

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 1, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Erin A. McCullough, Cognizant Engineer
SUBJECT: Waste Isolation Pilot Plant (WIPP) Report for February 2024

DNFSB Staff Activity. During the week of February 19, 2024, the Board's cognizant engineer visited WIPP for facility walkdowns and training. The Board's staff are evaluating potential nuclear safety impacts associated with the Salt Handling Shaft structural condition.

Water Intrusion at the Utility Shaft Construction Project. The Utility Shaft is approximately 2,275 feet deep, passing through limestone, dolomite, potash, and salt geological layers. Near approximately 800 feet deep, there is a fractured dolomite layer 20 feet thick. This dolomite layer is above the salt seam into which the waste repository is mined and is a known pathway for ground water intrusion. At about 780 feet deep, water continues to flow into the Utility Shaft through a joint in the concrete liner at a reducing rate, currently about 1.3 gallons per minute. Harrison Western Shaft Sinkers, LLC (HWSS) personnel plan to repair the opening in the liner. During the week of February 19, 2024, HWSS personnel began removing accumulated water that was at a depth of 34 feet in the shaft sump. The pumping campaign finished on February 24, 2024, after removing approximately 140,000 gallons of water. Since salt dissolves in water, CBFO personnel asked whether the shaft sump would be structurally competent after all the water is removed. Geotechnical inspections of the shaft will occur when it is safe and accessible.

Two Miners become Stuck in the Waste Hoist. On January 23, 2024, the man cage in the Waste Hoist stopped working 1,500 feet below the surface with two miners inside as it was traversing to the underground. Site personnel determined that an erroneous digital signal caused a breaker to trip, resulting in a complete loss of power to the controller. The hoisting braking system, comprised of four safety significant components credited in the Documented Safety Analysis, actuated as designed upon the loss of power to stop the man cage. Within thirty minutes of the issue developing, operators successfully lowered the cage to the underground. Department of Energy (DOE) Order 232.2A, *Occurrence Reporting and Processing of Operations Information* establishes criteria for reporting events in the Occurrence Reporting and Processing System (ORPS). Under Subgroup B Criterion 3, site personnel must report an event in which there is "Actuation of a Safety Significant (SS) Structure, System, or Component (SSC), or its alarms as a result of an actual unsafe condition. Spurious alarms (e.g., due to electronic noise, radon/thoron decay) should not be reported." Salado Isolation Mining Contractors, LLC (SIMCO) leadership agree that actuation of a safety significant component occurred but contend that it was not due to an actual unsafe condition because food, water, and an eventual escape through dynamic lowering could have been made available to the miners. The Board's staff consider a loss of hoist control due to the power outage to be an unsafe condition that was properly mitigated by the credited braking system. It appears that this event should have been reported in the ORPS.

Salt Handling Shaft Refurbishment Update. SIMCO identified funds to begin structural repairs for the Salt Pocket within the Salt Handling Shaft. Designs, implementation plans, and specific timelines are available. Site personnel started the procurement process for materials.