

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 11, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending November 11, 2022

Canister Storage Building (CSB): Facility management held a plant review committee (PRC) meeting to make an unreviewed safety question (USQ) determination of the recent potential inadequacy of the safety analysis concerning the exclusion of uranium hydride (UH₃) particulate as a constituent of the material at risk (MAR) in multi-canister overpacks (see 11/7/2022 report). Preliminary estimates suggest the MAR and the associated radiological dose consequences from a bounding accident would be increased by approximately 25 percent if UH₃ were included. This increase would not result in a change to the existing control selection. The PRC voted to approve a positive USQ determination and directed the nuclear safety organization to begin the development of the formal evaluation of the safety of the situation. This will include a formal analysis to address whether UH₃ should indeed be included in the MAR, and what the appropriate quantity of additional UH₃ should be.

Liquid Effluent Retention Facility (LERF): The contractor's operational readiness review (ORR) began this week (see 11/4/2022 report). The objectives of the review include verification that equipment important to safety requirements have been properly maintained; that personnel possess the experience, knowledge, skills, and abilities required to operate the facility safely; and that programs and processes needed for safe operations are defined, documented, and validated. A resident inspector observed many aspects of the ORR including the contractor review team in-brief, a facility walk-down of LERF, an emergency preparedness field exercise, a demonstration of the waste acceptance process, interviews of facility personnel, and daily review team briefs to the facility. The resident inspector notes the contractor review team has been rigorous in their review, and project personnel have been responsive in accommodating the review team by providing access to personnel and requested information.

Waste Treatment Plant High Level Waste (HLW) Facility: Design of HLW has recently resumed following workshops in August to discuss waste processing strategies that could inform the facility's design and control strategy. As a result of the workshops, the WTP contractor and DOE created the HLW Firm the Foundation Team (HFFT). This team will use lessons learned from the Low Activity Waste facility to coordinate the various efforts required to complete the HLW design, rather than direct a redesign effort. The resident inspectors met with HFFT personnel to discuss the status and objectives of that effort. The HFFT is moving the project away from the previous design-build approach to developing a request for proposal for design completion, followed by construction and commissioning. The resident inspectors noted that while the HFFT does not anticipate major changes to the HLW facility process or hazard control strategy, changes to the code of record proposed by the HFFT may drive significant engineering efforts to backfit existing equipment to newer standards. While this effort is still ongoing, HFFT personnel noted the intention was to provide concrete decisions to HLW designers on code applicability rather than ambiguous guidance. The resident inspectors also noted potential for significant impacts to the chemical safety controls.