

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 7, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Erin A. McCullough, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for December 2021

DNFSB Staff Activity. The Board's INL cognizant engineer held weekly telephone calls to maintain awareness of site activities. None of the Board's staff members travelled to INL in December.

COVID-19 Update. The Centers for Disease Control and Prevention still identify the localities surrounding INL as having "high" community transmission levels. Department of Energy INL personnel confirmed that the Omicron COVID-19 variant has been detected within the local health district, though it has not impacted operations at INL.

Initial Notification Report – Integrated Waste Treatment Unit (IWTU) Rapid Shutdown System (RSS) Trip Due to High-High Feed Flow. On Christmas Eve the operators introduced simulant into the system per the Normal Operations procedure for the IWTU and discovered that the electrical indicators on the waste feed valves were installed backwards. While the operators mistakenly thought the waste feed valves were closed, they had actually initiated flow in the system, causing a momentary (~10 seconds) flow rate of about 1.85 gallons/minute through the valves. This exceeded the maximum allowable total flow rate of 1.6 gallons/minute permitted under a compensatory measure implemented as a result of an evaluation of the safety of the situation completed in response to an unreviewed safety question. Violation of a compensatory measure is a Technical Safety Requirement violation. A Rapid Shutdown System response automatically secured the simulant feed with about 0.44 gallons of simulant fed to the system.

Initial Notification Report – Idaho Nuclear Technology and Engineering Center Clothing Contamination at the Fuel Dissolution Process Area (FDPA). A maintenance technician discovered contamination on his scrubs near his shoulder after doffing his anti-contamination clothing while exiting the FDPA Crane Maintenance Area on December 20, 2021. Nasal swabs and a whole-body frisk after scrub doffing returned negative results for contamination. The approximate level of contamination was 12,000 dpm beta-gamma by field instrument count. A technician was not immediately available to perform gamma spectrometry of the contaminated scrubs due to contractor curtailment during the holidays. Gamma spectrometry isotopic analysis identified the source of contamination as Cs-137. Based on known field instrument over-response to Cs-137, the actual contamination level detected was about 4,000 dpm.

Deteriorating Condition of the Mackay Dam. The Big Lost River Irrigation District owns and operates the Mackay Dam, which is approximately 40 miles northwest and upstream of the Radioactive Waste Management Complex. Mackay Dam was constructed over a hundred years ago and is in a deteriorated condition. The May 12, 2021, IDWR Dam Safety Record of Inspection report found that "the toe of the dam continues to leak significantly" but rated the structure as suitable to continue impounding water. The Board's staff members are reviewing whether the Safety Analysis Reports adequately characterize risks that dam failure and other flooding events pose to INL facilities.