

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 6, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Timothy L. Hunt, Cognizant Engineer  
**SUBJECT:** Idaho National Laboratory (INL) Report for July 2021

**DNFSB Staff Activity:** Three of the Board's staff members were on site at the Radioactive Waste Management Complex during the week of July 12, 2021, reviewing waste characterization activities and preparations for shipment of transuranic waste to the Waste Isolation Pilot Plant.

**COVID-19 Update.** During this reporting period, the INL site community transmission rate rose from low or moderate to "substantial" based on Centers for Disease Control guidance.

**Technical Procedure Non-compliances During TRUPACT Operations.** On July 12, 2021, Fluor Idaho operations personnel were assembling TRUPACT casks at the Advanced Mixed Waste Treatment Project for shipment to the Waste Isolation Pilot Plant (WIPP). When installing the outer confinement assembly (OCA) lid, the technical procedure requires a vacuum line be connected to the lid to facilitate seating of the lid and rotation of the locking ring. However, in two cases, no vacuum line was connected to lids during installation and they were locked without performing the required vacuum procedural steps. Fluor Idaho paused payload assembly and TRUPACT operations for three days until corrective actions could be developed and completed. Corrective actions included briefing impacted workers on procedure compliance and placekeeping, and increasing shift supervisory oversight. Non-conformance reports were generated for both TRUPACTs and shipment to WIPP was delayed for one day while evaluating their release. The TRUPACT safety analysis report for packaging defines the use of the vacuum process as optional for the OCA lid, but that option was not flowed into the technical procedure. Past experience indicates the vacuum is not always necessary for proper rotation of the locking ring but is needed to protect the outer containment vessel and o-rings from damage.

**Incorrect Radiological Area Posting at Idaho Nuclear Technology and Engineering Center Facility (INTEC).** On July 8, 2021, during the process of supporting a preventative maintenance evolution in CPP-1659 (Contaminated Equipment Maintenance Building), a radiological control technician (RCT) identified an improperly posted neutron boundary. CPP-1659 is an annex to the New Waste Calcining Facility where remote-handled (RH) transuranic (TRU) waste drums are staged for processing. The RCT noticed a drum within a posted radiation area (RA) boundary labeled as containing a neutron radiation source. The RCT used a neutron survey meter and determined that the neutron dose rate at the posted RA boundary was 35 mrem/hr and the beta-gamma dose rate was 4 mrem/hr. An investigation found that the drum was placed in CPP-1659 in October 2019 and the boundary was posted as a high radiation area (HRA) to account for the neutron source. Sometime after the initial posting as an HRA, routine beta-gamma surveys of the area continued but the neutron surveys were dropped. In December 2020, while electricians performed work in CPP-1659, an RCT collapsed the HRA boundary without accounting for the dose contribution from the neutron source. Fluor Idaho radiological protection incorporated neutron-sensitive chips in all Idaho Cleanup Project optically stimulated luminescence dosimeters in January 2020 to measure neutron doses. Thus, according to Fluor Idaho, neutron doses to personnel that entered the area can be determined.