DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 3, 2017

TO: Steven Stokes, Technical Director
FROM: Bradford Sharpless, Idaho Cleanup Project Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for October 2017

DNFSB Staff Activity. Board's staff members F. Bamdad and B. Sharpless were on site at INL during October 16–20, to conduct a review of the safety basis at the Integrated Waste Treatment Unit. Board's staff member R. Quirk was on site at INL during October 16–20, to conduct general safety oversight. The Board's staff provided an average of 3 person-weeks per month of on-site oversight for the first month of fiscal year 2018.

Advanced Mixed Waste Treatment Project (AMWTP). At 4:00 PM on October 5, 2017, the Department of Energy's Facility Representative received notification that a large item had fallen from the table saw in AMWTP's hot maintenance cell while workers were repositioning the item. Workers made an entry into the cell to continue size reduction operations on the large item, weighing approximately 900 pounds. Two lifting magnets, rated at approximately 1200 pounds each, were placed on the item to lift and reposition it. The crane operator began to lift the item, when one of the magnets released from it. The aft end of the item rolled off of the saw table and fell to the floor of the hot maintenance cell.

Upon hitting the floor, the item cut one worker's breathing airline. The worker immediately identified the loss of air and began to egress the area while attempting to activate the emergency egress bottle. The worker was unable to quickly actuate emergency breathing air and made the decision, per procedure, to break the respirator seal (inside the bubble suit) and to take a breath within a few feet of the cell's exit. Upon reaching the exit, outside support personnel actuated the worker's emergency air, resuming the flow of breathing air. All other personnel in the cell conducted a normal egress from the area and notified the Plant Shift Manager and Nuclear Facility Manager (NFM) of the situation. Following the egress, Radiological Control Technicians performed extensive radiological surveys on the worker who lost breathing air. They did not detect any radiological contamination above background levels.

During a subsequent fact-finding meeting, the following information was determined:

- Workers moved the item three previous times using the same equipment without issue.
- Emergency egress procedures had been discussed during the evolution's pre-job brief.
- No workers were near the load while being moved.
- The lifting magnets had been inspected prior to use at the beginning of the shift, as required.
- The magnets were in full contact with the item when lifting began.

The NFM directed that hoisting and rigging using lifting magnets be secured until AMWTP's engineers could perform an evaluation of the equipment and determine what caused the lifting magnet to release unexpectedly. Work in the hot maintenance cell was suspended until the damage to the floor resulting from the large item's impact could be repaired.