

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 31, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: A. Holloway and C. Stott, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending May 31, 2024

Nuclear Explosive Safety (NES): Earlier this month, CNS nonconformed a nuclear explosive and paused further operations after quality assurance inspection technicians discovered that one of the recorded values for an electrical test was outside the acceptable range specified in the procedures. At the time, it was unclear whether the test result had been incorrectly transcribed or if the recorded value was accurate and therefore outside the acceptable range (see 5/24/2024 report). This week, a NES study group conducted an evaluation to assess proposed operations, including additional electrical testing on the nuclear explosive, to determine the actual test result value and whether it is within the acceptable range. The resident inspectors were in attendance. The NES study group did not identify any NES deficiencies or minority opinions related to the proposed operations, and documented only one deliberation topic.

During the NES evaluation, it was noted that the requirements document for the new enhanced reader-worker-checker process, which was used when the aforementioned test result was recorded, includes verification of recorded test values prior to proceeding with operations. However, the resident inspectors note that verification of the recorded values may not be emphasized in the new enhanced reader-worker-checker training, which the resident inspectors will attend next week.

Additionally, NNSA headquarters sent a memo approving a one-year extension to complete the 10-year NES study for a certain weapon program, which would have otherwise expired this month. In February 2024, PFO sent a memo requesting the one-year extension, citing that resolution of necessary weapon response changes and nuclear explosive operating procedure revisions may persist beyond the May 2024 expiration timeframe (see 2/9/2024 report). Per NNSA Supplemental Directive 452.2, for ongoing nuclear explosive operations on each weapon program, NNSA must conduct a NES study every 10 years to evaluate the operations at Pantex and establish a new NES baseline.

Nuclear Explosive Facilities: Earlier this month, while testing the electrostatic dissipative (ESD) flooring after maintenance activities in a nuclear explosive cell, CNS received resistance values higher than the acceptable limits. CNS prohibited all nuclear explosive operations that require operable ESD flooring from being performed in this facility. During the subsequent critique, CNS discussed a known susceptibility of the epoxy ESD flooring to moisture and that the floor had been exposed to both water and higher-than-normal humidity during the maintenance activities. CNS also noted that the flooring in this facility previously failed resistance testing in September 2022 after maintenance activities; CNS facility engineers continued to monitor it until obtaining passing results in November 2023. During this timeframe, CNS only conducted nuclear explosive operations that did not require operable ESD flooring. Nevertheless, the resident inspectors stated during the critique that the practice of continuously monitoring safety class equipment until obtaining passing results is nonconservative since CNS only tests the floor annually after obtaining a single passing result.