

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 10, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Frank Harshman, Resident Inspector
SUBJECT: Oak Ridge Activity Report for the Week Ending February 10, 2023

Staff Activities: B. Weathers and J. Flora traveled to Oak Ridge this week. At Y-12, the staff observed an NPO-led nuclear criticality safety walkdown of the Y-12 analytical chemistry laboratory. The group walked down and discussed the recovery actions from the prior sprinkler head failure event that resulted in water being released on several fissile material containers and bags of contaminated items (see 1/13/23 report). CNS has completed recovery actions and resumed operations in the affected area. At the Transuranic Waste Processing Center, the staff performed a walkdown with UCOR and OREM personnel. The staff observed operators successfully puncture a drum in the box breakdown area. The staff also discussed future work activities that are planned after a safety basis revision is approved and implemented, which will allow UCOR to process containers that contain oxides.

Building 9204-2E: CNS investigated why Building 9204-2E workers handled radiological material last week in a non-radiological workstation and without the proper personnel protective equipment (see 2/3/23 report). CNS's proposed corrective actions include briefing the workers on the expectations for reviewing radiological work permits and improving supervisor briefings such that the briefings result in greater worker engagement. In addition, CNS will try to improve how procedures and training address material codes so that workers would have a better understanding of the materials they were handling.

Building 9720-82: CNS declared a positive potential inadequacy in the safety analysis and subsequently declared a positive unreviewed safety question for two separate issues related to key assumptions in the Building 9720-82 documented safety analysis (DSA). The first issue is related to the use of non-type EE/EX powered industrial trucks for maintenance activities in the storage area building (SAB) and the dock areas of the facility. Type EE/EX powered industrial trucks have additional features, such as enclosed motors and contactors, that reduce the potential for the equipment to create sparks. A key assumption in the DSA states that only type EE/EX powered industrial trucks may be used in the SAB and the dock. This restriction is credited to reduce the frequency of a fire by limiting the number and types of ignition sources that may be present at any given time. The use of a non-Type EE/EX powered industrial truck has not been specifically evaluated in the DSA or evaluated in the development of the hazards and accidents analyses. During the extent of condition review for the initial non-compliance, CNS discovered that the facility was not in compliance with another key assumption that limits the number of powered industrial trucks that are allowed to be in certain areas of the facility. CNS found that operations personnel had allowed more powered industrial trucks than permitted into the applicable areas during planned maintenance and project activities. This second key assumption was utilized to provide a basis for the size and duration of the powered industrial truck fires analyzed in the DSA. The use of multiple powered industrial trucks in those areas had not been evaluated in the facility's safety basis. CNS is currently drafting a justification for continued operations.