

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 8, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending July 8, 2022

222-S Laboratory: A worker alarmed a personnel contamination monitor after exiting a contamination area in the lab and doffing their personal protective clothing (PPE). A subsequent radiological survey found contamination on their face mask and modesty clothing as well as on unprotected areas of their head and arm. The resident inspectors observed an in-progress ALARA review to collect facts related to the event and to determine if current contamination control methods require adjustment. Working under a hood, the worker had bagged a PVC tube containing mixed waste. Waste receiving personnel noted an end cap was not secured per procedure and returned the bag for corrective action. Subsequently the worker re-opened the bag, secured the end cap, and re-bagged the pipe. The review focused on the necessity of re-opening the bag versus using a suitable overpack. Additionally, the review identified cross-contamination occurring during the PPE doffing process was the likely source of the contamination found on multiple locations of the worker's clothing and skin.

Liquid Effluent Retention Facility (LERF): The contractor's plant review committee met to evaluate changes to the draft Documented Safety Analysis (DSA) for the LERF. The draft DSA supports upgrade of the facility from a radiological facility to a Hazard Category 3 facility (see 4/8/2022 report). The proposed changes address comments received after a DOE headquarters review of the draft DSA and increase the rigor of the control protecting the hazard categorization of the facility. The PRC members held a detailed discussion of the changes, which focused primarily on implementation of the control. The discussion resulted in several proposed changes that will improve implementation of the control and provide clarity for operators in their use of the technical safety requirement. The PRC voted to recommend approval of the proposed changes subject to resolution of their comments.

Pacific Northwest National Laboratory, Radiochemical Processing Laboratory (RPL): After identifying a leak in a safety significant fire suppression pipe, facility personnel isolated the affected fire water riser to stop the leak and repair the system. As part of their extent of condition review, a sample of sludge from the piping section was sent to a third-party testing laboratory for analysis. The laboratory determined the sample contained high levels of bacteria that can cause iron-related microbiologically induced corrosion (MIC); considering other factors, this resulted in a medium rating for the overall MIC bacteria contamination. This type of bacteria can accelerate pitting and crevice corrosion in steel and iron piping systems such as this system, which is constructed from black steel pipe and is 52-years old. This type of bacteria can develop localized colonies in locations with favorable conditions and may exist in other areas of the system. The contractor is identifying a plan to address the MIC contamination; the failed portion of the fire suppression system was replaced, and the system was declared operable.

Waste Treatment Plant: Low-Activity Waste Facility personnel held a fact-finding meeting to determine potential causes for a release of silica, which occurred while transferring the glass forming media into the facility. The attendees were unable to identify a cause for the release, but the discussion did provide information that will assist in ongoing troubleshooting activities.