

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 5, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Matthew Duncan and Brandon Weathers, Resident Inspectors  
**SUBJECT:** Oak Ridge Activity Report for Week Ending February 5, 2021

**DNFSB Staff Activity:** This week, a headquarters staff team had several teleconferences with CNS and NPO personnel for an ongoing review of reactive hazards at Y-12.

**Nuclear Criticality Safety:** An NPO facility representative questioned the presence of a large bag of construction materials inside a large geometry exclusion area (LGEA) in Building 9212. CNS nuclear criticality safety personnel evaluated the bag and determined that it was not compliant with the LGEA requirements. Further investigation of the area led to the discovery of another non-compliant item (5-gallon bucket). The bucket was not part of the work being performed by construction personnel, but it may have been inadvertently moved into the LGEA when additional materials were brought into the area. CNS categorized this event as a nuclear criticality safety deficiency. Besides addressing the non-compliant items, CNS generated several corrective actions that focused on reinforcing LGEA training and whether a LGEA barrier representative role should be established. CNS has responded to several nuclear criticality safety violations over the past year in which personnel from organizations outside of the facility, such as maintenance, were involved. Recently, CNS issued a standing order to improve the interface between operations, nuclear criticality safety, and maintenance personnel (see 1/8/21 report). The standing order applies to corrective maintenance activities in Building 9212 and does not apply to other facilities or construction activities. CNS created the standing order as an interim measure while they develop more comprehensive direction for personnel across the site.

CNS identified significant issues with the LGEA program in 2019 and has been working to improve the program since then (see 12/6/19, 1/17/20, and 3/15/20 reports). In response to several LGEA related nuclear criticality safety violations in 2020, NPO began a reactive assessment of the LGEA program (see 11/6/20 report). Other recent nuclear criticality safety violations that were identified by NPO and CNS's continued challenges with properly controlling LGEAs resulted in NPO staff escalating the situation for awareness of NPO senior management. In January, NPO senior management requested that CNS senior management meet with them bi-weekly to discuss progress on addressing nuclear criticality safety corrective actions and improvements. Those meetings had previously been held monthly.

**Building 9215:** Last Saturday, a maintenance employee was removing a metal plate from equipment. While drilling stripped bolt heads on the metal plate using an approved cutting oil, the employee noticed a spark and a short duration flash at the tip of the drill bit due to friction between the drill bit and the metal bolt. The employee immediately stopped and notified his supervisor, who then called 911. Y-12 fire department personnel responded and radiological control personnel surveyed that area. The shift manager granted work start approval to resume the maintenance job on Monday morning. Later on Monday, a fire protection engineer categorized the event as a fire given the apparent ignition of cutting oil vapor. CNS declared it as a reportable event per DOE Order 232.2A.