

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 15, 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 15, 2022

Waste Treatment Plant: An operator performing rounds identified two unexpected control system trip indications for a system that provides sealing air for the process off-gas system exhaust fans. Subsequent investigation determined that the corresponding alarms had been received in the control room but not reported by the operator because, although not specifically identified as an expected condition, he was aware of ongoing work on the exhaust system and therefore incorrectly presumed that the alarms were expected. A critique performed to identify potential lessons learned from the event identified other conduct of operations deficiencies related to the work, including release of work without effective evaluation of the resulting conditions, removal of chemical safety equipment without adequate configuration or quality control, lack of adequate planning, and inadequate work instructions. This event, along with a string of serious lock out tag out violations over the last month, raise concerns regarding effective management of emergent work in a rapidly changing operations and test environment.

222-S Laboratory: A Chemical Technologist working inside a fume hood reported a loud bang noise and felt a percussion to their hand when they emptied a vial containing a small volume of dilute ion chromatograph standard solution into a waste container located within the fume hood. The individual was medically evaluated and was returned to work without restrictions. Radiological and chemical surveys determined that the event did not cause a release of radiological material or chemicals of concern. Visual inspection of the equipment and hood space did not identify any equipment damage or obvious cause of the event. A subsequent evaluation determined that the most likely cause of the event was a static electricity ignition of a small amount of hydrogen that had accumulated inside the waste container that is routinely kept closed to fulfill requirements associated with managing dangerous waste material. The contractor has implemented compensatory measures to prevent additional events. They are working with the container vendor to identify a permanent solution that allows the containers to remain vented while meeting dangerous waste management requirements.

Building 324: Workers entered a work area under an incorrect radiological work permit (RWP). The error was recognized shortly after entry and the workers safely exited the area. A resident inspector attended a critique held to gather facts related to the incident. Workers initially planned to enter the area under a routine work package to address accumulations of water condensate. However, because of an increased potential for an electrical hazard, several iterations of work planning ensued. The final work package contained an RWP which was different from the one governing routine operations. Subsequently, although the correct RWP was referenced in supporting documentation, the incorrect RWP was briefed to the workers. The critique identified several potential causes including time pressure to obtain work authorization, review fatigue, many RWPs with close similarities, and changing approaches to performing work. It was recognized that a web-based document control system used at other facilities would have prevented the error. The resident inspector noted that the critique was very positive, and participants were fully engaged, forthcoming, and safety focused.