DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 7, 2016

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending November 4, 2016

Building 9212/Nuclear Criticality Safety (NCS): Two weeks ago, CNS NCS personnel entered the potential NCS issue (PNI) process (see 7/8/16 report for a description of the process) to document an issue related to a drum packaging activity performed in a Building 9212 storage array. In this case, the associated procedure allowed packaging activities within the array and referenced an NCS evaluation (NCSE) that did not analyze such an activity.

The site representatives reviewed procedure changes implemented as a result of this PNI and walked down the affected area. As a result of the PNI, packaging operations are now performed within a new physical boundary erected within the storage array. The boundary takes that portion of the array out of service; operations within the boundary are then performed in accordance with a general material handling NCSE that analyzes packaging operations outside of storage arrays. The procedure changes implement additional NCS controls derived in this analysis.

Enriched Uranium (EU) Mission Transformation: The first phase of CNS's EU mission transformation strategy (see 6/10/16 report) seeks to cease EU programmatic operations in Building 9212 no later than 2025. A component of this strategy involves transitioning select capabilities into Buildings 9215 and 9204-2E. CNS recently issued a project execution plan that describes the approach for transitioning one such capability—chip processing—from Building 9212 to Building 9215. Current chip processing operations in Building 9212 involve cleaning, drying, and pressing recovered chips (turnings and fines produced during Building 9215 EU machining operations) into briquettes, which are then consolidated using Building 9212 casting equipment. Chip processing operations planned for Building 9215 will utilize a new technology that consolidates recovered chips by directly melting the material in furnaces without the need for briquetting or extensive preparatory cleaning. CNS believes the new technology will provide several processing advantages, such as improved metal yield (current operations have produced low EU metal yields in recent years, see 4/18/14 and 12/25/15 reports) and a simpler process co-located with chip-generating operations. This project is scoped to deploy a single furnace by June 2018, though CNS plans to install additional furnaces in subsequent years. CNS has determined that this project does not represent a major modification to Building 9215.

As a complement to the first phase of its EU mission transformation strategy, CNS recently issued a plan that defines an exit strategy for Building 9212. The ultimate goal of the plan is to identify and sequence the activities needed to support the startup of the Uranium Processing Facility (UPF) and transfer Building 9212 to the DOE Office of Environmental Management (EM) in a safe, secure, and cost-effective manner. The strategy is divided into four major phases. The first phase, which is already underway, involves draining and isolating abandoned equipment and systems to place as much of the facility as possible in a condition that no longer requires safeguards or NCS controls. The second phase involves shutting down, draining, and isolating equipment that will no longer be needed once planned process relocations (such as chip processing) have occurred. The third phase of the strategy primarily defines how long operational readiness of certain Building 9212 capabilities will be maintained following UPF startup. During the fourth phase, Building 9212 equipment previously used for salvage and accountability operations will continue to operate to support disposition of holdup materials and prepare the facility for turnover to DOE EM.