

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 13, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending October 13, 2023

Tank Farms: The Advanced Modular Pretreatment System (AMPS) will eventually be part of the larger tank farm system and the relevant AMPS safety analysis information will be integrated into the Tank Farm Documented Safety Analysis (DSA). One difficulty in completing the integration is that the AMPS safety analysis will be developed consistent with DOE STD 3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, which is the most current version of the standard, while the Tank Farm DSA was developed under the older 1994 version of the standard. The approaches defined in the two versions of the standard are not fully compatible. To resolve this problem, WRPS, in consultation with DOE, has proposed updating the Tank Farm DSA so that it is compliant with the most recent standard. This work would be done in parallel with the design of AMPS and the development of its safety analysis. WRPS estimates that the effort will take approximately four years. Operation of the Tank Farms would continue under the existing version of the DSA until the new DOE STD 3009-2014 compliant DSA, which would include required AMPS information, is implemented. The implementation would be timed to support startup of the AMPS.

242-A Evaporator: After evaluating questions raised by the DOE Senior Review Board during its review of an amendment to the 242-A Evaporator DSA (see 9/15/2023 report), facility management determined that two safety-significant valves, which are installed in the evaporator dump path, had not been evaluated to determine compliance with a specific administrative control (SAC) designed to protect workers from flammable gas deflagrations, resulting in a technical safety requirement (TSR) violation. A subsequent evaluation determined one of the valves was compliant with the SAC, while the other was not. The non-compliant valve will be modified to resolve the problem. As a compensatory measure, work inside the evaporator pump room is prohibited and manned work activities involving the valve in question are also prohibited until TSR compliance is restored.

Central Waste Complex: The contractor declared a Potential Inadequacy in the Safety Analysis based on new information that emerged during last week's discussions with the DOE Chief of Nuclear Safety's technical team (see 10/6/2023 report). The current safety basis assumes that fires resulting from a vehicle crash and subsequent fuel spill would be limited to a single zone of waste containers. The new information suggests a fire could impact a second zone if the pool spill occurs in the aisleway between adjacent zones, resulting in a higher consequence than what is currently analyzed in the DSA. Compensatory measures put in place include limitations on vehicle fuel volumes and certain waste operations in the impacted buildings.

Waste Encapsulation and Storage Facility: The contractor Plant Review Committee met this week to discuss the new information related to potential reactive decay products in the strontium and cesium capsules (see 10/6/2023 report). They confirmed that a positive unreviewed safety question exists because the selected airborne release fraction/respirable fraction could be affected, potentially causing an increase in accident dose consequences.