

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 3, 2023

**TO:** Katherine R. Herrera, Acting Technical Director  
**FROM:** Erin A. McCullough, Cognizant Engineer  
**SUBJECT:** Idaho National Laboratory (INL) Report for January 2023

**DNFSB Staff Activity.** The Board’s cognizant engineer attended regular calls with the Department of Energy Idaho Operations Office and Idaho Environmental Coalition, LLC, personnel. The cognizant engineer and another staff member observed weekend and backshift activities at the Integrated Waste Treatment Unit (IWTU) as it nears transitioning to radiological operations. Separately, another staff member observed waste handling and processing activities at the Advanced Mixed Waste Treatment Project.

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

**IWTU Clears Obstruction Stalling Facility Heat-up.** An obstruction developed in the IWTU Carbon Reduction Reformer Additive Feed Line that prevented the facility from further heat-up. The corresponding work order provided direction for use of a nitrogen lance, a vacuum, and a rod as options to clear the line. Although operators successfully removed the obstruction, the Board’s staff members are concerned about the potential for recurrence. A substantially similar issue occurred in 2014, and while nearly nine calendar years elapsed since then, the total facility run time for processing simulant waste feed is roughly nine months. IWTU personnel have revised and implemented the applicable operational procedure.

**Learning Culture Demonstrated throughout the Idaho Cleanup Project Following a Carbon Monoxide Personal Exposure.** The staff cognizant engineer observed effective sharing of safety lessons-learned, particularly about responding to an active alarm, after a recent entry explained a carbon monoxide exposure incident in the Occurrence Reporting and Processing System (ORPS). An industrial safety and industrial health (ISIH) specialist set-up a carbon monoxide monitor approximately three feet above a welding generator with an exhaust extension installed. Other personnel started the welding generator to test the configuration. After approximately five minutes, the carbon monoxide monitor alarmed, indicating levels above the threshold limit. The ISIH specialist went to check the carbon monoxide monitor and saw that it was reading 1,400 parts per million, spending less than a minute exposed in the affected area. Subsequent medical evaluations cleared the ISIH specialist for release without restrictions. Critically discussing safety topics in plan of the day, pre-job, and other briefs is a meaningful incident prevention approach.

**Probabilistic Volcanic Hazard Assessment (PVHA).** Safety basis documents for the Idaho Clean-up Project rely on natural phenomena hazard analyses that INL staff conduct for the entire site. This PVHA effort is identifying and characterizing the risks that multiple volcanic hazards near INL facilities pose. According to the *Working Meeting #4 Agenda* for January 16-20, 2023, project scientists are building models to address several volcanic hazards near INL facilities. Work accomplished includes extensive lava flow and tephra modeling throughout the region using codes and input parameters endorsed by the project scientists. Results from these calculations now reside within a “lava library” and “tephra library” that can be sampled for each facility.