

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 24, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Clinton Jones, Resident Inspector
SUBJECT: Oak Ridge Activity Report for the Week Ending February 24, 2023

Staff Activities: J. Flora remotely supported resident inspector duties.

Building 9212: CNS declared a site area emergency due to a uranium fire on Wednesday, February 22. Workers were weighing a newly pressed briquette of compressed enriched uranium chips in an open-faced hood when the briquette began to smolder and glow red. The workers attempted to extinguish the fire per their abnormal operating procedure by pouring carbon nanospheres (coke) onto the briquette. Due to the placement of the briquette on a scale, the coke was not effective in extinguishing the reaction. The workers called the Y-12 Operations Center and evacuated the facility. The Y-12 Fire Department arrived and added additional coke to the smoldering material, including capping the metal coke can over the pile. The material smoldered for over an hour before the temperature began to decrease. There was no fire or damage outside of the small hood containing the briquette. There was no release of radioactive contamination associated with the event. Multiple facilities were evacuated out of caution. CNS is developing a recovery plan to remove and disposition the briquette from the hood. Additional enriched uranium chips from the same originating container remain in the chip drying and briquetting process gloveboxes under an inert, argon environment.

CNS reported this event under the DOE Order 232.2A occurrence reporting criteria for both a fire and the declaration of a site area emergency. Y-12 has had several prior instances of briquettes undergoing an exothermic reaction during storage or handling (see 8/18/17, 2/26/18, and 12/7/18 reports). As a results of these types of events, the Board issued a letter to the DOE dated November 18, 2022 regarding reactive material hazards at the Y-12 National Security Complex which highlighted opportunities to improve Y-12's safety posture by enhancing analysis and controls of uranium pyrophoric reactivity hazards.