

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 6, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Bradford V. Sharpless, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for June 2018

DNFSB Staff Activity. Board's staff member R. Quirk was on site at INL during June 11–15, 2018. He observed activities associated with the recovery from an event in which material was ejected from repackaged waste storage drums at the Radioactive Waste Management Complex's Accelerated Retrieval Project (ARP)-V facility in April 2018. He also observed operations at the Integrated Waste Treatment Unit and conducted general safety oversight. Board's staff member S. Thangavelu was on site during June 19–22, 2018, to observe a "Chemistry Summit" related to the ARP-V drum event. The Board's staff provided an average of 1.33 person-weeks per month of on-site oversight for the first nine months of fiscal year 2018.

Advanced Mixed Waste Treatment Project (AMWTP): On June 5, 2018, an Operator Technician (OT) was performing a mass control area criticality cleanout evolution in AMWTP's Supercompactor glovebox. As the OT was scraping residue off the Supercompactor trolley, the OT felt a sting on the back of her forearm and promptly pulled her arm out of the glovebox glove. A supporting Radiological Control Technician (RCT) identified that the OT had a small puncture wound on her forearm. While the RCT's initial survey did not detect any contamination in the wound, the OT was ultimately transferred to the Idaho Falls Medical Center for an additional wound count. On June 6, 2018, the additional wound count and radiological dose calculations showed that the OT had received a dose that exceeded Fluor Idaho, LLC (Fluor Idaho), administrative control limits. The Fluor Idaho Program Manager declared a stop work on all glovebox and size reduction activities at Idaho Cleanup Project core facilities pending the identification and implementation of corrective actions.

Idaho Nuclear Technology and Engineering Center (INTEC). On June 19, 2018, the INTEC Balance-of-Plant Nuclear Facility Manager declared a Potential Inadequacy of the Safety Analysis (PISA) for the SAR-105, *Safety Analysis Report for the Calcined Solids Storage Facility* [CSSF]. Fluor Idaho nuclear safety analysts previously identified the potential for a heavy load (in excess of 115,000 lbs.) to cause damage to CSSF storage vault 1 if placed within 36 feet of the vault. A control was put into place to keep heavy equipment outside the 36 foot boundary, but the PISA process was never used to evaluate the new hazard. After the PISA was declared, nuclear safety analysts identified a positive Unreviewed Safety Question for SAR-105 on June 28, 2018. The nuclear safety analysts will further evaluate the identified hazards by completing a formal evaluation of the safety of the situation.

ARP-V Chemistry Summit: Department of Energy (DOE) and Fluor Idaho personnel conducted a Chemistry Summit during June 20–21, 2018, at INL. The purpose of the summit was to review the data obtained from the laboratory analyses of material samples collected from drums involved in the exothermic and over-pressurization event at ARP-V that occurred during April 11–12, 2018. Subject matter experts in various chemical and material science disciplines used the analytical data to discuss hypotheses regarding what caused the ARP-V incident. DOE and Fluor Idaho managers intend to issue a technical report in response to the new data.