

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 1, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending March 1, 2019

DNFSB Staff Activity: M. Sautman was onsite to provide resident inspector training. While onsite he supported walkdowns of the Uranium Processing Facility construction site, Building 9212 and Building 9995.

Building 9212: In October 2018, NPO approved a revision to the Building 9212 safety basis that allows for concurrent operation of the secondary extraction and high capacity evaporator processes (see 10/12/18 report). Concurrent operation of these systems had previously been prohibited by an operational restriction. CNS has been pursuing additional exclusions to the operational restriction to allow concurrent operation of the secondary extraction and wiped film evaporator processes. During this work, CNS discovered that the installed vent path for the wiped film evaporator has a cross-sectional area that is less than the cross-sectional area credited in the safety basis. The vents are a passive design feature that are credited to reduce the frequency of explosions as a result of red oil reactions by providing overpressure relief. CNS declared a Potential Inadequacy in the Safety Analysis (PISA) based on this discovery and has maintained the system in warm standby until the condition is resolved.

Highly Enriched Uranium Materials Facility (HEUMF): On February 28, 2019, CNS declared a PISA related to not tracking the residence time of containers for all material types stored in the facility. Material accepted for storage into HEUMF is required to have the received container's residence time tracked since multiple storage times are used in the facility (ranging from less than or equal to 1 year, 10 years, or 50 years). Tracking the residence time of each container is designated as a key assumption in the HEUMF safety basis. The residence time can trigger repackaging of material from one type of container to another. At this time, material has been re-containerized appropriately for storage requirements in Rackable Can Storage Boxes; however the residence time had not been tracked as required. DNFSB headquarters staff had recently transmitted a review agenda on February 6, 2019 that dealt with material receipt and storage in HEUMF.

Building 9995: Building 9995 is a Hazard Category 2 facility that serves as the Analytical Chemistry Laboratory at Y-12. The resident inspector and visiting resident inspector walked down the facility with the NNSA Facility Representative. Topics discussed during the walkdown covered implementation of the fissile material inventory specific administrative control and current work activities—including preparations to consolidate work areas and accommodate installation of new equipment. Building 9995 was constructed in the mid-1950's and its capabilities are not part of the Uranium Processing Facility design. To support continued and increased operations into the 2040s, an extended life program implementation plan was developed for Building 9995 in September 2018. Continued operations in Building 9995 will require additional engineering evaluations and/or upgrades to the facility fire protection, HVAC and electrical systems.