DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 25, 2025

TO: Technical Director
FROM: Oak Ridge Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending July 25, 2025

Building 3019: Isotek personnel split open the outer lid of a container loaded with U-233 during a lifting evolution. This occurred when a component attached to a magnetic lifting device contacted a portion of an enclosure placed above the storage area, causing it to release and subsequently impact the loaded container. The configuration of the U-233 container included separate inner containers and a secondary inner lid. The radiological control technician in the area did not detect an increase in airborne radioactive contamination but did discover a small amount of both alpha and beta-gamma loose surface contamination upon survey of the damaged container. The amount of loose surface contamination was not indicative of an inner container breach. Isotek has analyzed two different accident scenarios in their Documented Safety Analysis (DSA) involving the mishandling of the component and the breach of the primary container filled with U-233 and other isotopes. In the analysis, Isotek identifies potential controls to prevent unmitigated on-site and off-site radiological consequences. These include administrative controls, such as training in response to abnormal events, and the Job Hazard Analysis process to identify potential hazards and controls prior to starting work. After the component was dropped onto a loaded U-233 container, the supervisor did not stop the evolution or follow any of the abnormal condition instructions in the procedure. The supervisor instead continued using the same lifting device to retrieve the component that had been dropped prior to stopping work and making notifications.

During the event investigation, Isotek identified that the supervisor should have stopped work when the component was dropped to notify management of the issue and determine a path forward. The operating procedure included abnormal condition instructions but did not address component mishandling as analyzed in the DSA. Additionally, the Job Hazard Analysis for the procedure does not include any lifting and handling hazards except those from using the facility crane. Isotek's lifting and handling procedure does identify critical lifts as those involving "a load item, if damaged or upset, that would result in a release into the environment of radioactive material exceeding the established permissible environmental limits." The component that dropped had the potential to cause a radioactive material release; however, it was not classified as a critical lift. At the event investigation, Isotek proposed procedural changes to close a containment door to prevent recurrence of a dropped component damaging a loaded U-233 container. Overall, the lift classification and lack of procedural response to lifting this component over loaded U-233 containers do not adequately reflect the analyzed hazards in the DSA.

Building 9212: YFO directed CNS to evaluate Building 9212 infrastructure, support systems, and required processes to continue functioning until at least FY 2045. Specifically, CNS is tasked with evaluating two areas as part of the evaluation: 1) the safe operations of site and facility infrastructure and required process equipment to support Building 9212 safe mission operations until FY 2035, and 2) the ability of site and facility infrastructure to support Building 9212 transition activities to Oak Ridge Environmental Management until as late as FY 2045.