

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 19, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Mark T. Wright, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for June 2024

DNFSB Staff Activity. The Board's INL cognizant engineer held weekly meetings to maintain awareness of site activities, including attending event fact findings, management reviews, integrated project team reviews, and facility plan of the day meetings.

Integrated Waste Treatment Unit (IWTU) Process Gas Filter (PGF) Outage. As noted in the March–May 2024 reports, IWTU is currently shut down to determine the cause of material bypassing the PGF and repair this equipment. IWTU personnel removed and inspected all filter bundles in the PGF then continued inspection of the vessel interior. From the bundle removal and vessel inspection, additional broken filter elements were found. Primarily, the identified broken elements were found in the bottom of the PGF vessel. IWTU personnel began removal of broken filter element pieces followed by inspection of the jet fluidizing membrane at the bottom of the PGF vessel for potential damage from the falling filter material, but so far have not yet identified any damage. IWTU engineers also assessed the removed filter bundles from the PGF. A definitive cause for filter element breakage could not be identified. IWTU Engineering is currently documenting potential causes with actions taken to address them. The prior plan to insert all new filter bundles in the PGF will be conducted in July 2024.

Damage to New Waste Calcine Facility (NWCF) Crane. On June 14, IEC personnel were using the valve cubicle crane (NCC-902) to adjust the position of a pre-filter door while re-installing it on a filter bank. An overload alarm for the crane activated, which prevented personnel from moving it again, even to relieve tension. IEC personnel opened the disconnect for the crane and installed an administrative lock. On June 17, while personnel were attempting to reset the overload condition and troubleshoot the problem, the lifting bale on the door broke. Upon later inspection, IEC personnel observed a visible kink and a small diameter reduction of the crane hoist wire rope. IEC personnel did not have access to crane drawings, which were expected to be in the crane electrical cabinet. IEC is developing corrective actions including reviewing the as-built drawings and updating the crane procedure for response to crane alarms.

Locked High Radiation Area (LHRA) Issues. Separate issues relating to LHRAs occurred at IWTU (June 5) and NWCF (June 27). At IWTU, the boundary of the LHRA around the PGF was expanded to the perimeter of the containment tent while a waste box containing PGF filter bundles was located inside the tent. After the box was removed, the boundary of the LHRA was contracted to its original position. However, the lock and sign at the PGF access ladder were discovered missing several days later. This was due to an errant log entry for the LHRA expansion, which did not properly update the movement of the lock location from the PGF entry to the outer containment entry. The next shift supervisor assumed that the log entry and position of locks was correct after the LHRA was contracted. No personnel entries were made into the LHRA while the lock was missing. IWTU personnel are developing corrective actions focused on ensuring shift turnover adequately addresses radiological posting changes. At NWCF, Balance of Plant (BoP) personnel entered an LHRA to inspect crane NCC-902. One team member did not don the extra electronic dosimetry required by the radiological work permit. This was discovered by a radiological control technician as the team was exiting the LHRA. All team members remained in the same area of the LHRA, and doses on other team members electronic dosimeters were as expected from surveys. This event is addressed in the monthly safety performance objectives, measures, and commitments report.