DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 1, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: Mark T. Wright, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for November 2023

DNFSB Staff Activity. The Board's INL cognizant engineer held weekly meetings to maintain awareness of site activities, including attendance of fact finding and management review meetings for events that occurred on-site. A Board's staff review team also conducted a factual accuracy meeting for a fire protection review.

Update on the Integrated Waste Treatment Unit (IWTU) Outage. As noted in the September 2023 report, Idaho Environmental Coalition (IEC) personnel shut down IWTU during that month to address unexpectedly elevated mercury concentrations in the output of the granulated activated carbon (GAC) beds. During this outage, the GAC beds' media will be replaced, and other maintenance activities and design changes will be performed. Currently, the two GAC beds have been emptied of the used carbon media, inspected, and refilled with new media. IEC personnel selected a vendor to analyze numerous samples of the used carbon bed material to determine if any unexpected performance was occurring in the used media. This evaluation is expected to occur within the next few weeks. During the first waste treatment campaign, high Denitration Mineralization Reformer (DMR) bed differential temperature events occurred along with the waste feed nozzles clogging. This resulted in a reduced volume of waste treatment (see May through July 2023 reports). Testing of various waste blend simulants with a scaled DMR replica has been ongoing at an off-site facility to recreate this temperature effect and to develop potential mitigations. The test team completed one mitigation test and is analyzing the results. A second mitigation test is scheduled for December.

Update on Waste Drum Shipping Status from Advanced Mixed Waste Treatment Project (AMWTP). As noted in the September and October 2023 reports, INL personnel reduced the number of weekly shipments to the Waste Isolation Pilot Plant (WIPP) from twelve to seven during the month of October due to budgetary restrictions. INL personnel were able to adjust budget priorities, and shipments to WIPP were restored to twelve per week in mid-November. The Board's staff understand that going forward, some of the shipments will contain non-overpacked BN510 waste stream drums. Some of these drums are approaching their age limit to be shipped without overpacking, according to the current AMWTP long-term order (LTO), which was instituted after some drums leaked after shipping and were returned to INL (see November 2022 and May 2023 reports). INL plans to update the LTO to limit the age of non-overpacked waste in early 2024. The Board's staff plans to follow the evaluation of risk of shipping these older waste containers without overpacking.

Update on Waste Drum Count Discrepancy. The October 2023 report described a drum count discrepancy in a report sent to the Idaho Department of Environmental Quality (IDEQ). The Board's staff confirmed that no organizational changes to waste databases were made and waste inventories within the databases are still accurate. This error resulted from a simple mis-query of the waste database.