

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 1, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Alexander Velazquez-Lozada, Cognizant Engineer
SUBJECT: Waste Isolation Pilot Plant (WIPP) Report for January 2019

DNFSB Staff Activity: R. Quirk and D. Brown provided routine oversight. Staff oversight during fiscal year 2019 averaged to 1.5 person-weeks/month.

Maintenance Outage: WIPP conducted a planned three-week maintenance outage, which included a five-day site-wide electrical outage. Nuclear Waste Partnership, LLC (NWP), performed maintenance on the waste hoist tail ropes and on a ventilation outlet damper of a 860 fan of the underground ventilation system; annual preventive maintenance on the waste and salt shaft; and ground control in Panel 7. During the electrical-outage, NWP removed unused current potential transformers (CPT) from Bus A. These correspond to the abandoned-in-place CPT that failed last spring, causing an unplanned electrical outage involving Bus B, followed by three months of operation with a less reliable electrical power configuration, as reported in the WIPP Monthly Reports for March and June 2018. NWP implemented a radiological monitoring plan during the electrical outage, which included covering shafts to avoid upcasting of potentially contaminated air; deploying portable continuous air monitors and portable electric generators; and sampling using large area swipes to detect radioactivity around the shafts on each work shift.

Underground Air Quality: Carlsbad Field Office (CBFO) approved the WIPP “Hazard Abatement Plan-Nitrogen Dioxide (NO₂)”, submitted by NWP to comply with the updated “2016 American Conference of Governmental Industrial Hygienists” standard listed in Title 10, Code of Federal Regulations, Part 851.23. CBFO approved the plan with the condition that NWP save all the data from monitoring instrumentation. The updated standard reduces the Threshold Limit Value-Time Weighted Average (TLV-TWA) for worker exposure to NO₂ from 3.0 ppm to 0.2 ppm. NWP submitted the abatement plan because they were not able to comply with this standard by the compliance date of January 17, 2019, mainly because they must continue to operate diesel equipment in the reduced ventilation environment of the underground. NWP plans to gradually reduce the allowed NO₂ levels in the underground until they meet the new allowable limit in late 2022, which is when the new safety-significant confinement ventilation system is expected to be operational. The NWP abatement plan implements short, interim, and long-term actions to reach the new allowable limit. Short terms actions include implementing an NO₂ sampling plan; sealing air leakage around bulkheads; implementing localized ventilation controls for bolters; using portable and auxiliary fans; and using cleaner-burning synthetic diesel fuel. As part of the interim actions, NWP plans to reduce worker exposures to NO₂ by revising administrative and engineering controls as necessary. The long term plan is to replace selected diesel equipment with all electric or hybrid units.

Safety Significant Controls: NWP plans to hold a fact-finding meeting and issue an engineering document to capture information related to the failure of the safety-significant Safety Instrumented Alarm System (SIAS) in the Central Monitoring Room (CMR) alarm panel, as reported last month. The Board’s staff plans to review this information when available.