

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 6, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Timothy L. Hunt, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for November 2019

DNFSB Staff Activity: Board's staff member T.L. Hunt was on site from November 4-6, 2019, providing routine oversight of ongoing INL activities.

Breached INL Waste Drum Found at Waste Isolation Pilot Plant (WIPP). On November 2, a 55-gallon drum of organic sludge received from INL was found by WIPP inspectors to have a roughly 3-4 millimeter hole in a corroded area of the drum exterior. Radiological surveys did not detect any contamination on the drum or in the surrounding area. The drum was packed with waste at INL in 2014, remained in storage for ~5 years, became part of a 14-drum payload assembly in September, and was shipped to WIPP on October 23. CCP-TP-033, *Shipping of CH TRU Waste*, provides criteria on how much corrosion (and other damage) is tolerable while maintaining the integrity of the drum, however, the decision on how much rust on a container is acceptable to qualify as a "sound" container is still largely subjective. Fluor Idaho corrective actions included checking the waste drum inventory for suspect corrosion and evaluating and refining the criteria in the drum inspection procedure for shipping and accepting corroded drums. Carlsbad Field Office (CBFO) management suspended direct drum shipments of waste streams S3000 and S3114 from INL immediately after discovering the breached drum but has since allowed shipment of these waste stream drums in ten drum overpacks and standard waste boxes.

Extreme Cold Temperatures Rupture Fire System Components. Two dry pipe sprinkler system valves at the Transuranic Storage Area-Retrieval Enclosure (TSA-RE) ruptured due to extremely cold temperatures. Winterization of the system, which is located in a typically unheated area of TSA-RE, was scheduled to take place in early-October but was delayed due to a modification being made to the preventive maintenance (PM) procedure. During the week of October 28, the INL site experienced historically cold October weather (i.e., well below 0° F). The events occurred subsequent to the deep freeze during the PM to air purge all eight low point drain systems of condensate. A low point drain valve released condensate through a crack on October 30 and another low point valve spewed water through a valve breach on November 1. The 5000 gallons of water that was released in the two outflows was captured in the fire water collection system and, although it was expected to be radiologically clean, was to be surveyed. Contributing to the event, an inexperienced maintenance worker failed to follow the procedure (i.e., did not drain all dead legs). Corrective actions include revising the job plan to schedule the PM earlier in the fall and modifying the work order to better control the process.

Injury During Maintenance Activity. Two maintenance workers were troubleshooting a blower motor at ARP II that was suspected of having bad bearings. A lockout/tagout was applied to secure electrical power and the blower dampers. The blower and motor shafts were not immobilized, however, to allow for bearing manipulation/inspection. One of the mechanics grasped the pulley that connects the motor and blower to get the shafts rotating as part of an assessment of the bearings. The mechanic's gloved hand was drawn into the pulley, breaking the middle and ring fingers. The fact-finding concluded that the hazards evaluation did not consider the added hazards introduced by manually moving the shafts with the pulley.