

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 6, 2018

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

**DNFSB Staff Activity:** L. Schleicher visited the site to complete General Employee Training. Staff oversight during FY-2018 has averaged 1.95 person-weeks/month.

**Waste Management.** WIPP continues to receive shipments from Idaho National Laboratory and Oak Ridge National Laboratory (ORNL). Shipments from ORNL continue to have elevated radiological readings of swipe samples upon opening the shipping container. The waste from ORNL consist of several drums with significant concentrations of radium and its decay products (progeny). One of the radium progeny is radon gas, which passes through the drum filters and accumulates in the shipping container. The radon gas subsequently decays, yielding ionized particulate that clings to the plastic stretch wrap around the drums. The ionized particulate on the plastic undergoes alpha decay, which is detected when the shipping containers are unpacked. These elevated radiological readings exceed the contamination levels in the WIPP waste acceptance criteria (WAC). Although there is no evidence that this is a significant nuclear safety hazard, compliance with the WAC is required by the WIPP safety basis.

**Electric Distribution.** After three months of being down, the WIPP Plant Substation Bus-B was re-energized. Nuclear Waste Partnership, LLC (NWP), has not formally documented the problem and corrective actions, which might aid NWP in avoiding a recurrence of this event. During the month of June, at least one of the two diesel generators was operable, thus providing the capability of supplying back-up power.

**Work Control and Maintenance.** Operators identified that the differential pressure (DP) across the underground ventilation system (UVS) filters increased significantly during a period of a few days. NWP operations, maintenance, and work control personnel responded to the increased DP and replaced the filters ahead of schedule. Carlsbad Field Office (CBFO) staff reported that NWP completed the replacement without incident and DP has returned to the expected range.

**UVS.** CBFO sent a letter directing NWP to address several problems with the UVS including ventilation flow rates being less than the design values and airflow directions not being fully understood in the underground. The letter notes that the problems are associated with the air quality issues for underground workers that have been known for some time but have not been adequately addressed after less formal communications were sent to NWP. The ventilation flow direction is also key to reducing the risk of radiological exposure to workers during accident conditions. CBFO specifically directed NWP to identify the causes of circulating air currents, verify that air flows in the mine ventilation plan are correct, and demonstrate the air monitoring program can accurately determine the necessary air flow for underground activities.

**Safety Significant Confinement Ventilation System (SSCVS).** On June 14, WIPP began construction of the SSCVS. The SSCVS system should provide sufficient airflow for the planned increases in mining and waste disposal operations.