

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 21, 2020

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** B. Caleca and P. Fox, Hanford Resident Inspectors  
**SUBJECT:** Hanford Activity Report for the Week Ending February 21, 2020

**DNFSB Staff Activity:** D. Brown was on site for training and performance of routine site surveillance activities. Members of the staff held a teleconference with Waste Treatment Plant (WTP) and DOE-ORP subject matter experts (SMEs) to discuss assumptions that support the WTP Low Activity Waste (LAW) Facility hazard categorization.

**Tank Farms:** Tank Farms Operations Contractor (TOC) personnel held a Process Hazards Analysis (PrHA) to inform the preliminary design of an AP Tank Farm truck loading station. The loading station is needed at the AP-106 double-shell tank to support the use of tanker trucks to remove or add Low Activity Waste (LAW) facility feed waste to support future mission work. Due to the nature of LAW feed waste, the primary hazards are chemical exposure and hydrogen generation. The participants were knowledgeable and engaged.

**Tank Side Cesium Removal (TSCR) Project:** The contractor is moving ahead with plans to change their strategy for controlling flammable gas hazards in expended ion exchange (IX) columns. Their previous strategy mitigated the hazard by restricting access to the spent IX column storage pad during periods when weather might reduce or stop the natural ventilation flow that is expected to remove flammable gases from the spent IX media. The revised strategy will credit the ion exchange columns as an engineered control to contain hydrogen detonations.

**105-KW Basin:** The Safety Basis Approval Authority approved the annual update of the 105KW Facility Documented Safety Analysis (DSA). The DSA: (1) acknowledges the recent removal of spent fuel sludge, which is now stored in T-Plant, from the 105-KW Basin, (2) the planned installation and operation of the garnet filter media removal system, and (3) the installation of vertical pipe casings that the contractor will use in the future to collect and immobilize the remaining basin debris prior to its removal from the area. The contractor expects to retrieve and ship garnet filter media to T Plant this year.

**Direct Feed LAW:** SMEs from the TOC and WTP Contractor met to select controls for hazards that exist at the interface between the Tank Farms and the WTP. Identified hazards result primarily from waste misroutes that might occur while TOC personnel are working in tank pits that have a direct connection to the WTP facilities. The attendees decided that the hazard should be prevented through the use of a specific administrative control that prevents the operation of relevant pumps while workers are conducting maintenance in the designated tank pits.

**Plutonium Finishing Plant:** A DNFSB Hanford Site Cognizant Engineer observed Plutonium Reclamation Facility debris retrieval, packaging, weigh station, and final load-out operations. He noted informal two-way radio communications that appeared to be referencing steps in the work instruction, and that the uncalibrated scale used at the weigh station is near its top weigh limit which may affect the accuracy of its measurements. His observations were provided to the DOE-RL facility representative.