

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 5, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Erin A. McCullough, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for July 2022

DNFSB Staff Activity. Three staff members observed the contactor and Department of Energy (DOE) readiness assessment activities in early July. Five staff members inspected flooding protection and surface water management structures at the Idaho Nuclear Technology and Engineering Center (INTEC) and Radioactive Waste Management Complex pursuant to an ongoing review. One staff member visited the Mackay Dam, a deteriorating upstream flooding hazard for INL facilities. Three staff members participated on the Probabilistic Volcanic Hazard Analysis Field Trip throughout southeast Idaho, where researchers identified and collected geological field data to better characterize potential INL facility vulnerabilities. Nine staff members attended a hybrid in-person and virtual interaction with DOE to further understand recovery efforts for the TRUPACT-148 waste drum shipping container containing a leaking drum.

COVID-19 Update. The Centers for Disease Control and Prevention COVID Data Tracker shows that all counties near INL facilities still have “Medium” COVID-19 Community Levels.

Integrated Waste Treatment Unit (IWTU) Readiness Assessments. From July 5-15, 2022, the IWTU Contractor Readiness Assessment (CRA) sought to demonstrate that operations and management personnel could safely perform radiological operations. The Board’s staff team observed multiple instances in which the procedures could not be worked as written. The DOE Readiness Assessment team may credit successful CRA activities in partial fulfillment of its own requirements. The DOE Readiness Assessment team plans to complete the remainder of field observations, document reviews, and personnel interviews the week of August 15, 2022.

INTEC Calcine Retrieval Project (CRP) Progress. The CRP engineering team continues to develop original technology and methods to retrieve calcined high-level waste from underground concrete structures or “binsets” at INTEC. The project includes a scaled binset mock-up to test surveillance and retrieval technologies that the engineering team developed. Currently, there are two viable prototypes for remote-controlled waste-retrieval arms. In September, the CRP engineering team intends to test a surveillance proof-of-concept involving an unmanned aerial vehicle (UAV) with light detection and ranging (LIDAR) capabilities. Using a UAV limits the need for personnel entries. The Board’s staff team noted that all CRP personnel appear conscientious of delivering meaningful results while meeting milestones.

Interaction for TRUPACT Shipment Returned to INL. As discussed in the July 2022 INL Monthly Report, WIPP personnel reported that they identified a small amount of free-standing liquid at the bottom of TRUPACT-148 (carrying six waste drums) and shipped it back to INL. Operators opened it on June 6, 2022, and collected samples of the liquid for laboratory testing. Although no laboratory results are available yet, the staff review team productively discussed potential origins of the liquid and pin hole leaks with DOE-ID and Idaho Environmental Coalition (IEC) personnel. The staff review team encouraged IEC personnel to consider utilizing additional readily accessible technology, such real-time radiography, to diligently investigate the incident.