

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 5, 2017

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

DNFSB Staff Activity: Board's staff member R. Quirk was on site at INL during April 3–7 to conduct general safety oversight. While on site, the activities he observed included workers at the Advanced Mixed Waste Treatment Project (AMWTP) loading transuranic (TRU) waste into TRUPACT-II shipping packages. The Board's staff provided an average of 1.6 person-weeks per month of on-site oversight for the first six months of fiscal year 2017.

Radioactive Waste Management Complex (RWMC). On April 4, workers were repackaging sections of a Plutonium-238-contaminated glovebox in the Waste Processing Containment (WPC) tent at RWMC's Accelerated Retrieval Project-VII. While conducting this work, the derived air concentration (DAC) began to rise rapidly. Personnel inside the WPC were notified of the situation and performed an orderly egress within 15 seconds. Airborne contamination continued to rise for approximately five minutes and peaked at 36,000 DAC.

During the doffing of two sets of personal protective equipment and a respirator, a worker spread contamination to the upper sleeve of his contractor-provided modesty garment. Radiological Control Technicians took appropriate actions and the worker subsequently cleared a personnel contamination monitor scan. Three workers were directed to undergo bioassays as a precautionary measure. Workers took appropriate actions to stabilize the contamination in the tent. The contractor determined that the cause of the contamination spread was a failure to apply fixative to the interior of the outer box containing the glovebox sections and incorrect assumptions about the application of fixative by a relieving work crew.

Transuranic (TRU) Waste Shipments. On April 6, a shipment of TRU waste departed AMWTP with the Waste Isolation Pilot Plant (WIPP) as its destination. This was the first TRU shipment from INL to WIPP in nearly three years. Under the terms of the 1995 Idaho Settlement Agreement, the Department of Energy (DOE) is required to remove all TRU waste from INL by the end of 2018.

Integrated Waste Treatment Unit. On April 27, IWTU's Nuclear Facility Manager (NFM) notified IWTU's DOE Facility Representative that he had declared a potential inadequacy of the safety analysis (PISA) due to the discovery of a non-conservative assumption in the hazard analysis for a waste feed tank (WFT) breach event. The hazard analysis in IWTU's safety basis uses an ARF*RF ((airborne release fraction) x (respirable fraction)) value for a WFT breach event that is based on a 3-meter fall height. The fall height from an actual WFT breach would be higher.

The NFM directed the implementation of a compensatory measure requiring that the waste feed valve (HV-SRC-131-009) remain shut, preventing the introduction of radioactive sodium-bearing liquid waste to the WFT. IWTU remains in SHUTDOWN mode.