DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 22, 2025

TO: Technical Director
FROM: Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending August 22, 2025

Process Improvement—Unplanned Operational Events: Earlier this year, PXD began a series of meetings to discuss the adequacy of the processes for safe and stable determinations and immediate action procedures (IAP) (see 5/23/2025 report). Those meetings represented the beginning of an ongoing process improvement project, which includes response and recovery activities associated with unplanned operational events that are not otherwise covered in the Pantex Emergency Management Program. These events include utilization of IAPs, safe and stable determinations, and certain work pauses and stoppages, such as those instances that eventually require revised procedures and/or additional authorizations prior to resuming operations. IAPs are prescribed actions taken when certain unexpected conditions are encountered during nuclear explosive operations, and address one of the requirements listed in DOE Order 452.2F, *Nuclear Explosive Safety*—specifically, the requirement for procedures to "[i]nclude generic contingency procedures that are directed toward quickly achieving a safe and stable nuclear explosive configuration to be applied in response to all unexpected situations not covered by other written procedures." DOE Order 452.2F defines safe and stable as "[s]tabilization of [the] nuclear explosive to ensure it is placed in a configuration that precludes potential hazards from affecting the unit, using the minimum actions necessary." In general, at Pantex, IAPs include pausing the operation(s); establishing a safe and stable configuration with concurrence from relevant contractor organizations, such as PXD nuclear explosive safety (NES) and process engineering; and exiting the facility. However, the specific actions taken during IAPs, and the characteristics of safe and stable configurations, have been a point of contention during these meetings.

This process improvement effort is significant because it includes, or at least affects, processes that are used throughout Pantex for nuclear explosive, explosive, and special nuclear material operations. Stakeholders from multiple PXD organizations have participated, including representatives from production operations, disciplined operations, training and certification, NES, process engineering, and safety analysis engineering; additionally, both PFO personnel and the resident inspectors have attended these meetings. So far, PXD has clarified and mapped the current processes for unplanned operational events, as well as critiqued them to identify inefficiencies, points of confusion, and areas where additional guidance or clarification is needed. While this portion of the process may have taken more time than previously assumed, the resident inspectors note that these in-depth discussions have yielded valuable insight into addressing confusion and inefficiencies in the processes. Most recently, PXD has been outlining paths forward for the future state of these processes. This week, representatives from the NNSA Office of Stockpile Production Integration (NA-121), including the Director of the Nuclear Explosive Safety Division, were present to review and discuss the proposed paths forward to ensure that the IAP and safe and stable processes remain in alignment with the expectations and intentions of DOE NES requirements and guidance documents. The resident inspectors will continue to follow these process improvement efforts in the coming weeks.