

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 18, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Clinton Jones, Resident Inspector
SUBJECT: Oak Ridge Activity Report for the Week Ending November 18, 2022

Staff Activity: S. Abdi, R. Eul, J. Heath, R. Jackson, and P. Natividad were at the Uranium Processing Facility (UPF) as part of an equipment procurement and installation review. The team observed storage conditions and installed portions of the microwave casting system and recovery furnace. Last week, R. Jackson was at UPF to observe the placement of concrete at the HEUMF connector tunnel. F. Harshman was offsite this week for training.

Field Activity: The resident inspectors attended walkdowns of the Building 9215 material access area and Building 9212 E-wing with a NPO criticality safety engineer. During the walkdowns, the NPO criticality safety engineer discovered three different potential criticality safety issues. In Building 9212, a multiple use can without labeling was identified. It contained an oil-like substance in a tool laydown area. In Building 9215, two drums containing quantities of enriched uranium and other parts were identified as being mislabeled or not clearly labeled. The shift managers in both facilities took the appropriate actions per the abnormal operating procedure and established administrative boundaries until the conditions were resolved. In Building 9212, the contents of the can were later identified as non-fissile and dispositioned as required. In Building 9215, the affected drums had identifying paperwork placed with them to avoid further confusion.

Nuclear Criticality Safety: During the October 7th annual surveillance test of the Building 9212 criticality accident alarm system (CAAS), the digital message recorder module failed to operate, rendering the emergency notification speakers (ENS) inoperative. Since the facility was in a limiting condition for operation (LCO) due to performing the surveillance requirement (SR), there was not an additional unplanned entry into an LCO. The module was successfully replaced, and the SR completed satisfactorily. CNS submitted an occurrence report on this since the degraded ENS component is required for full CAAS annunciation at Building 9212. The digital message recorder is part of the legacy CAAS system that is installed in five of the facilities at Y-12 and is only tested during the annual CAAS surveillance testing. Due to this being the fourth failure in ten years, NPO questioned the adequacy of the yearly SR. CNS responded by declaring a potential inadequacy of the safety analysis in the five facilities that use this CAAS system based on there not being a specified reliability stated for the CAAS annunciation equipment. Only the detection equipment has a reliability value, which is set at 98%. The SR testing frequency of annual is the code-compliant default. CNS determined there are no operational restrictions at this time and is evaluating reducing the SR frequency to six months until sufficient data is obtained.

Qualification Board: The resident inspectors observed a final qualification oral board for a shift manager candidate. The members of the board were professional and adhered to the newly revised procedure that governs conduct of the board, questions, and grading of the candidate. The questions covered a variety of topics specific to the facility including the operability of credited safety systems in the Technical Safety Requirements (TSR), criticality safety, security, work control, and conduct of operations. The resident inspectors did not have any comments or concerns with the quality or conduct of the qualification board.