freeze protection calculations and modify the Documented Safety Analysis (DSA) to support that action. The existing compensatory measure that precludes the use of the affected valves for double valve isolation will remain in place until DOE approves the necessary equipment and DSA changes and authorizes its clearance.

The TOC Joint Review Group (JRG) met to evaluate work instructions for tying in a new exhauster duct into the SY tank farm ventilation ductwork. This is a complex, higher hazard work activity with multiple phases. Specifically, the activity will require cutting, grinding, and welding of potentially contaminated equipment, and require access to confined spaces. The participants were well-prepared and had previously performed mockups that benefitted development of the work instructions. The JRG voted to approve the package with comments.

Tank Side Cesium Removal (TSCR) System: During the development of a safety basis compliance matrix for the upcoming TSCR system readiness assessment, TOC personnel determined that documentation was missing for four welds that are part of the process enclosure structure that has an assigned safety function for mitigating spray leaks. Two of the welds ensure that heavy components (the treated waste delay tank and the process filters) will not tip and damage the enclosure during a seismic event, and one ensures that a shroud that covers a process enclosure sample port remains in place. The safety function need for the fourth weld was found to be a documentation error. These welds are noted in safety basis documentation. Consequently, after review, the TOC PRC determined that the conditions represent a potential inadequacy in the safety analysis. To compensate for the condition, the PRC determined that the TSCR system should not be placed in operations mode.

TOC personnel participated in an emergency preparedness drill at the Tank Side Cesium Removal (TSCR) facility. The resident inspectors noted that the drill relied heavily on simulations that limited evaluation of the response team. The next TSCR drill will be evaluated as part of the TOC's readiness assessment of TSCR prior to startup of the system.

Waste Treatment Plant: An external assessment team completed an Integrated Safety Management System (ISMS) assessment (see 6/11/2021 report). The team determined that ISMS is well integrated into plant activities and supports safe performance of work activities. The team provided WTP management with a substantial list of noteworthy practices, issues, and opportunities for improvement that can be used to guide ongoing efforts to prepare the Low Activity Waste Facility for operation. The team will deliver its final report in mid-July.