

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 14, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Brandon Weathers, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending January 14, 2022

Nuclear Criticality Safety: Last week, a Building 9212 shift technical advisor noticed liquid inside a discharge tube of the Stack 110 system. A nuclear criticality safety control requires periodic inspection of the discharge tubes to ensure that material does not exceed an upper value and that no liquid is in the discharge tubes. The shift technical advisor established administrative control of the area and contacted nuclear criticality safety personnel. They inspected the area and confirmed that a pale green-yellow liquid was in the discharge tube. They did not find liquid in any of the five other discharge tubes. Through further investigation of the system, personnel noticed that water was accumulating around a plastic strap that was caught between a filter house door. The filter housing is outdoors and there was heavy rain and snow in the area overnight. Nuclear criticality safety personnel provided guidance to place processes that are connected to the filter house on hold, drain the discharge tube, troubleshoot the potential leak path, and confirm no leakage after another precipitation event. Personnel successfully completed those actions and returned the system to operation. CNS classified this nuclear criticality safety infraction as a minor non-compliance.

The same day as the discharge tube event, operators found water on a storage tank in another area of Building 9212. They placed the area under administrative control and contacted nuclear criticality safety personnel. The workers determined that water from the recent rain and snow leaked through the roof. Nuclear criticality safety personnel provided guidance to use absorbents to collect the rainwater.

Separately, a NPO facility representative noticed that two sample bottles were stacked on top of other sample bottles in a storage rack. The stacked sample bottles exceeded the height of the rack by approximately 1 inch, which was a nuclear criticality safety control violation. Nuclear criticality safety personnel assessed the situation and corrected the non-compliance.

Building 9212: CNS reconvened the critique meeting for the conductivity probe position issue that affected the wet vacuum system (see 1/7/22 report). The responsible manager requested a causal analysis be conducted for this event. It is expected that the causal analysis will consider the potential for similar criticality safety control implementation and validation issues at Y-12.

Cold Weather Impacts: Recent cold weather caused two events in nuclear facilities. The Highly Enriched Uranium Materials Facility operations manager reported an occurrence for the loss of smoke detection in a service area that is part of the secondary confinement system due to an unexpected trip of an air handling unit and exhaust fan. The equipment tripped because a freeze protection setpoint was reached.

The fire department responded to Building 9206 due to an alarm for a non-credited dry pipe sprinkler system that provides coverage to an outside dock area. They found that freezing temperatures had cracked two drip drums.