

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 4, 2025

TO: Technical Director
FROM: Oak Ridge Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending July 4, 2025

Building 9212: Operators separate finished casted parts from casting molds by a process referred to as knockout. During a recent casting run, operators discovered a failure-to-pour during knockout operations. This occurs when molten uranium is unable to flow from the crucible to the individual casting molds and creates a potential nuclear criticality issue. Operators informed the Nuclear Criticality Safety (NCS) engineer and entered their Abnormal Operating Procedure (AOP) for abnormal castings. To resolve the problem, operators removed the 24 kg part from the knockout hood and transferred it to a hydraulic press enclosure to enable the part to be broken into smaller pieces for storage. Operators broke the part as directed by the AOP, which says to break in accordance with posted requirements. The operators processed the entire part into smaller pieces and then removed all material from the press, utilizing NCS compliant containers. The governing Criticality Safety Evaluation (CSE) for the breaking process says, in part, "If the loading... is greater than 20 kg U, uranium metal shall be removed after each breaking operation until less than 20 kg U remains in the glove box. Multiple pieces with a combined mass greater than 20 kg U shall not remain in the glove box". Operators followed the AOP, which stated to break the item in accordance with posted requirements; however, the 20 kg U control was implemented via the operating procedure, not the posting. As a result, operators breaking the metal did not remove a piece of material after each break to achieve less than 20 kg in the press enclosure, as required by the CSE. CNS conducted an event investigation to determine the underlying cause of the issue and created an action to have the AOP direct operators to the procedure for operating the press instead of the posting in the area. The resident inspector (RI) raised the concern that other production facilities also use AOPs and that this issue may not be limited to this facility. CNS added details to the formal action to communicate this issue to other facilities because of the RI's questions.

Building 9204-2E: CNS continued to receive spurious alarms from the legacy criticality accident alarm system through the non-credited monitoring system (see 6/13/2025 report). On Monday, CNS worked a troubleshoot and repair work order to identify the cause of the alarms. Electricians discovered a burnt component within the power supply for the emergency notification system cabinet. After successful replacement of the affected circuit board, the alarms cleared and no longer occurred when the operations center made announcements over the emergency notification system.

Building 9215: CNS completed the follow-on Contractor Readiness Assessment (CRA) for the metal purification process and performed the out-brief on Wednesday. The follow-on CRA confirmed that the five pre-start findings from the first part of the CRA (see 3/14/2025 report) for the nuclear and facility safety functional area were resolved. The CRA team identified only weaknesses and observations because of the review, most of which were resolved during the week. CNS plans to address the three weaknesses that remain open prior to the start of the federal readiness assessment review, tentatively scheduled for late July 2025.