

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 27, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending May 27, 2022

Special Tooling: CNS continues to replace discrepant fasteners in the design load path of certain carts (see 5/6/22 report). Several more of these carts have been returned to service.

Last week, CNS discovered an additional vendor-fabricated special tool that used zinc-plated fasteners in the credited load path, as opposed to the black oxide fasteners specified by the tooling design specifications. The zinc-plated fasteners may be susceptible to hydrogen embrittlement and were not approved for such use. In response to this latest discovery, CNS conducted an extent of condition evaluation across all applicable facilities. Out of several thousand tools inspected, CNS identified eight additional tool designs (some with multiple copies) that contained the inappropriate fastener. Of those, half contained the zinc-plated fasteners in the credited load path. These discrepant tools were tagged out and removed from the facilities. CNS has scheduled a causal analysis for next week to determine additional actions.

Safety Basis: As part of an improvement initiative to weigh all special tooling and provide safety analysis engineering (SAE) with bounding weights, the CNS production tooling department continues to analyze actual tooling weights (see 10/29/21 report). Last week, CNS SAE declared a potential inadequacy of the safety analysis when a particular cart assembly was found to have a discrepant as-found weight when compared to the value recorded in the safety basis. This week, SAE determined that the new weight would result in a change in consequence for certain accidents, and therefore represented an unreviewed safety question. As an operational restriction while a permanent path forward is developed, CNS will require two technicians to move this cart assembly while it is within 6.5 feet of, and being moved toward, the workstand.

Two months ago, Pantex discovered that several copies of an unapproved handling gear (H-Gear) had been received and processed onsite (see 3/11/22 and 3/18/22 reports). Last week, NPO sent a letter to CNS identifying three additional performance problems that were not addressed during the investigation or critique for this event. First, NPO noted that the initial changes (made in 2020) to the applicable transportation procedure were incorrectly exempted from the unreviewed safety question (USQ) process, since the procedure is explicitly referenced in the safety basis and the changes were not approved by NPO before implementation. Second, NPO noted that the USQ documentation for two other relevant procedures contained incorrect and unsubstantiated information, including reliance on a non-approved safety basis change package and incorrect identification of the specific nuclear explosive types that the H-Gear would be used to transport. Third, NPO identified that CNS did not enter the problem identification and evaluation (PIE) process upon discovering that unapproved H-Gear containers were onsite two months ago; this new information should have triggered such an entry condition. NPO stated that failure to enter the PIE process meant that additional operational restrictions may not have been considered. The resident inspector notes that CNS is working with NPO to clarify which situations necessitate entering the PIE process. NPO's letter directed CNS to enter these three performance problems into its issue tracking database.