

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 20, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending August 20, 2021

Tank Side Cesium Recovery System (TSCR): The DOE Safety Basis Approval Authority approved an amendment to the Tank Farm Documented Safety Analysis. The amendment resolves the positive unreviewed safety question determination that addresses missing information associated with TSCR structure safety significant welds (see 7/23/2021 report). It also clarifies several access controls and modified the current approach for tracking cesium loading in the ion exchange columns. Cesium loading is an initial condition for the consequence calculation associated with hydrogen explosion events. Under the change, the initial condition is protected by a safety program key element instead of a specific administrative control and relies on a non-safety significant tank level indicator and known properties of the waste being fed to TSCR. Tank Farm Contractor (TOC) management subsequently certified implementation of this change and the previously approved changes that incorporate TSCR system operations into overall operation of the Tank Farms (see 2/5/2021 report).

Resident inspectors observed a work team perform a dry run of the procedure that will be used to remove spent ion exchange canisters from the TSCR process enclosure and then deliver the canisters to the spent canister storage pad. Although waste has not been introduced to the system, the dry run required the use of necessary radiological controls. The work team's initial attempt to accomplish the procedure was interrupted by a need to clarify aspects of the procedure and obtain specialty tools for the work. The contractor paused the event, resolved the problems, and successfully reperformed the dry run the next day. DOE and TOC personnel also observed the evolution, and a camera was set up to help record parts of the evolution that are difficult to observe in the field. Overall, the event was an effective training opportunity; it also provided an excellent opportunity to identify and resolve potential procedure and work execution issues.

TOC management declared that, with a few minor exceptions, the TSCR system is ready for operation. The contractor readiness assessment will start on August 23.

Central Waste Complex: The resident inspectors observed an evaluated field exercise that facility management is using to satisfy their annual evaluated exercise requirement. The scenario simulated the triggering of an explosive device that damaged a waste container. The scenario also included a contaminated, severely injured, person needing transportation by ambulance and a second contaminated individual. Because of COVID transmission concerns, the Hanford Fire Department and Hanford Patrol substantially reduced their participation in the exercise. The change in participation required several new simulations that reduced the effectiveness of the exercise.

Waste Treatment Plant (WTP): While performing a walkdown of the Effluent Management Facility with TOC personnel, the facility manager discovered three out of four facility-to-tank farm transfer line isolation valves in the open vice closed position. The valves had been previously closed and were under administrative lock with locking wires installed. The locking wires for the valves were still present but broken. Contractor management is performing an investigation to determine the facts associated with the event.