

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 9, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Frank Harshman, and Clinton Jones, resident inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending September 9, 2022

Building 9212: CNS resumed metal reduction operations on September 6. They continued firing the remaining five pressure vessels from the batch of uranium tetrafluoride (UF₄) that had the pressure anomaly (see 8/19/22 report). The resident inspectors observed the firing of the last pressure vessel. CNS was controlling the remaining pressure vessel with an out of service tag to ensure it would not be processed without the shift manager's authorization. That particular pressure vessel shared a common ingredient, beyond the UF₄, with the previously fired pressure vessel which had the high pressure reaction. The firing process was normal, not exceeding approximately two standard deviations from the mean pressure. The following day, the resident inspectors observed the removal of the metal button from the pressure vessel. The appearance of the metal button was much improved compared to what was removed from the pressure vessel with the anomalous reaction, which did not resemble metal. During the observation of the reduction operation, the residents inquired about the excessive paint that was flaking off of the ceiling in the area and whether it had any detrimental effects. The supervisor said that they are aware of the issue and ensure that the paint flakes do not interfere with the processes in the area. In addition, the resident inspectors discussed the condition of the gloveboxes which were used for the removal of the metal button and the required preventive maintenance with the system engineer. Specifically, the high efficiency particulate air (HEPA) filters in the box appeared to have been in service for an extended period of time. The system engineer confirmed there is an active preventive maintenance task to replace the HEPA filters every 10 years and that an aerosol test is performed every 2 years.

Building 9204-2E: CNS completed the process to decertify and re-designate a large vault type room which is located inside the material access area of Building 9204-2E. This was the culmination of two years of effort by the facility's stakeholders to reclaim valuable production floor space which CNS believes will enhance current and future operations in the facility. At present, further modifications to the area will be required before the area can be fully utilized as production space.

DNFSB Staff Activities: The resident inspectors completed a multi-week focused review of alarm activities across multiple facilities at Y-12. The resident inspectors reviewed abnormal operating procedures, facility logbooks, and the expected response to alarms in applicable buildings. In addition to these reviews, the resident inspector had multiple discussions with operators and facilities operations management (FOM) staff in the field throughout the facilities. These discussions included discussions on the frequency of "nuisance" alarms, current locked in alarms, the operator's and FOM staff's understanding of the technical reason for the alarming condition, the planned corrective actions, and timeline to resolve the alarming condition. The residents also conducted a focused observation in the Oxide Conversion Facility control room prior to its shutdown due to the exhausting of its supply of hydrogen fluoride which is needed to run the process. Overall, the resident inspectors found Y-12's handling of alarms acceptable and no significant issues were discovered throughout the focused review period.