

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 7, 2025

TO: Technical Director
FROM: Pantex Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending February 7, 2025

Electrostatic Dissipative Tiles: Early last month, PXD discovered that certain nuclear explosive transportation carts may be incompatible with the recently installed electrostatic dissipative (ESD) floor tiles. Subsequently, PXD issued a stop work event to prevent the use of these carts in facilities containing the ESD tiles (see 1/17/2025 report). This incompatibility can prevent the carts from properly grounding to the ESD tiles, potentially causing electrical energy to accumulate on the cart during use, creating an electrical potential difference with the surrounding environment, and leading to a subsequent discharge, as observed by the PXD technicians (see 1/10/2025 report). Of note, Pantex relies on ESD controls to prevent electrostatic discharge hazards to sensitive energetic components and certain nuclear explosives. Late last month, PXD Safety Analysis Engineering declared a potential inadequacy of the safety analysis (PISA) due to the potential for nuclear explosive transportation carts to become electrically isolated from the ESD environment. PXD determined this PISA represented an unreviewed safety question due to a possible increase in both the probability of an accident and safety equipment malfunction, including malfunctions of a different type than previously evaluated in the safety basis. Last week, PXD revised the stop work event to prevent operations on all electrostatic discharge sensitive weapon configurations from being performed in facilities with ESD tiles, pending a nuclear explosive safety evaluation later this month.

Safety Basis: Last month, PXD safety analysis engineering declared a PISA after they discovered that a new control may be required to mitigate the effects of potential drops of certain special tooling onto the nuclear explosive during disassembly operations. PXD initiated a stop work event to prevent further use of the affected nuclear explosive operating procedure until PXD updated the procedure to include an operational restriction requiring two technicians when removing this special tooling by hand. PXD personnel performed walkdowns of the applicable operations and determined that the drop height stated in the safety analysis was greater than necessary. After removing this margin from the safety analysis, PXD concluded that the applicable weapon response remained bounding and the PISA did not represent an unreviewed safety question, allowing removal of the operational restriction.

Unanalyzed Equipment: Last week, a PXD industrial safety specialist introduced a handheld radio into a nuclear explosive facility. Though the radio was turned off and the specialist did not go near nuclear explosive operations, PXD classified this event as having an adverse effect on nuclear explosive safety due to the presence of unanalyzed electrical equipment. During the event investigation, PFO personnel questioned the effectiveness of actions that PXD had previously taken for events that occurred for different onsite organizations. PXD noted that these actions included attaching stickers to the radios, noting that they are prohibited from nuclear explosive areas. As a result, PXD noted they will evaluate applying similar stickers to all handheld radios in an upcoming causal analysis. Additionally, PXD is planning to give refresher training to all industrial safety personnel pertaining to Technical Safety Requirements for material access areas and publish a sitewide lessons learned for this event.