

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 6, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending January 6, 2023

Two-Person Concept Violation: Last week, two CNS facility representatives unlocked a nuclear explosive cell and entered the facility to check the condition of the emergency lights. Upon determining that these lights were not functioning—and would require a work order for crafts personnel to reset them—the two facility representatives exited the facility. At this time, one of the individuals applied their lock and secured the facility, while the second person began conversations with the crafts supervisor to discuss the emergency lights status and the work to be performed. Following this discussion, the second facility representative failed to apply their lock to the facility. As a result, the nuclear explosive cell was secured with only one lock, potentially allowing a single individual to access the facility. Crafts personnel responded to the cell approximately two hours later to reset the emergency lights and discovered the issue.

Unlike the previous event in December 2022 (see 12/9/22 and 12/16/22 reports), this nuclear explosive cell contained materials requiring two-person control. As a result, CNS categorized the incident as a violation of the two-person concept. In immediate response to the event, CNS ensured a second lock was applied to the facility and verified that no one entered the facility during the period when only a single lock was present. Furthermore, as a corrective action, CNS plans to brief all facility representatives and facility managers on the proper securing of facilities.

Conduct of Operations: Following certain disassembly operations in a cell, the production technicians paused operations to allow CNS process engineering, CNS tooling engineering, and design agency personnel to approach the nuclear explosive and assess a component defect. During this activity, the design agency personnel acquired an orange stick from the technicians to physically touch the unit and gauge the defect depth. They also brought a personal eye reticle magnifier up to the unit to assist in visual examination of the defect. When this occurred, an NPO facility representative questioned whether use of this equipment by design agency personnel—who are not certified to perform work on the nuclear explosive—was permitted.

The Pantex Technical Safety Requirements (TSR) state that only equipment that has been evaluated in the safety basis and is required by an approved process shall be brought near the unit. At the event investigation and critique, CNS safety analysis engineering personnel noted that the orange stick is evaluated by the safety basis and allowed per the current operating procedure. Additionally, they considered the magnifier to be a personal item, which is assessed within the safety basis. As a result, CNS decided that event did not constitute a TSR violation. However, from a nuclear explosive safety perspective, CNS personnel determined that (1) the magnifier is unanalyzed equipment and (2) the design agency personnel touched the unit without explicit written approval. Consequently, CNS categorized the incident as an event resulting in an adverse effect on nuclear explosive safety. In response, CNS plans to assess the process and clarify requirements for allowing personnel to perform inspections of nuclear explosives and associated components. Furthermore, CNS will brief all production technicians on expectations related to the two-person concept and not allowing unapproved operations.