DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 18, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending March 18, 2022

Conduct of Operations: Last week, while conducting operations in a nuclear explosive bay, technicians performed incorrect steps in a critical use nuclear explosive operating procedure. While on Step 29 of the procedure, the technicians encountered an option tree and selected the correct option, which directed operations to be continued at Step 34. After conducting other activities within the facility (e.g., initiating a non-conformance), the technicians inappropriately continued onto Step 31, directing manipulation of a weapon component. When different technicians entered the facility the next day, they noted that the component was in a different configuration than expected, paused operations, and made appropriate notifications. At the event investigation, participants identified that upon executing the option tree, the technicians should have implemented better place keeping (i.e., lined through the procedural steps that were not to be performed); this action would minimize the possibility of error. As the only corrective action for this event, CNS developed a path forward to continue operations with the affected unit.

Special Tooling: Last week, a problem occurred with a workstand in a nuclear explosive cell. Workstands are used to hold and manipulate components during the assembly and disassembly of nuclear weapons. While technicians were performing operations on a unit in the cell, the rotation feature of the workstand failed, leaving the unit held in an unanticipated orientation. However, the feature that supports the weight of the unit was unaffected. While the rotation mechanism is not required to be operable for this specific operation, it performs safety functions during other operations. Consequently, CNS categorized this event as a performance degradation of safety class equipment when not required to be operable. CNS personnel paused operations, evaluated the situation, and decided to lower the unit to the ground as part of placing the unit in a safe and stable configuration. Since this weapon program uses a unique workstand design and since this specific failure has never been seen before, CNS does not currently plan to perform an extent of condition to inspect other workstands. CNS is evaluating the failure and will develop a nuclear explosive engineering procedure to safely remove the unit.

Safety Basis: This week, CNS held a second critique (see 3/11/22 report) related to unauthorized handling-gear (H-Gear). Pantex received multiple nuclear explosives in an H-Gear revision used by the military, but not yet authorized at the site, resulting in a safety basis non-compliance. While in this instance, the differences between H-Gear revisions were not excessive, the event demonstrated gaps within the notification and authorization processes. Critique participants identified that the Sandia National Laboratories (SNL) notified the CNS transportation organization of the impending shipment; however, SNL did not notify other relevant CNS organizations. Further, CNS engineering organizations were not internally prompted to analyze the remainder of the required procedural and safety basis documents to ensure new H-Gear revision could be accepted. NPO personnel further identified a lack of clarity as to which CNS procedures authorize H-Gear movement. The resident inspectors note that CNS would benefit from an improvement to the internal process whereby all pertinent organizations are notified of such events. CNS will schedule a causal analysis for this event.