

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 6, 2022

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** A. Gurevitch, Resident Inspector  
**SUBJECT:** Pantex Plant Activity Report for Week Ending May 6, 2022

**Staff Activity:** D. Andersen, J. Anderson, and C. Berg were onsite to conduct walkdowns and support headquarters reviews. M. Bradisse augmented resident inspector coverage remotely.

**Special Tooling:** CNS uses external vendors to fabricate certain special tools using design specifications provided by the production tooling organization. One of the generic design documents provided to these vendors for all special tooling orders states that fasteners (e.g., socket cap screws) should be black oxide or bare metal, unless otherwise specified, to ensure the fasteners meet hardness and strength requirements. In addition, the paperwork for some past orders have explicitly stated that fasteners should not be zinc-plated. Over the past few months, CNS has discovered a number of instances where suppliers provided special tooling that used zinc-plated fasteners; as a result, the CNS production tooling organization has been performing a review to determine the extent of this condition.

This week, CNS discovered that multiple copies of a certain cart (i.e., a piece of special tooling with credited safety features) used for a specific weapon program included zinc-plated fasteners in the design load path. CNS has tagged out these carts and temporarily prohibited their use while their adequacy is evaluated. At the event investigation, participants noted that neither the initial receipt inspection nor the CNS tooling organization's quality assurance review discovered the discrepant fasteners; both of these failures were captured as gaps. At the critique, participants categorized this event as a noncompliance of a credited hazard control in the safety basis. CNS will schedule a causal analysis.

**Safety Basis:** Two months ago, CNS area mechanics were replacing an overhead pneumatic hoist followed by an annual preventive maintenance in a nuclear explosive bay. This work only involved a portion of the hoist hardware and utilized the existing pneumatic hoses. This month, as part of normal operations, production technicians were using the same hoist to move a component and noticed a small nut fell from the overhead hoist. The technicians stopped work, made the appropriate notifications, and took actions to place the component and work area in a safe and stable configuration. As part of these actions, the technicians were allowed to complete the hoist move and detach the component from the hoist. The hoist was then taken out of service pending repairs. At the same time, CNS personnel paused all operations involving pneumatic hoists with a similar configuration to perform an extent of condition evaluation to observe for other discrepancies, including missing nuts. This evaluation did not reveal any issues and hoist operations were permitted to resume in the other bays. A preliminary investigation of the initial hoist determined that the nut was likely a locking nut (i.e., second nut meant to prevent the first nut from unthreading) on an eyebolt for a guywire that supports the pneumatic hoses. At the critique, it was noted that the original maintenance work procedure did not specifically require the area mechanics to verify peripheral components that were not directly part of the work order. Critique participants categorized this event as a performance degradation of a safety system when required to be operable.