

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 12, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: C. Stott, C. Berg (acting), and A. Boussouf (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending May 12, 2023

Staff Activity: M. Randby was on-site to observe and evaluate an operational safety review. In addition, A. Boussouf provided resident inspector coverage, including conducting walkdowns of various defense nuclear facility fire suppression systems and assessing the flow test results for operability of diesel fire pumps (see 5/5/23 report).

Probabilistic Seismic Hazard Analysis (PSHA): Two weeks ago, CNS found that ground motions at lower frequencies—as detailed within the updated PSHA—may exceed the seismic hazard parameters utilized in development of the safety basis (see 4/28/23 report). As a result, CNS Safety Analysis Engineering declared a potential inadequacy of the safety analysis (PISA). Last week, due to the potential increase in both the probability of an accident and the malfunction of equipment important to safety, CNS determined that the PISA represented an unreviewed safety question.

Nuclear Explosive Operations: This week, a nuclear explosive safety study group commenced its operational safety review of assembly and disassembly activities on one weapon program. While the study group and DNFSB staff observed disassembly operations in a bay, the production technicians identified that a certain component of the unit did not pass a visual inspection due to a scratch exceeding defined acceptance parameters. Upon completing the steps within the procedure—which places the unit into a safe and stable configuration—the technicians consulted with CNS Process Engineering to confirm the results of the visual inspection and completed a nonconformance report. CNS also initiated discussions with the responsible design agencies, and these organizations are developing a coordinated path forward for this unit.

Causal Analysis: Earlier this year, CNS identified that procedure P7-0804 no longer contained certain radiation safety equipment within the list of authorized Category Two electrical equipment. In immediate response to this discovery, CNS stopped using all affected items within nuclear explosive areas for a few hours until the discrepancy could be corrected. Additionally, during the event investigation and critique, CNS participants developed a suite of immediate corrective actions, including briefings and document reviews, to minimize the occurrence of a similar incident (see 4/7/23 report).

This week, CNS conducted a causal analysis to determine root causes for the event and develop additional actions. The resident inspectors found the discussions to be constructive and focused on multiple relevant aspects of the incident. Participants analyzed both factors that contributed to the removal of radiation safety equipment from the procedure and potential improvements necessary to bolster the internal document revision review process, which did not identify this discrepancy. For example, CNS technical reviewers—when evaluating a proposed revision—are provided the revision history with change bars highlighting the proposed modifications. In certain circumstances, these change bars may not capture the extent of revisions within the document. CNS personnel plan to reconvene the causal analysis later this month.