

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 4, 2018

TO: Steven A. Stokes, Technical Director  
FROM: T. Davis, D. Shrestha, and K. Sullivan, Acting Resident Inspectors  
SUBJECT: Oak Ridge Activity Report for Week Ending May 4, 2018

**Building 9212/Nuclear Criticality Safety:** Last week, CNS personnel updated the extent-of-condition plan associated with Building 9212 enriched uranium accumulation issues. During execution of the original plan, CNS personnel identified additional uranium accumulation issues (see 4/20/18 and 3/30/18 reports). The update includes the following key changes: expanded and accelerated field walk-downs; identification of a site-level improvement initiative (additional details below); and evaluation of administrative control implementation results over the last few years. CNS personnel have completed 3 of the 6 evaluations required in the extent-of-condition plan with two additional evaluations scheduled to be complete this month. The field walk-downs, which have been expanded, were completed this week.

**Nuclear Criticality Safety Improvement Initiative:** CNS management will begin a site-level initiative to improve implementation of the criticality safety program at Y-12 this month. The deputy site manager will champion the initiative that will focus on weaknesses identified during the extent-of-condition review and causal analyses. The plan will be finalized later this month and is expected to include the following actions:

- Independent evaluation by external criticality safety experts
- Review of change control processes to ensure impacts are fully understood and addressed
- Assessment of administrative controls that include holdup measurements
- Review of operator training on processes, equipment, and criticality safety assumptions
- Review and update of the Inadvertent Accumulation Prevention Program reports including requirements to periodically review and update the reports, as necessary
- Update of the procedure for Nuclear Criticality Safety annual operational reviews

**Building 9212/Casting Operations:** Casting operations were suspended in late-March due to the identification of significant accumulations of enriched uranium holdup in the casting line (see 3/30/18 report). CNS personnel are revising the Nuclear Criticality Safety Evaluation to address material holdup including identification of appropriate controls. CNS is developing plans for the restart of casting following implementation of any new criticality safety controls.

**Highly Enriched Uranium Materials Facility (HEUMF):** Last week, CNS made a new positive Unreviewed Safety Question (USQ) determination associated with the April 4, 2018, discovery of potentially pyrophoric material. To date, CNS has identified five potential inadequacies in the safety analysis (PISA) during an on-going extent of condition review of materials stored in HEUMF (see 4/27/18, 4/20/18, 3/16/18, and 3/2/18 reports). The PISAs related to ignitable and pyrophoric material resulted in positive USQ determinations with analysis continuing for the additional three. In response to the positive USQ for the pyrophoric material, CNS is revising the approved justification for continued operation associated with ignitable material. The extent of condition review of material stored in HEUMF is ongoing.