DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 7, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Timothy L. Hunt, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for April 2021

DNFSB Staff Activity: No staff members were on site during April 2021.

COVID-19 Update. INL entered Phase 2 of its Reconstitution Plan on June 3, 2020, and continued in Phase 2 throughout April 2021. The state of Idaho returned to Stage 3 of its Idaho Rebounds plan on January 29, 2021 and remained there during April 2021.

Roaster Oxide Reactions in Accelerated Retrieval Project (ARP) VIII. On April 24, 2021, the fire department (FD) responded in full personal protective equipment to ARP VIII to investigate the cause of a fire alarm. The response included entry into the airlock and review of camera images of the ARP VIII retrieval area. No fire or smoke was observed. The Radioactive Waste Management Complex fire protection engineer (FPE) and Life Safety were contacted but access to the fire watch camera history files of the video fire detection system is limited to the system engineer who was incommunicado. It is not uncommon for spurious video-based fire alarms to be triggered by high winds acting on the ARP structures. Based on the limited available information, the FPE assumed this was such a case. An impairment was processed and placed on the cameras and two-hour roving fire watches were initiated. The system engineer returned to work on April 26 and reviewed the videos from the weekend, identifying five separate, short-lived pyrophoric reactions involving roaster oxide waste (depleted uranium pieces and fines). All five reactions took place in a single tray that had been staged in a safety basis-compliant array in ARP VIII to await a roaster oxide processing campaign. The events are categorized as anticipated in the documented safety analysis and proper controls were in place to limit a potential fire spread.

Integrated Waste Treatment Unit (IWTU) Preparations for Readiness Activities. On March 31, 2021, Fluor Idaho issued its management self-assessment report for the transfer of sodium-bearing waste from the Idaho Nuclear Technology and Engineering Center (INTEC) tank farm through the New Waste Calcining Facility to IWTU. This was the first activity in preparation for follow-on readiness activities and subsequent startup of IWTU processing operations. There were no findings, but the report cites numerous operating procedure observations and opportunities for improvement. The contractor and DOE readiness assessments following Outage J and prior to the start of the confirmatory run will both include this IWTU and INTEC interface during their assessments. Outage J is currently scheduled to complete this summer.

Fluor Idaho has requested and received another 90-day extension to implement the revised IWTU Safety Analysis Report (SAR), Technical Safety Requirements (TSR), and Evaluation of the Safety of the Situation (ESS). DOE had approved the revised SAR and TSR documents as well as the ESS via a Safety Evaluation Report on November 10, 2020. An initial 90 day extension was granted in January 2021 and this second extension is needed due to ongoing COVID impacts that have significantly impacted the Outage J work scope necessary to complete implementation. The extension revises the full implementation date to July 8, 2021.