

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 3, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Alexander Velazquez-Lozada, Cognizant Engineer
SUBJECT: Waste Isolation Pilot Plant (WIPP) Report for January 2023

DNFSB Staff Activity. The Board's staff participated in regular conference calls to maintain cognizance of site activities.

Waste Management. The Carlsbad Field Office (CBFO) released the 2022 Annual Transuranic (TRU) Waste Inventory Report. TRU waste inventory estimates at the generator sites change frequently due to retrieval, treatment, characterization, and shipping activities. Generator site updates are made annually. The 2022 report is based on the sites' estimated inventory as of December 31, 2021. Changes and improvements since the 2021 report affected the volume and the non-radiological and radiological characteristics of TRU waste streams. These changes were largely based on: completion of the Plutonium Finishing Plant demolition project at the Hanford Site, which resulted in the removal of estimated projected generation for affected waste streams; reassignment of TRU waste previously reported by Savannah River Site; improvements made to the algorithms and methodologies used to estimate waste characteristics for selected waste streams at Idaho National Laboratory, Los Alamos National Laboratory, and Hanford Site; and acquisition of new characterization data, processing information, and repackaging experience by multiple sites. This resulted in more accurate data and better estimates.

Fire Protection. WIPP personnel continue evaluating alternatives to safely manage electric vehicles powered by large lithium-ion batteries. Electric vehicles in the underground may introduce additional safety hazards. These hazards include fire, smoke, and combustion products, including hydrogen fluoride associated with the large lithium-ion batteries. These are different than hazards associated with diesel powered vehicles and electric vehicles not powered by lithium-ion batteries, which are controlled and mitigated differently. Some of the areas WIPP personnel are evaluating are lithium-ion thermal runaway and propagation, lithium-ion thermal runaway gas constituents, and battery fire emergency planning and actions.

As reported in the May 2022 WIPP Monthly Report, the underground fuel bay has been out-of-service due to an incident in which a dry chemical sensor was physically impacted and damaged. The WIPP contractor, Nuclear Waste Partnership, LLC (NWP), completed repairs and returned the fuel bay to service in this reporting period. As part of the repairs, NWP replaced piping, duct work, and the dry chemical. Reactivating the fuel bay significantly increases the efficiency of operations of underground equipment for mining, bolting, and other activities using diesel-operated equipment.

Mine Ventilation Plan. While reviewing the most recent update to the WIPP Mine Ventilation Plan, CBFO personnel noted that the maps accompanying the plan have not been updated as required to reflect the new exhaust path of Panel 8. WIPP began emplacing waste in Panel 8 in November 2022. CBFO is following up with the contractor to get the maps updated. These updates will affect the related abatement plan and hazard prevention plan.