

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 16, 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 September 16, 2022

Radiochemical Processing Laboratory (RPL), Pacific Northwest National Laboratory: A resident inspector observed a contractor team perform a readiness assessment (RA) for the Safeguards Limits Project (see 05/13/22 report). The project added secure storage of materials to the facility, which allows operational flexibility. While this does not change the overall material-at-risk for the facility, the modifications create new criticality and hydrogen deflagration hazards, which could harm workers. As a result, the project added a new safety significant hydrogen displacement system (HDS) and specific administrative controls to the facility's documented safety analysis and technical safety requirements (TSR) to eliminate the hazards. The resident inspector observed interviews of facility personnel, the transfer of a SAVY-4000[®] container into a floor storage container, and a walkthrough of the weekly surveillance which workers perform on the HDS. An additional staff member also remotely observed several of the RA team's interviews with RPL personnel. During their review, the RA team noted instances where assumptions in technical documents and procedures supporting TSR controls could lead to potential inadequacies of the safety analysis or TSR violations if not clarified. The RA team also noted areas where RPL staff could improve other procedures and conduct of operations. Finally, they identified a need for additional valves for backup air isolation. Overall, the team determined that clear, easily implemented paths exist to resolve the observed issues and RPL is ready to start related operations once its findings are addressed.

Waste Encapsulation and Storage Facility: Subcontractor personnel removed a plate covering one of the core-drilled holes penetrating the wall between the canyon and the manipulator repair shop. This penetration contained residual water from previous work, which leaked out as the plate was removed, and dripped onto the workers face and into their mouth. Oral smears and a whole-body count conducted on the worker showed no contamination had been ingested. A resident inspector attended the critique held to determine the facts related to the event. Prior to the exposure, workers removed two other adjacent cover plates and found small amounts of water draining out as the covers were removed. Workers took steps to capture the water using absorbent pads, however, did not stop work when they encountered the unanticipated condition. Further, the work planning process did not address the potential for water inside the penetration even though it was an anticipated condition based on previous work involving leak-testing of the cover plates. Participants in the critique were forthcoming and acknowledged an excellent response to aid the exposed worker and make timely notifications of the event.

105-KW: A teamster assigned to pick up a roll-on/roll-off waste container at the facility entered a radiation area without signing on to the associated radiological work permit and obtaining the correct dosimetry. Management held a critique which identified multiple instances where the assigned workers failed to follow procedures. The resident inspector noted the critique lead did not follow company procedures for conduct of critiques, which would have resulted in less than satisfactory results had not a senior manager who similarly observed the procedural deficiency engaged to clarify points and obtain additional relevant information.