

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 25, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Brandon Weathers, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending March 25, 2022

Nuclear Criticality Safety: CNS performed an additional non-destructive assay measurement for the legacy drum that contains Raschig rings and a uranium-bearing material (see 3/4/22 report). CNS is finalizing the measurement results, but the preliminary data from the second measurement prompted CNS to reenter the Potential Inadequacy of the Safety Analysis evaluation process. Over the past few months, CNS also reviewed Y-12 historical records to identify potential sources of the drum contents. The exact source may not be definitively identified, but new information suggests that the material could have been stored in this drum for several decades. The drum remains under administrative control. There is a drum cover over the lid to prevent liquid ingress and CNS wrapped the drum in plastic as an additional precaution.

CNS found the broken drain covers in Building 9204-2E while working on an update to the corresponding criticality safety evaluation for the equipment (see 3/11/22 report). During that update, CNS also identified a potential nuclear criticality safety issue concerning a contingency that may not have been adequately bounded. CNS evaluated this situation using their potential nuclear criticality safety issue process and determined that the existing calculation was adequately bounding for the upset condition. Regardless, CNS elected to add additional calculations to the criticality safety evaluation to demonstrate subcriticality for this case.

Y-12 Electrical: Last Friday afternoon, an unplanned power outage affected several facilities at Y-12, including Buildings 9212, 9215, 9204-2E, and the Highly Enriched Uranium Materials Facility. CNS investigated the issue and found that a turkey had caused a breaker to trip. The power interruption resulted in a temporary loss of the annunciation capability for the criticality accident alarm systems in Buildings 9212, 9215, and 9204-2E. CNS filed an occurrence report for the performance degradation of these safety significant systems.

Radiological Control: A laboratory technician alarmed a personnel contamination monitor and was found to have elevated activity on three fingers. Radiological control personnel attempted to decontaminate the technician's fingers in the field but were unsuccessful. The radiological control personnel escorted the technician to the Occupational Health Services center for additional decontamination, which was successful. The original activity reading was 3,900 disintegrations per 100 cm² alpha. This was below the DOE occurrence reporting threshold.

Building 9212: The resident inspector observed an operational drill in a chemical recovery area. The drill scenario involved chemical operators finding an overturned sample bottle. They responded appropriately and correctly determined that the condition was field correctable. The operators referred to the abnormal operating procedure and made the required notifications.

Y-12 Contract: NNSA extended the CNS management and operating contract for Y-12 and Pantex by six months, through September 30, 2022. A start date for contract transition activities has not been announced.