

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 4, 2015

MEMORANDUM FOR: Steven Stokes, Technical Director
FROM: Bradford Sharpless, Idaho Cleanup Project Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for August 2015

Board's staff member B. Sharpless was on site during August 17–21, to conduct oversight of activities at the Integrated Waste Treatment Unit (IWTU). Board's staff member R. Daniels was on site on August 31, to observe the Department of Energy Readiness Assessment at the Advanced Mixed Waste Treatment Project (AMWTP) for startup of high fissile gram equivalent operations. The Board's staff provided an average of 1.8 man-weeks of on-site oversight per month for the first 8 months of 2015.

Integrated Waste Treatment Unit. On August 13, 2015, while performing system function testing using waste simulant, operators at IWTU noted that differential pressure readings across the Process Gas Filter (PGF) were not responding to sonic pulses as expected. The sonic pulses, generated by blasts of nitrogen, are designed to shock process material loose from the filter elements. Initially, it was suspected that material was not transferring out of the PGF vessel and managers made the decision to shut down the plant to inspect the filter.

After shutting down and cooling down IWTU's processing systems, workers opened the PGF's lower hatch and conducted a visual inspection of its interior. They found that process material had been transferring from the PGF vessel, but its individual filter elements were coated with an agglomerated white carbonate powder. This coating of powder prevented gas from flowing freely through the filter elements, generating the high differential pressure indications.

Workers attempted to clean the filter elements with pressurized water. However, they found that they could not adequately reach all remote surfaces with the water. Ultimately, workers filled the PGF vessel with dilute acetic acid, allowed the acid to react with the powder on the filter elements overnight, drained the vessel, and flushed it with fresh water. IWTU's processing systems are being prepared to resume performance testing.

Advanced Mixed Waste Treatment Project. Two instances of workers failing to use required personal protective equipment occurred at AMWTP in August. These instances are described as follows:

- On August 16, a Radiological Control Technician (RCT) entered AMWTP's Retrieval Containment Enclosure (RCE) without filter cartridges in his Powered Air Purifying Respirator. After the RCT had been in the RCE for approximately 30 minutes, the control room operator visually observed that the RCT's filters were missing. The control room operator then ordered all personnel to exit the RCE.
- On August 23, an Industrial Safety representative observed a maintenance technician working outside of a scissor lift at a height of approximately 14 feet without using fall protection. Although this work did not require a formal work package, the use of fall protection under such circumstances is required by facility maintenance procedures.