DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 19, 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 November 19, 2021

Tank Side Cesium Recovery (TSCR) System: Following the identification of damaged threads on an ion exchange column (IXC) connection during a readiness assessment demonstration (see 10/8/2021 and 10/15/2021 reports), engineers performed inspections of all TSCR system connections that utilize ChemJoints™ and HART Unions. They determined that thirteen of 71 connections had notable roughness necessitating further investigation/corrective actions. All connections with notable roughness were male fittings with exposed threads. Corrective actions include restoring damaged threads using standard industrial practices, proof testing repaired connections to ensure leak tightness and protecting all threaded connectors with caps or plugs during storage, handling, and transport. Additionally, work procedures will be modified to ensure the caps or plugs remain in place during evolutions where damage from external contact is possible. Appropriate individuals will receive training related to protection and operation of the connections, and the procedure changes. The required repairs and other corrective actions can be completed without impact to the planned start of TSCR system operation. During a discussion with the resident inspectors, the contractor representatives noted that the connections do not fulfill a safety significant function. Therefore, leaks are considered a minor concern. However, the resident inspectors noted that a spray leak inside the TSCR system enclosure would make it difficult to safely and efficiently use the enclosure to support the continuing mission. The resident inspectors also note that the contractor has chosen to use qualitative methods to ensure sound connections although quantitative methods are available.

Waste Encapsulation and Storage Facility (WESF): A resident inspector attended a Senior Review Board (SRB) meeting which was held to consider the Basis for Approval for the Evaluation of the Safety of the Situation (ESS) that the contractor developed to address a Potential Inadequacy in the Safety Analysis (PISA) associated with the G Cell Fire Analysis at WESF (see 9/17/2021 and 9/24/2021 reports). The SRB also evaluated a related Justification for Continued Operations (JCO) that is proposed to support operations until the Documented Safety Analysis (DSA) is modified to reflect the revised accident scenario. A new bounding analysis for flame impingement on G Cell canisters showed that the mitigated risk from the accident was in line with other WESF accident scenarios and that the existing controls are adequate to control the hazard. The SRB concluded that the ESS adequately addressed the PISA and the proposed JCO provides adequate guidance to support operations pending modification of the DSA.

PUREX: Central Plateau Risk Mitigation (CPRM) have been preparing the 211A facility, a non-radiological building adjacent to the PUREX canyon, for demolition prior to radiological risk reduction work in the canyon facility. During the work, an individual was sprayed with a liquid suspected to be a sodium hydroxide and water mixture when they inadvertently opened a process line. A subsequent entry was made to determine the liquid's pH, however the newly approved PUREX spill mitigation procedure (see 11/5/2021 report) was not used to support the entry. Contractor management did not hold a critique per their abnormal event investigation procedure. Instead, they held an informal fact-finding meeting. As a result of the event, contractor personnel stopped work for entries into contaminated areas and work involving chemical lines.