

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 1, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending March 1, 2024

Building 9212: CNS operators were preparing to weigh material contained in birdcages received from Building 9204-2E. Upon opening a birdcage, the operators noted excessive amounts of plastic from the oversized bags used for contamination control. The birdcage was one of 16 received from Building 9204-2E and the others also appeared to have excessive amounts of plastic. The operators entered the CNS procedure for an abnormal condition involving fissile material and established a nuclear criticality safety (NCS) administratively controlled boundary. The operators notified the shift manager (SM) and a NCS engineer for further guidance. The NCS engineer, operators, and shift manager entered the administratively controlled boundary to inspect the birdcages, determining four of the 16 birdcages had excessive amounts of plastic. The SM rescinded the administrative boundary for the 12 other birdcages and released them from additional NCS controls. The SM marked the remaining four as containing excessive plastic, posted NCS administrative controls, and placed them into secured NCS approved storage. The four birdcages will remain in NCS approved storage until ready for processing and the administrative controls will be rescinded upon removing the items from the excessive plastic. Birdcages being loaded in Building 9204-2E with excessive plastic is a repeat occurrence that was previously identified as part of an extent of condition review due to previous birdcage loading issues (see 11/4/2022 report).

Building 9215: Upon completion of a depleted uranium casting, three supervisors that were observing the operation discovered radioactive contamination in their hair while using the hand-held friskers at the boundary control station. Radiological control technicians successfully decontaminated the supervisors. As a precaution, the RCTs performed nasal swabs on the supervisors to determine if they had a potential for internal contamination. The results of the nasal swabs were negative. Although the contamination levels were less than required for CNS to file an occurrence report, this is the second time in three months that personnel have been contaminated on their heads while performing this process (see 12/1/2023 report). CNS performed an event investigation this week for the latest event, which the resident inspector attended. As a result of the personnel contamination and the spread of loose surface contamination in the immediate area of the furnace, CNS established new airborne contamination boundaries around the process area as a precaution while a new baseline is established. CNS is revising the radiological work permit to require the use of full hood respiratory protection while lowering a casting stack into a cooling can. CNS is continuing to evaluate the equipment and the process to determine if there is a potential for buildup of contamination in the cooling cans or vacuum purge system that may need periodic cleanout.

Building 9204-2E: During a disassembly and inspection of a unit in one of the positive pressure gloveboxes, personnel discovered a hole in one of the gloves. CNS conservatively closed the area while industrial hygiene performed smears of the area around the glovebox and the walking path to the exit. No personnel were contaminated, and CNS found no detectable activity on the smears taken. During the event investigation, CNS discovered that there were several gloves in the glovebox that had been previously taped up due to suspected holes.