

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 24, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending January 24, 2020

Highly Enriched Uranium Materials Facility (HEUMF): Last week, CNS reported a 3A-2 occurrence under DOE Order 232.2A due to a noncompliance with the HEUMF documented safety analysis. The noncompliance was that CNS was not tracking container residence time, which is a key assumption in the documented safety analysis. A Potential Inadequacy in the Safety Analysis (PISA) for this issue was declared in February 2019 (see 3/1/19 report). In the Evaluation of the Safety of the Situation that was developed in April 2019, part of the justification for not requiring any compensatory actions was that none of the containers had exceeded 10 years of storage since their receipt in HEUMF. Container residence time is used to define three categories of material storage ranging from less than or equal to 1 year (transient), 10 years (interim), or 50 years (prolonged low-maintenance). CNS submitted to NPO a proposed change to the documented safety analysis that removed the key assumption for tracking container residence time. While reviewing the proposed changes, NPO engineers noted that CNS had not been tracking container residence times despite identifying the issue in the February 2019 PISA. An adequate basis for removing the key assumption was not provided in the submitted safety basis changes. Actions assigned during the event investigation this week include determining the technical basis for tracking container residence time (including the history of its incorporation into the safety basis) and having an electronic container residence time tracking method.

Emergency Management: Last week, CNS completed the after action report for a full participation exercise conducted in December which tested the site's response to a simulated security event and chemical release. Overall performance was rated as Very Good, with 99% of all objectives met. One notable improvement item was that the pre-fire plan for Building 9202 (Development) did not include the chemical released during the exercise, though the hazardous material identification document had been revised in 2018 to include a significant amount of the chemical.

Nuclear Criticality Safety: The DOE annual metrics report for nuclear criticality safety programs for fiscal year 2019 rated Oak Ridge as "meets or exceeds expectations" and Y-12 as "adequate but needs improvement." This is the same qualitative grade that Y-12 received for fiscal year 2018. The report noted that CNS has made progress in addressing problems related to the unanalyzed uranium accumulation discoveries. Nuclear criticality safety staffing has increased, primarily through hiring of early career staff.

Earthquakes: The United States Geological Survey reported a magnitude 3.8 earthquake centered approximately 30 miles northeast of Oak Ridge on Monday. Two lower magnitude 2.4 and 2.8 earthquakes were also reported on Sunday and Tuesday, respectively. No damage to the Oak Ridge Reservation was reported.