

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 14, 2020

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Matthew Duncan and Brandon Weathers, Resident Inspectors  
**SUBJECT:** Oak Ridge Activity Report for Week Ending August 14, 2020

**Transuranic Waste Processing Center (TWPC):** On Monday, the TWPC facility manager declared a technical safety requirement (TSR) violation due to not meeting a specific administrative control for pyrophoric and oxide waste drum staging. The specific administrative control has a list of waste drums at TWPC that are known to contain pyrophoric materials. Last winter, TWPC personnel investigated the contents of a drum and determined that it contained potentially pyrophoric materials. On Monday, they discovered that this drum was not on the list of drums in the specific administrative control. This control is used to protect an initial condition in the safety basis for the amount of pyrophoric materials permitted onsite. TWPC personnel reported the TSR violation as a reportable event per DOE Order 232.2A and determined that a potential inadequacy of the safety analysis exists. Initial compensatory measures were to ensure the drum, which is overpacked, remains closed and under administrative control.

**Nuclear Criticality Safety:** During the process of updating the wet vacuum system criticality safety evaluation, a nuclear criticality safety engineer found that the evaluation did not address fissile material holdup past the final area traps. CNS followed their process for evaluating this information as a potential nuclear criticality safety issue. Based on existing non-destructive assay measurements, the engineer postulated that fissile material could potentially be redistributed into a section of piping and leak in an area that is not in a large geometry exclusion area. The large geometry exclusion area program is credited for controlling spilled fissile solution such that it cannot collect into an unsafe geometry with respect to nuclear criticality safety. In response to the issue, CNS personnel performed a walkdown of the piping and found that it was currently in acceptable condition. Nuclear criticality safety personnel plan to address the scenario of fissile material holdup downstream of the final area traps in the criticality safety evaluation update. CNS plans to determine whether a surveillance is necessary based on the potential for degradation of the piping. No immediate compensatory measures were necessary.

CNS developed and is in the process of completing actions to address leaking two-cylinder chip dollies that have been discovered in Buildings 9215 and 9212 (see 6/25/20 report). The actions included a bi-weekly surveillance to inspect all dollies in Buildings 9215 and 9212. CNS ultimately plans to unload the uranium chips from the dollies and process them through the ultrasonic chip cleaning system prior to forming them into briquettes. The chip dollies that have leaked will be taken out of service. CNS developed an action to create a disposition plan for two-cylinder chip dollies that includes inspection of the cylinders to determine the severity of degradation. The disposition plan will also determine the need for procuring additional dollies.

**Building 9212:** After reviewing the corrective action plans for the findings from the federal readiness assessment, NPO authorized CNS to restart the ultrasonic chip cleaning process (see 7/31/20 report). This process had been subject to an operation hold since June 2018 due to nuclear criticality safety concerns (see 6/21/18 report). CNS successfully operated the process for the first time since then on Thursday.