

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 1, 2017

**TO:** Steven Stokes, Technical Director  
**FROM:** Leigh Lin, WIPP Cognizant Engineer  
**SUBJECT:** Waste Isolation Pilot Plant (WIPP) Report for August 2017

**DNFSB Staff Activity:** L. Lin was on site performing routine oversight and for training August 8-10. A. Velazquez and A. Martin were on site to observe the External Independent Review of the safety significant Confinement Ventilation System Project Critical Decisions 2/3 August 8-9. R. Quirk, K. Deutsch, and L. Lin were on site to conduct a review of the safety significant Bulkhead 308 differential pressure loop and perform routine oversight August 28-31. Staff oversight during FY-2017 has averaged 3.3 person-weeks/month.

### **Potential Inadequacy in the Safety Analysis (PISA) Determination - Use of Facility Pallets.**

On August 17, WIPP concluded that the failure to use facility pallets during portions of waste emplacement activities was a PISA. The safety basis credits steel facility pallets for shielding waste containers from direct flame impingement, thus mitigating the radiological consequences for a pool fire event. The current practice is to move the waste with two diesel-powered forklifts from the waste transporter to the waste face, a distance of approximately 1,000 feet, without the waste being on a facility pallet. On August 28, the contractor determined the PISA was not an Unreviewed Safety Question. The determination was based on other representative events—where facility pallets are not in use—bounding the consequences. For these events, mitigation is provided through underground filtration.

**Panel 8 Roof Fall.** On August 18, workers discovered there had been a roof fall in Panel 8, between Rooms 1 and 2, in the underground. Access to the fall area was already prohibited because of ground control concerns, so there was no threat to worker safety. This fall was caused by delamination of the lowest most layer in the back. It could have been prevented had the area been spot bolted to prevent delamination prior to the February 2014 events. The contractor had begun mining of Panel 8 in 2013, but no spot bolting had been performed prior to the 2014 event. After the 2014 event, mining in Panel 8 was halted and no ground control has been performed in Panel 8.

**Prior Roof Falls.** Carlsbad Field Office (CBFO) oversight staff are concerned that a thorough investigation was not performed by the contractor to identify the cause of previous roof falls (e.g., Panel 3 and 4 access drifts in September and October 2016 and Panel 7, Room 4 in November 2016), nor actions taken to prevent recurrence.

**Automatic Fire Suppression Systems (AFSS).** More than three years following the February 2014 truck fire, WIPP continues to experience repeated problems with properly installing AFSS on underground liquid fueled vehicles. The most recent failure involved an incorrectly installed compression fitting that ruptured during testing of the system.

**Workshop on Ventilation, Mining, and Ground Control.** A workshop was held in Carlsbad on August 15 to discuss the current status and future direction of WIPP ventilation, mining, and ground control. The Board's staff is reviewing copies of the workshop presentations.