

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 15, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending November 15, 2019

Building 324: Skin contamination was discovered on the neck and chin area of a worker after performing activities in the airlock. Initial bioassay surveys indicate no uptake of radiological material. A critique following the event collected statements from personnel who were with the worker and identified potential sources of the contamination. A second meeting was held for management to review video of the airlock entry and doffing of the worker's outer personal protective equipment. Contractor management then convened additional sessions to identify potential issues with personnel, processes, and personal protective equipment that may be contributing to contamination control issues at the facility.

In response to the skin contamination event, and due to a negative trend in contamination control, contractor management stopped all work, with the exception of min-safe operations, in Building 324 radiological areas. DOE-RL subsequently issued a letter that notes that corrective actions taken to date by the contractor to address radiological control issues have not adequately addressed the ongoing negative trend at the facility. Consequently, DOE-RL directed that work in radiologically contaminated areas within the facility remain paused until the contractor develops corrective actions, briefs DOE-RL, and obtains concurrence on a path forward.

Prior to declaration of the stop work at Building 324, contractor personnel completed the last of four planned pilot holes used to validate work methods for the upcoming installation of micropiles and to confirm the radiological conditions in the soil at the micropile installation area (see 6/15/18 report). Management conducted a formal post job meeting to collect lessons learned from the pilot hole work and obtain ideas and recommendations from workers regarding ways to further improve work methods and radiological control practices. Workers noted that space is limited and recommended removal of unused equipment and material from Room 18, where they are performing the work. Radiological engineering personnel noted that exposure estimates were underestimated and that they were revising their analyses to better reflect the conditions found during the work. Regarding positive observations, workers stated that recently implemented methods to increase time on station in Room 18 have improved efficiency. Efficiency improvements, along with the methods and equipment improvements that were developed over the pilot hole effort have reduced the time to drill a hole from weeks to days. Workers also noted that shop mockups played an important role in their development of necessary equipment modifications and provided valuable opportunities to train workers in a less hazardous environment than what they encounter in Room 18.

Tank Farms: The Tank Farms Operations Contractor (TOC) completed their investigation and cause analyses related to the bent piston rod on sluicer #3 and the PUREX connector leak on sluicer #2 in single-shell tank AX-102 (see 9/20/2019 report). Retrieval of AX-102 waste resumed after TOC personnel completed technical evaluations, equipment repairs, and leak tests. Some sluicer operations remain restricted pending design and installation of equipment modifications that will restore additional functionality while preventing similar future events.