

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 20, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: M. Bradisse, B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending November 20, 2020

DNFSB Staff Activity: Members of the technical staff met with RL and Plateau Remediation Contract personnel for initial discussions that support a technical staff review of the approach used by DOE to control hazards at the Central Waste Complex.

Waste Treatment and Immobilization Plant (WTP): An external team conducted a Project Peer Review (PPR) of the WTP project. One purpose of this type of review is to determine the validity of the underlying technical assumptions and related management approaches. Topics reviewed by the technical subcommittee included startup, commissioning, plant engineering, environmental, nuclear safety, mission integration, and chemical safety. During the out-brief, the PPR team recommended that ORP consult with EM Technical Authority prior to approving any categorical exclusions which are used within the unreviewed safety question process to help manage chemical safety hazards. Chemical safety hazards are primarily controlled under a Chemical Safety Management Program (CSMP) and the related management of change process.

The resident inspectors observed parts of a post installation pneumatic pressure test of a waste transfer line that runs between the WTP Effluent Management Facility and the Liquid Effluent Retention Facility. The test is noteworthy because responsibility for the transfer line is split between the WTP and Tank Farm contractors. The two contractors coordinated their efforts to fulfill test requirements for the entire 700 foot line with the single test. Observation of the WTP activities determined that the test team was well prepared, hazard controls were properly established, and that conduct of the test was controlled and professional.

The resident inspectors met with DOE and WTP contract personnel to discuss ongoing work to develop the strategy that DOE will use to control hazards in the High Level Waste (HLW) Facility during a volcanic ash-fall event. During the discussion, DOE and the contractor identified the options that were developed and their preferred option, as well as the work that they are performing to determine the viability of that option. There are two concerns associated with a volcanic ash-fall event: structural loading, and the impact of ash on systems necessary to maintain safe conditions in the facility. The contractor has determined that the design ash-fall event will not challenge the HLW facility structure. Consequently, their preferred strategy focuses on placing the facility in a passive safe shutdown condition if an ash-fall event occurs. The strategy includes specific controls for preventing the accumulation of hydrogen within HLW facility process vessels.

Aging Structures Stabilization: Project personnel have made significant progress toward resolution of problems associated with the stabilization of the three underground structures that have been identified as potential collapse risks (see 11/13/2020 report). A new pad was constructed which will allow grout delivery closer to the Z-361 tank. This will reduce the chances of conveyance line plugging while stabilizing that tank. In addition, the project has begun placing grout inside of the Z-9 crib.