

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 24, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending June 24, 2022

Special Tooling: Over the past few months (see 5/6/22 report), CNS discovered a number of instances where outside vendors instead used zinc-plated fasteners for special tooling they fabricated that was—according to supplied design definitions—supposed to be black-oxide high-strength fasteners. Both type of fasteners are high-strength varieties; however, the zinc treatment process can cause changes in the metallurgy of the fasteners which can lead them to be susceptible to hydrogen embrittlement.

Currently, CNS is conducting a more thorough extent of condition review where they developed a complete list of all special tooling with high-strength fasteners in the credited load path. CNS is actively checking special tooling on this list for inappropriate fasteners, including checking hidden fasteners that are not readily apparent by external observation of the tooling. The list has been provided to the Production Tooling department, and they are actively reviewing all tooling as it goes through periodic maintenance and certification. In addition, the CNS Receipt and Inspection department modified certain procedures and trained their inspectors on how to look for incorrect fasteners in new special tooling received from vendors.

Nuclear Explosive Safety (NES): Last week, an event occurred resulting in the violation of a NES requirement referred to as the two-person concept. This requirement ensures that no lone individual has unrestricted access to a nuclear explosive (NE), special components, and certain category 1 (CAT1) equipment that makes electrical contact with the NE for testing purposes. At the time of the event, the requirement was implemented using zone coverage with two trained, certified, and authorized technicians and applicable to all three of the items listed above.

After completing work in a bay facility—at a safe and approved stopping point—two production technicians (PT) and an NPO facility representative (FR) were confirming the status of the combustible loading in preparation to exit the bay. Intending to stay in visual contact with one another, one PT stayed with the FR in the bay proper, while the other PT opened an inner blast door, propped the blast door open with the attached kick-stop, and entered the equipment interlock. The doorstop was not engaged at the proper full open position of the blast door and slipped—leading to the blast door inadvertently closing—and resulting in a momentary violation of the two-person concept.

The PTs recognized the importance of the situation, remained in custody and in charge of the NE, and notified their supervisors. As required by NES, any loss of two-person concept necessitates any CAT1 equipment be tagged out by both PTs. This tagout process was performed properly. On Monday, a critique was held, resulting in corrective actions to include replacement of the tagged out CAT1 equipment with a NES approved copy, completion of a work order to repair the blast door kick-stop, and briefing the involved PTs on the proper kick-stop operation for this facility.