DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 23, 2025

TO: Technical Director
FROM: Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending May 23, 2025

Surface Vehicle Hazards in Material Access Areas (MAA): In 2022, the Pantex contractor discovered nonconservative calculations had been used in the safety basis to analyze the effects of surface vehicle impacts to certain nuclear explosive facilities. The Pantex contractor determined this discovery represented an unreviewed safety question and received approval from PFO—through a justification for continued operations (JCO)—to continue operations by either crediting existing earthen berms or placing concrete barriers to physically prevent vehicle impacts to certain nuclear explosive facilities. Last month, PFO approved a safety basis change package that allows PXD to exit this JCO and remove the protective concrete barriers. PFO transmitted a safety evaluation report for these changes, stating that facilities previously protected by the concrete barriers would still have enough qualitative protection from surface vehicle impacts, that incapacitated drivers are no longer credible hazards, and that the earthen berm is now qualitatively credited to prevent all vehicular impacts from affecting these facilities. Additionally, PXD has redefined the *extra-heavy* category of vehicles allowed in the MAAs as *construction vehicles* (see 8/2/2024 report). This new category of vehicles has no restrictions on size or weight and encompasses all vehicles that aid in construction efforts. PFO asserts in its safety evaluation report that these *construction vehicles* do not pose an impact hazard to nuclear explosive facilities because they are assumed to move slowly enough on roadways that a driver would recover from any issues that may arise. The resident inspectors note that driver recovery may be limited for instances involving vehicle malfunctions or driver error. When the *construction vehicles* travel off roadways, PFO also asserts that in addition to slow speed, spotters aid in the placement of these vehicles to prevent facility impacts; however, PXD does not have a defined control within the safety basis that requires spotters for *construction vehicles*.

Transportation Vehicle Impacts Facility: Last week, during onsite transportation of a nuclear explosive, a PXD hazardous material transporter damaged the transport trailer by backing into the loading dock within a material access area, despite the use of a spotter. A PXD transportation manager notified the operations center of the event. The operations center then contacted nuclear explosive safety (NES) personnel. Following checks of the nuclear explosive securement on the trailer, the transporters continued to unload the unit. Subsequently, the NES personnel called the transporters at the loading dock and instructed them not to load any nuclear explosive into the damaged trailer. During the event critique, PXD stated that the trailer was misaligned with the loading dock, which caused the impact when the driver began to reverse the vehicle. Additionally, the PXD transporters stated they did consider initiating immediate action procedures per the transportation procedure, but determined the event did not meet entry criteria. PXD has identified that site procedures do not contain clear requirements for making safe and stable determinations during transportation activities. Separate from this event, PXD commenced a series of meetings to discuss the adequacy of the safe and stable determination process, along with the processes for initiating immediate action procedures and determining whether a unit is anomalous (see 5/9/2025 report). PXD plans to brief the transporters on expected actions for off-normal transportation events.