DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 3, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending April 3, 2020

COVID-19: The Oak Ridge Office of Environmental Management issued a partial stop work order directing the Transuranic Waste Processing Center, Building 3019, and Building 2026 contractors to begin transitioning to limited operations. CNS has been expanding the telework infrastructure to allow a greater portion of the Y-12 workforce to work remotely.

Nuclear Criticality Safety: ANS 8.19-2014 states that "Operations shall be reviewed at least annually to verify that procedures are being followed and that process conditions have not been altered…" An NPO facility representative performed an informal evaluation of the coverage of nuclear criticality safety operational reviews and noted that the method CNS uses to implement this requirement may have excluded a small number of generic fissile material operations. NPO categorized this and other related concerns as a performance problem.

Building 9204-2E: During glovebox operations last week, a component dropped approximately six inches from a vacuum fixture onto an employee's hand. The situation was deemed field correctable by nuclear criticality safety personnel and the fixture was tagged out of service. There was no fact finding meeting or critique.

Building 9212: During a walkdown as part of the nuclear criticality safety operational review for decontamination operations, one of the people performing the walkdown inadvertently bumped into a pump slated for decontamination. The pump fell off of the pallet it was on and came to rest on a bag containing fissile material. This particular bag has a twelve-inch edge-to-edge spacing requirement per the criticality safety evaluation. The response was appropriate and the pump has been moved. CNS categorized the violation as a deficiency, performed a fact finding meeting, and plans to perform a causal analysis.

Building 9212: Chemical analysis was performed on the bulk organic material that collected in a phase separator upstream of the high capacity evaporator and on the water used to rinse the phase separator and associated feed tanks. This analysis confirmed that the bulk organic material was primarily from the safe bottle that contained a two-phase organic solution along with some additional organic material that originated in the analytical chemistry laboratory (see 2/28/20 report). Only trace/minimal quantities of organic material were found in the rinse water. These satisfactory sample results supported returning the high capacity evaporator system to service.

The discovery of the bulk organic material also uncovered a facility interface issue due to the chemicals in the analytical chemistry laboratory safe bottle not being on the list of materials that were analyzed in the Building 9212 safety basis. CNS concluded that the potential inadequacy of the safety analysis was not an unreviewed safety question. The evaluation of the safety of the situation determined that none of the insoluble compounds that could potentially be formed from this material constitute a significant hazard for handling, processing, or disposal. CNS is completing a causal analysis of the entire event and additional corrective actions are anticipated.