

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 30, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending August 30, 2024

Occurrence Reporting: A resident inspector (RI) attended an event investigation on the shipment of a container of radioactive material offsite that was not properly surveyed and categorized. As a standard practice, the receiving offsite company performs both surface contamination and dose rate surveys of shipments to verify conditions match the shipping paperwork. During the dose rate surveys, the offsite company identified a contact dose rate of four millirem per hour on the bottom of the container. This was significantly higher than the highest dose rate of 0.4 millirem per hour documented by CNS. Due to the difference in dose rate, the container and shipment were not properly labeled or categorized as required by *49 CFR 171.1 Applicability of Hazardous Materials Regulations to persons and functions, section (b) Pre-transportation functions*. The DOE complex outside of CNS reports such issues in the Occurrence Reporting and Processing System under DOE Order 232.2A as an 8(7) I, "Violation of applicable Hazardous Materials Regulations requirements for activities listed in 49 CFR Section 171.1(b) performed during the preparation of offsite hazardous materials shipments and discovered during shipment in commerce or at the receiving site." The CNS procedure *Y-12 Occurrence Notification and Reporting*, includes site specific guidance that states in part, "A violation means the U.S. Department of Transportation has issued a violation." Based on this guidance, CNS does not file occurrence reports for these events (see 5/20/2022 report). YFO does not agree with this approach to reporting and is in discussion with CNS to determine a path forward. As a result of the event investigation, CNS is now requiring all radioactive material and radioactive waste shipments be surveyed on the bottom of the container and is evaluating the procurement of pole type radiation detectors to efficiently institute this requirement. CNS had not surveyed previous radioactive shipments on the bottom of containers due to the thought that the dose rates on the bottom of the container would not be higher than the top or sides.

Building 9212: A RI observed holdup removal activities on the oxide conversion facility (OCF) hydrofluorination fluid bed primary filter as part of efforts to place that facility in cold standby (see 5/19/2023, 6/16/2023, and 8/4/2023 reports). The RI reviewed the work package and walked down the area prior to the work. The RI noted that the work package listed a hold point to ensure 24 inches of spacing between the temporary fissile laydown area (TFLA) created for the work and other fissile areas. The spacing listed in the hold point differed from the 12-inch requirement listed on the signage of the TFLA. Spacing of the TFLA from other fissile areas exceeded 24 inches at the time of the observation. The RI contacted the area shift manager (SM) who then reviewed the work instruction and nuclear criticality safety (NCS) documents; consulted operations management and criticality safety personnel; and verified actual spacing in the field. The SM determined that the governing NCS technical document required a 12-inch spacing, matched the TFLA signage, and that the hold point in the work package was an error. Work was allowed to commence as the hold point spacing requirement was conservative and area spacing exceeded the requirement of the hold point. Shortly after work commenced, the breathing air supply pressure on a worker's protective suit fell below the minimum required by procedure causing work to be suspended. Work will remain suspended until CNS corrects the cause of the low breathing air pressure issue.