

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 6, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** A. Gurevitch, M. Bradisse (acting), and C. Berg (acting), Resident Inspectors  
**SUBJECT:** Pantex Plant Activity Report for Week Ending August 6, 2021

**Nuclear Explosive Safety (NES):** This week, a NES study group (NESSG) convened to receive project team briefings on and conduct deliberations for a NES change evaluation for a specific electrical tester on a certain weapon program. Of note, this tester—used for resistance measurements—is already approved on other active stockpile weapon programs, making this program the last one to make use of this tester. One resident inspector attended these activities.

The design for one of the cables used with this tester does not match the condition expected in design agency documents regarding the intended test function. Specifically, the test—as intended by the design agency—calls for a certain current flow path, but the cable was designed and fabricated, through a collaboration between the design agency and Pantex, with the polarity reversed (i.e., the current flow path is reversed from expectations). This cable is also used for authorized operations with another electrical tester for this weapon program. The reversed polarity condition has been a known issue for many years, and has been noted in previous NESSG reports related to other weapon programs. However, because it had not been explicitly analyzed for this program, on Wednesday, CNS paused ongoing operations with these cables on this program. At this time, the design agency is reviewing the issue and is expected to declare that operations may resume. CNS is awaiting formal documentation with this information.

**Anomalous Unit:** In early July, the mission engineering organization released a pause on disassembly operations for an anomalous unit with a cracked component (see 3/26/21 report). This unit had successfully undergone a NES change evaluation, and an associated nuclear explosive engineering procedure (NEEP) was approved to govern disassembly operations (see 6/4/21 report). While executing the NEEP in late July and early August, production technicians encountered difficulties in separating certain components. This was an anticipated scenario, and contingencies were written into the NEEP to account for this possibility. However, after multiple attempts to separate the components and several days of delay—using the process specified in the NEEP—production and engineering personnel elected to place the unit in a safe and stable configuration and again pause operations. CNS personnel are currently evaluating potential paths forward to address this issue.

**Safety Basis:** CNS has experienced issues with discrepancies between special tooling actual weights and those documented in the safety analysis (see 3/12/21 and 3/19/21 reports) and used to determine maximum loading on units during the weapon response process. Based on these discrepancies, the CNS production tooling department has instituted an improvement initiative to weigh all special tooling and provide safety analysis engineering (SAE) with bounding tool weights, ensuring the safety analysis does not contain non-conservative values. As a result of this effort, CNS identified non-bounding special tooling weights used in the safety analysis, resulting in the declaration of a potential inadequacy of the safety analysis. SAE did not identify any operational restrictions because the impact hazards with these modified tooling weights still result in screened weapon responses, or are otherwise adequately controlled.