

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 21, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending June 21, 2019

Radiochemical Processing Laboratory: A severe water hammer event in the facility fire main caused the failure of two pressure relief valves and damage to several pressure gages in the safety significant system. The subsequent water flow triggered a fire alarm and a building evacuation; Hanford Fire Department (HFD) responded. After HFD cleared the building, facility personnel placed the affected risers out of service and entered the appropriate LCO condition. Maintenance personnel subsequently repaired the damage and the affected risers are now back in service. Contractor management held a fact-finding meeting and determined that HFD and PNNL personnel were conducting flushes simultaneously at two fire hydrants when the event occurred and that the flushing resulted in a start of both the electric and diesel backup pumps. Based on the information, they determined that there is a need to improve communication and coordination related to fire main flushing activities. The resident inspector notes that, although the fact-finding meeting yielded valuable information, the information obtained was not adequate to determine if the backup fire pumps and their control systems performed as expected, or if other specific controls are necessary to prevent similar occurrences in the future.

Waste Treatment Plant (WTP): The WTP Project Director formally notified ORP that the contractor has completed actions necessary to support a decision by ORP regarding the conditional release of engineering, procurement, and construction work scope for the Pretreatment Facility. Among the actions documented were ORP's agreement to the resolution of eight major technical issues, and the resolution of DNFSB issues associated with the spray leak methodology, aerosol entrainment coefficient, pulse jet mixer (PJM) control including PJM overblows, PJM impingement wear, pipeline wear including sliding bed wear, pipeline plugging, and pump explosions. The actions also included the development of a draft completion plan that, among other things, provides the contractor's strategy for completing necessary work to develop the facility safety basis. If ORP agrees and decides to release the work scope, work on the Pretreatment Facility could resume, consistent with ORP priorities and available funding.

Building 324: During drilling activities in room 18, workers paused work and exited after encountering elevated dose readings. During doffing, contamination was detected on the bottom of a worker's boots and the step-off pad inside the room 18 airlock. No void limits were exceeded during drilling and workers safely exited. A resident inspector observed an in-progress ALARA review of the contamination spread inside of the room 18 airlock. Project personnel are working on improvements to the work package and doffing area prior to restart of drilling.

Plutonium Finishing Plant: Contractor and federal personnel briefed the Washington State Department of Ecology (Ecology), Department of Health, Environmental Protection Agency (EPA), and Hanford Atomic Metal Trades Council on the project's readiness to transition to high hazard demolition activities. High hazard activities cannot begin until Ecology and EPA agree to lift the stop work invoked in the January 9, 2018 letter: Creation of Danger Pursuant to Article XXXII Hanford Federal Facility Agreement and Consent Order (see 1/19/2018 report).