DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 14, 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 August 14, 2020

DNFSB Staff Activity: The resident inspectors met with DOE and contractor nuclear safety personnel to discuss the status and communication of BNI actions to resolve a 2011 Board issue related to protection of workers from ammonia hazards at the Waste Treatment Plant.

Pacific Northwest National Laboratory Radiochemical Processing Laboratory: While preparing pre-staged radioactive waste for disposal, an individual who was handling a package to check its contents noted that the interior bag of the double bagged package was disintegrated and that the outer bag was also in poor condition. The individual checked their hands using a nearby instrument. Upon finding high levels of alpha contamination on both hands they requested Radiation Protection Technician (RPT) assistance. Responding RPTs isolated the laboratory room and were able to successfully decontaminate the individual. Although contamination levels found during initial surveys were relatively high, the continuous air monitor located within the room did not alarm and nasal smears for the individual did not identify any contamination. The individual will submit a bioassay to confirm that no internal exposure resulted from the event. A follow-up critique held by management personnel identified potential issues related to the accumulation and management of waste within the facility, and guidelines for the use of protective gloves during waste handling. The laboratory room remains isolated pending a detailed survey. Corrective actions are expected to include an extent of condition walk-down to identify other accumulations of waste that may need to be addressed. The resident inspector notes that this event is similar to another recent event (see 5/15/2020 report). The causal analysis and related corrective action identification for that event are still in progress.

Waste Treatment Plant: During a startup to support testing, test personnel unintentionally over-pressurized a portion of the system that supplies fuel oil to the high pressure steam system boilers. Troubleshooting determined that an out-of-position recirculation valve was the direct cause of the high pressure. At a subsequent fact finding discussion, involved individuals identified a number of errors related to handover of systems from testing to operations, control of system status, equipment operation, performance of testing, and communication between test and operations personnel. Additionally, the event and its subsequent review uncovered a potential flaw in the design of the overpressure protection for the system. Management is reviewing the results of the fact finding meeting to identify lessons learned and corrective actions. Engineering personnel will evaluate the affected portion of the system before it is placed back in service.

Building 324: The contractor convened a Hazard Review Board (HRB) to review plans to perform investigative surveys of the gallery areas of Building 324. These areas have been restricted following the discovery of high levels of removable contamination that voided the radiological work permit of a radiological control technician performing routine surveys (see 7/3/2020 report). Work planners intend to use controls suited for high contamination and airborne radioactivity areas during the surveys. The HRB withheld approval of the work package pending further review of responses to abnormal conditions during the activity.