DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 29, 2016

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending July 29, 2016

Transuranic Waste Processing Center (TWPC): Earlier this month, maintenance workers were preparing to enter the canister storage room in the TWPC process building to change out lightbulbs, but they had to suspend that work when radiological surveys indicated unexpected contamination. This week, during a subsequent review of the work package, the safety basis department manager questioned why a specific administrative control (SAC) for manned hot cell entry was not being implemented for this evolution. The SAC in question requires radiological material in the hot cell's processing area to be contained prior to manned entries into the hot cell, but the maintenance personnel were unaware that the safety basis definition of the hot cell included the adjacent canister storage room. North Wind management declared a technical safety requirement violation because previous manned entries into the canister storage room were conducted without implementing the SAC requirements. As an immediate compensatory measure, North Wind management suspended all manned hot cell entries.

Building 9720-5/Criticality Accident Alarm System (CAAS): The calculation that defines detector coverage areas for the Building 9720-5 CAAS establishes maximum container stacking heights for certain storage areas. These height restrictions ensure that CAAS detector stations are not shielded from detecting a nuclear criticality accident. Earlier this month, a shift technical advisor (STA)-in-training questioned why two storage areas had no stacking height restrictions. The STA discussed this question with the responsible CAAS shielding analyst who confirmed that some of the stacking configurations in these areas exceeded the stacking heights assumed in the CAAS detection analysis. The STA brought this information to the operations manager who, after consultation with safety basis personnel, determined that the configuration constituted a discrepant as-found condition. The operations manager took immediate action to reconfigure the areas in a manner consistent with assumptions in the CAAS detection analysis. CNS mission engineering management plans to evaluate this event for opportunities to strengthen its approach to protecting assumptions in calculations that support safety basis controls.

Building 9215: Two weeks ago, maintenance personnel attempted to troubleshoot and repair a defective vacuum pump that supports enriched uranium machining operations. They paused this activity after their attempt to reset the power supply on the pump unexpectedly shut down a second pump while it was in operation. Troubleshooting work resumed several days later under a revised work instruction that authorized diagnostic and repair work on both pumps. During the work, maintenance personnel identified and replaced several bad relays and one bad contactor that they believe caused the issues associated with the pumps. The site reps observed personnel executing the work safely in accordance with the approved work package and prescribed hazard controls. However, work had to be paused again after one vacuum pump would not energize to support post work testing. The site reps also observed boundary markers establishing the pumps under the control of the maintenance organization, per a standing order recently issued by the CNS Y-12 infrastructure manager (See 7/8/16 report).

Building 3019: Last week, the site reps and staff conducted walkdowns of Building 3019, which included a tour of the hot cells in Building 2026. The Building 3019 contractor, Isotek, will use the hot cells in Building 2026 to downblend U-233 materials (see 7/13/12 report). The downblending project should receive Critical Decision-1 approval in September 2016 and OREM is working with ORNL to transfer ownership of Building 2026 to the DOE Office of Environmental Management next year to support this campaign.