

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 5, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Alexander Velazquez-Lozada, Cognizant Engineer
SUBJECT: Waste Isolation Pilot Plant (WIPP) Report for September 2018

DNFSB Staff Activity: A. Velazquez-Lozada visited a test facility in Grand Junction, CO to observe a scaled test of the salt reduction unit (SRU) component of the Safety Significant Confinement Ventilation System (SS CVS). There were no staff visits to WIPP this month. Staff oversight during fiscal year 2018 averaged to 1.9 person-weeks/month.

Waste Management. The Board's staff and WIPP personnel discussed the unloading and subsequent processing of radium-rich waste from the Oak Ridge National Laboratory (ORNL). The WIPP Waste Acceptance Criteria (WAC) and the Hazardous Waste Facility Permit (HWFP) define limits on the amount of external removable alpha contamination. When the ORNL drums were unloaded at WIPP, many exceeded the limits in the WIPP WAC and HWFP, due to the presence of what has been identified as radium progeny. The WIPP Technical Safety Requirements require verification of compliance with the WIPP WAC. The Board's staff continues to evaluate technical safety requirement (TSR) compliance data.

Underground Ventilation. NWP paused work after a worker felt ill while doing ground control work near panel 7 in the underground. Potential causes of his distress included heat stress and underground air quality. Later, a second incident occurred during which a worker became ill after working near panel 7. There are indications that the worker might have been exposed to high levels of nitrous oxides. WIPP is evaluating both cases. Low airflow conditions remain a significant underground worker safety challenge. NWP is evaluating options to increase the underground air flow before the SS CVS is completed and operating.

Maintenance and Inspection. In a letter dated September 24, 2018, the Board communicated concerns with the maintenance process at WIPP. The Board's staff identified more than 40 TSR-related non-compliances in WIPP maintenance procedures. The Board also identified problems with maintenance of underground vehicles. In addition, the Board found that WIPP has not validated current preventive maintenance procedures to ensure a technical justification is developed and documented for any deviations from the vendor's recommendations. These problems could affect the performance and reliability of various safety systems.

Implementation Validation Review (IVR). As reported in July, an IVR team assessed the implementation of the major changes in Revision 6a of the Documented Safety Analysis (DSA) and TSR. In their final report, the IVR team found: configuration management and change control associated with the safety basis revision implementation were incomplete; DSA/TSR procedures were not marked in accordance with the procedure writer's guide; two procedures did not accurately reflect TSR requirements; not all personnel attended formal training; procedure training was conducted using the an informal program; a condition of approval for fire barriers in the waste handling building was not scheduled to be completed by the required completion date; and knowledge of the safety basis was weak.