DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 31, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending May 31, 2024

242-A Evaporator: During the performance of a software update to the evaporator main control system (MCS), two flush valves opened without operator input, introducing approximately 9000 gallons of water to double shell tank AW-102 before being closed. The condition was not noticed in the evaporator or the tank farms control rooms at the time of the event. The level increase was identified a week later by an engineer reviewing tank level history during unrelated work. Due to the timing of the event, WRPS believes the valve actuations were triggered by the MCS software update. WRPS management issued a timely order directing operators to verify key valve positions following software changes and is investigating the event.

Conduct of Operations: A resident inspector observed a corrective action review board (CARB) meeting held to evaluate effectiveness review results for corrective actions implemented following a spray of sodium hydroxide on two workers and as the result of a broader conduct of operations extent of condition review directed by the DOE field office in 2022 (see 11/19/21 report). The effectiveness review of the spray event indicated that corrective actions in 2022 were only partially effective. However, corrective actions taken to address the DOE-directed review, such as more rigorous hazard review board screening of work packages and the CPCCo "Back to Basics" safety culture plan, coincided with a measurable decline in reported events. Interviews with contractor personnel also noted a positive impression of changes resulting from the actions. Additionally, the attendees noted that significant management changes within the organization, separate from the corrective action plan, drove positive cultural changes during the period when performance improvements were identified. As a result, the CARB agreed that the two sets of corrective actions, together, were effective in improving work force performance.

Waste Encapsulation and Storage Facility (WESF): A DOE Senior Review Board (SRB) recommended approval of documented safety analysis (DSA) and technical safety requirement (TSR) revisions, which were recently proposed by CPCCo, for the WESF. CPCCo used DOE STD 3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, as the safe harbor for the revision, which analyzes operations and equipment that CPCCo will use to handle the cesium and strontium capsules currently stored in WESF pools, package them in a cask storage system (CSS), and transfer them to the Cask Storage Area for interim dry storage. Hazard controls implemented by the revised TSR document focus primarily on proper handling of the capsules and CSS, and on deliberate loading, assembly, and movement of the CSS.

Capsule Storage Area (CSA): The same DOE SRB, noted above, recommended approval of a DSA and TSR for the new CSA. As with the WESF DSA revision, CPCCo used DOE STD 3009-2014 as the safe harbor for their development of the CSA DSA. The DSA and TSRs were written to support capsule storage for an initial period of 40 years, with the potential for extension up to 300 years. The safety basis relies mostly on passive design features supported by a small set of specific administrative controls and relevant periodic surveillance tasks.