

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 30, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending September 30, 2022

Staff Activity: As part of the Pantex Safety Basis Re-design Project, NNSA is pursuing a Pantex-specific alternate methodology on safety basis development for nuclear explosive operations. The new safety basis development process is intended as a replacement for DOE Standard 3016 and DOE Standard 3009. This week, J. Anderson and C. Berg began discussions with NNSA and CNS personnel regarding the alternate methodology.

Safety Basis: As part of an improvement initiative to weigh all special tooling and provide CNS safety analysis engineering (SAE) with bounding values, the production tooling department continues to ascertain actual tooling weights (see 10/29/21 report). This week, SAE declared a potential inadequacy of the safety analysis (PISA) when the Strongback—special tooling used during hoisting operations—was found to have a discrepant as-found weight compared to the value recorded in the safety basis. This weight discrepancy of a few pounds will result in new high-order consequences for certain postulated impact scenarios. CNS did not implement any operational restrictions as a result of this PISA due to the affected hazard scenarios involving the special tooling (i.e., technician tripping events) being addressed by the configuration approach specific administrative control (see 9/9/22 report).

Within the same PISA notification, SAE also identified a different hazard scenario discrepancy involving special tooling used in hoisting operations. The postulated hazard scenario involves a special tooling drop onto a certain weapon component staged on the facility workbench. The wrong weapon response rule was assigned to this scenario, and application of the appropriate rule will result in new low-order consequences. As an adequate control set currently exists to address this scenario (e.g., requirements for facility crane assemblies to minimize drop events), CNS did not implement any operational restrictions.

Additionally, while preparing a safety basis change package this week, SAE declared a second PISA when identifying an uncontrolled hazard during vacuum chamber operations. The hazard scenario involves an insult to a nuclear explosive while opening the door of an enhanced transportation cart within the newer vacuum chamber facility. As an operational restriction on one weapon program, CNS implemented a six-foot standoff between the nuclear explosive and any enhanced transportation cart loading and unloading operations to prevent this hazard.

Nuclear Explosive Safety: Earlier this month, a nuclear explosive safety (NES) study group completed its evaluation of proposed operations on a specific unit that had an out-of-tolerance electrical test. CNS encountered the same issue last year (see 1/29/21 and 4/2/21 reports) and planned to employ a similar process—involving the use of electrical safety insulating gloves—to disposition this unit. In its report, the NES study group documented no findings and six deliberation topics. Both the study group and NPO found the proposed operations met NES standards and requirements. Following this determination, CNS successfully executed the nuclear explosive engineering procedure and completed disassembly operations on this unit.