

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 6, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending March 6, 2020

DNFSB Staff Activity: Staff members D. Andersen and Y. Li traveled to Y-12 to conduct oversight of structural walkdowns that support upcoming seismic analyses for Building 9204-2E as part of the extended life program safety strategy for Building 9204-2E and the 9215 Complex.

Nuclear Criticality Safety: Operations in one of the main process areas of Building 9212 have been paused for a second time this year as a result of nuclear criticality safety violations. This week, an NPO facility representative discovered loaded sample bottles in an area that is only approved for storage of empty fissile containers. A CNS nuclear criticality safety engineer and production supervisor established administrative control of the area and made the appropriate notifications. The sample bottles have since been placed in an approved storage location. Another nuclear criticality safety violation occurred this week in the same process area when a drum was found that was not clearly labeled or marked to identify it as non-fissile material. In January, a similar event occurred when fissile material was found in an area that is only approved for storage of empty fissile containers (see 2/7/20 report). Several nuclear criticality safety violations occurred as a result of that event including not immediately notifying nuclear criticality safety personnel. In that instance, the fissile material was moved into an approved storage location without guidance from nuclear criticality safety personnel.

Nuclear Criticality Safety: In January, NPO disapproved a CNS proposal to revise the documented safety analysis for the Highly Enriched Uranium Materials Facility (HEUMF) to remove a key assumption for tracking container residence time as transient, interim, or prolonged low-maintenance storage (see 1/24/20 report). CNS has since been working to identify the storage category for each container in HEUMF and the residence time. During this review, CNS discovered three containers in storage that contained materials not specifically analyzed and approved for storage in the criticality safety evaluation. When notified, facility personnel responded appropriately. CNS preliminarily categorized the nuclear criticality safety violations as a deficiency. CNS determined that a potential inadequacy of the safety analysis does not exist. Part of the rationale provided was that no unanalyzed hazards exist, the parameters assumed in the documented safety analysis remain bounding, and no new controls are required. The criticality safety evaluation will need to be revised. These containers were present in HEUMF but were not found during the multiple extent of condition reviews performed in 2018 after the discovery of unanalyzed materials in HEUMF (see 11/30/18 report). CNS expects that additional similar issues may be found as the extent of condition review continues.

Calcliner Project: The Uranium Processing Facility Project Office completed an assessment in response to non-conforming welds that were discovered last year on pipe spool pieces for the Building 9212 Calcliner Project (see 11/22/19 report). The transmittal letter to CNS stated that the issues identified during the assessment represent a systemic breakdown of programmatic barriers that detect non-conformances and prevent inadvertent use/installation of non-conforming material.