

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 1, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Timothy L. Hunt, Acting Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for February 2019

DNFSB Staff Activity. Board's staff members did not conduct any on-site activities during February 2019. The Board's staff has provided an average of 1 person-week per month of on-site oversight for the first five months of fiscal year 2019.

Integrated Waste Treatment Unit (IWTU) Status. In early-February, Fluor Idaho began a process system heatup in support of the next 50-day non-radiological test. With the denitration mineralization reformer (DMR) and carbon reduction reformer (CRR) at normal operating temperatures, operations was preparing to shift to Operations Mode. On February 20, an unexpected power outage (see next item) within Idaho Nuclear Technology and Engineering Center (INTEC) initiated multiple rapid system shutdowns at IWTU. Plant personnel must complete certain safety-related actions to recover from a loss of power event; therefore, they are cooling the plant down. A recovery schedule has been developed, which includes several vessel inspections, potentially including a thorough inspection of the CRR.

INTEC Power Loss Event. On February 20, INTEC experienced a power outage, which adversely affected IWTU operations. IWTU entered a limiting condition for operation (LCO) due to the power outage affecting a facility ventilation exhaust blower. At the time of the power loss, IWTU was in Warm Standby Mode with the DMR and CRR at normal operating temperature and pressure. The power outage resulted in multiple rapid shutdown system events at IWTU that caused the fluidizing gas and process off-gas blowers to be secured. Within two hours, IWTU had returned another ventilation exhaust blower to service and exited the LCO.

Battelle Energy Alliance (BEA) Power Management was conducting routine maintenance on a breaker within Substation 2, for which BEA is responsible. INTEC Power Operations (IPO) is responsible for all electrical power distribution, operations, and/or maintenance within INTEC. Fluor Idaho management believes that the INTEC power outage was due to IPO operator error; however, the IPO operators insist that the human-machine interface line-up was correct. Of note, the 20 year old INTEC utility control system software is scheduled to be replaced this fiscal year. Fluor Idaho has implemented an additional procedure step—IPO operators must now visually verify breaker position at the breaker. Other corrective actions may include improving site communications regarding status of facilities' electrical power line-ups and consideration of suspending maintenance related to the substation feeding IWTU during heat-up and operations.

Accelerated Retrieval Project (ARP) Safety Basis. On February 25, DOE-ID approved ESS-137, *Evaluation of the Safety of the Situation for the Drum Event at ARP V*, Revision 1, via a safety evaluation report (SER). The ESS addresses the resumption of operations at ARP V and SRP work in ARP VII, under specified operational restrictions. The SER identified a condition of approval that ARP V will resume processing—utilizing the operational restrictions to preclude a repeat event—of the remaining 27 trays of processed waste in the Retrieval Area, 4 overpacked event drums, 15 collection drums from vacuuming activities, and the 37 unprocessed drums still in the facility.