

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 2, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending September 2, 2022

Staff Activity: J. Anderson was on-site to observe and evaluate an ongoing operational safety review (see 8/5/22 and 8/26/22 reports).

Conduct of Operations: Last week, during a quality review following assembly operations within a nuclear explosive cell, CNS quality assurance personnel identified a required calculation within the operating procedure had not been correctly performed by the production technicians. Specifically, the operating procedure directs that during installation of shims, the production technicians calculate the average size. In this instance, the technicians inadvertently took a summation and not an average, resulting in the selection of the improper shim size. Following discussions with design agency personnel, CNS process engineering is drafting a nuclear explosive engineering procedure to allow partial unit disassembly and correct shim installation.

As a corrective action for this event, CNS plans to conduct a production technician briefing related to attention to detail. Additionally, the resident inspector discussed with process engineering personnel whether opportunities exist to improve the procedure and avoid event recurrence. For example, similar to certain electrical tester operations, the resident inspector questioned whether upper and lower bounds could be established within the procedure for this calculation. This modification could help inform the technicians when values substantially deviate from expected conditions and could also provide subsequent required actions.

In a separate event last week, production technicians discovered a component with an incorrect suffix installed on a unit. At the event investigation, participants noted that both material handlers and production technicians did not perform component transfer checks properly, resulting in a part with an incorrect suffix being selected from component inventories, delivered to the facility, and installed on the unit. As a corrective action, both groups of personnel will be briefed on part number suffix verification. Additionally, the nuclear explosive safety (NES) community plans to conduct an assessment on change control of component suffix modifications during an upcoming master study or other NES evaluation (see 8/19/22 report).

Safety Basis: In April 2022, CNS declared a potential inadequacy in the safety analysis (PISA) upon discovery that the hazard analysis reports for three weapon programs did not evaluate impact hazards associated with the toppling of certain cabinets and workbenches in proximity to staged nuclear explosives during seismic events (see 4/22/22 report). Last month, NPO approved a justification for continued operations (JCO) to address this PISA. Of note, the JCO established a compensatory measure—as a directive action specific administrative control—to ensure three pieces of equipment are maintained fall-down distance from the nuclear explosive configurations plus an additional nine inches to account for equipment sliding and subsequent toppling during a design basis seismic event. CNS previously removed equipment from facilities that could not meet this requirement; as a result, this compensatory measure should adequately preclude these impact scenarios.