DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 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 October 15, 2021

Tank Side Cesium Recovery (TSCR) System: A DOE team completed their readiness assessment of the Tank Operations Contractor for the TSCR system operation (see 10/1/2021 report). The team declared the contractor has demonstrated readiness of equipment, procedures, and personnel subject to the resolution of three pre-start findings and closure of remaining items on their list of manageable items. They also determined that ORP is ready to perform oversight of TSCR system operations. The first pre-start finding is that the TSCR process enclosure lacks adequate radiological controls and infrastructure for all-weather access and egress. The second is that abnormal and emergency conditions have not been evaluated specifically to TSCR. The last is that effective controls have not been developed and implemented to ensure leak-tightness of Chemjoint™ and HART Union connections. This last finding is related to galling observed on a threaded connector during the change-out demonstration of an ion exchange column (see 10/9/2021 report). Galling is a form of frictional wear between two metal surfaces that can result in damaged threads and potentially compromised connections. The DOE team believes the first two pre-start findings will be relatively straightforward to address. They consider to the third finding to be a significant issue, with potential for design changes and/or schedule delays.

DNFSB Staff Activity: Members of the staff met with DOE and Tank Farms Operations Contractor (TOC) representatives to discuss a safety control that is used to ensure TSCR System ion exchange column cesium loading remains below specified limits. The control protects assumptions used to determine radiological consequences that result from certain design basis analyses. Contrary to current DOE guidance, the control is implemented as a key element of a safety program rather than using a specific administrative control. The purpose of the discussion was to understand the existing implementation and whether limitations associated with DOE's use of a key element in this case adversely affect safety. The staff is using information from the meeting to support further review.

Central Plateau Risk Management (CPRM): A contractor Hazard Review Board (HRB) met to evaluate a work package that workers will use to mitigate unidentified liquids discovered during entries into the PUREX canyon facility. PUREX is a deactivated facility that is prone to ingress of water that can entrain and migrate contamination in the facility. This is like the problem that contractor personnel previously identified at the REDOX facility (see 10/14/2019 report). This work instruction will help implement radiological controls in routinely accessed areas while CPRM performs risk reduction work. The HRB decided to not vote on the package due to outstanding technical questions about performing surveys of unidentified liquid. They will re-evaluate the package when the questions are resolved.

Transportation Safety: Contractor and DOE personnel met to discuss options for moving several high material-at-risk transuranic waste containers from a Plutonium Finishing Plant storage pad to the Central Waste Complex for long term storage. Due to the compensatory measures which are in place because of a positive Unreviewed Safety Question associated with the site's Transportation Safety Document, material exceeding Hazard Category 3 thresholds would require a special approval (see 2/12/2021 report). The contractor tentatively aims to transfer the containers in mid-FY22.