

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 13, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending November 13, 2020

DNFSB Staff Activity: Several members of the Board's staff had two teleconferences with CNS and NPO personnel for a nuclear criticality safety program review. This review is meant in part to follow up on the Board's letter dated July 25, 2019.

Building 9212: There was a small fire that lasted less than two minutes in a hood used for pickling operations. There was no reported damage or radiological release. After an investigation, a fire protection engineer determined that dust in an exhaust vent duct was ignited by a spark. The spark likely occurred due to arcing from a heating element. A breaker tripped. The critique identified several potential issues. A chemical operator reset the breaker, but a certified electrician or electrical engineer should have evaluated the situation and have been the one to reset the breaker. This situation had been evaluated during at least one previous event that did not result in a fire, but that evaluation did not determine the cause. In addition, the chemical operators notified the shift manager of the potential fire upon discovery, who then called 911 to trigger the fire department response. In two recent events requiring fire department response (see 7/3/20 and 8/7/20 reports), personnel first notified someone else instead of calling 911 or the plant shift superintendent. CNS had previously identified corrective actions to address this. CNS plans to report this in ORPS.

Nuclear Criticality Safety: In late October, operators discovered what appeared to be rain water on the floor inside of a HEPA filter storage array. The HEPA filters were stored within two layers of plastic bags. Under the direction of nuclear criticality safety engineers, operators manipulated the bagged HEPA filters to determine whether water had breached the inner bag. While manipulating one of the HEPA filters, liquid pooled on the floor from the bag. The individuals who observed the liquid release agreed that it appeared to have exited the outer bag. At that time, they could not visually confirm that liquid had not breached the inner bag. Operators placed some HEPA filters on metal pallets, in the area of the array that had liquid, to accelerate evaporation and prevent additional liquid from touching the bagged HEPA filters. Nuclear criticality safety engineers recommended that metal pallets be placed under all HEPA filters and that the bagged HEPA filter that released liquid be inspected to determine whether liquid had entered the inner bag and contacted the HEPA filter. On Tuesday, nuclear criticality safety engineers classified the condition as a deficiency because operators determined that the subject HEPA filter was wet. Nuclear criticality safety engineers provided additional guidance for operators to inspect the other bagged HEPA filters in the array and reemphasized that all HEPA filters remaining in the storage array be placed on pallets.

A resident inspector checked nuclear criticality safety records and found twelve other instances of rain water intrusions in 2020. Only two of these events were significant enough to be classified as a nuclear criticality safety minor noncompliance or deficiency. All of the other events were field correctable. Several Y-12 facilities (9206, 9212, 9995, and 9204-2E) had multiple roof leaks throughout the year.