DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 8, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: A. Holloway, C. Stott, and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending December 8, 2023

Staff Activity: J. Anderson and the resident inspectors observed and assessed two Nuclear Explosive Safety (NES) Change Evaluations (NCE) concerning alterations on a weapon program. The staff members also conducted walkdowns of various nuclear explosive facilities, as well as met with NPO and CNS management to discuss recent site events.

Nuclear Explosive Safety: A NES study group convened to evaluate proposed operations for two alterations on a weapon program. While the study group and members of the Board's staff discussed concerns with the proposed activities, no NES deficiencies were identified. Within the two NCE reports, the study group identified zero deficiencies and a total of eight deliberation topics. One noteworthy topic involves compounding issues that have arisen on this weapon program and the cumulative effect of these smaller issues on NES. A different NES study group identified this same concern as a deficiency during a previous NCE (see 8/25/23 report). An action plan to address this deficiency is still being developed.

Safety Basis: Last week, CNS personnel discovered water intrusion—leading to a small blister underneath the electrostatic dissipative (ESD) flooring—within a nuclear explosive facility. CNS identified similar water ingress into this facility in 2015. At the current time, CNS has not determined the cause of either water intrusion event. As material of concern was present in the facility for this most recent instance, CNS could not immediately test the ESD flooring to ascertain its functionality. Furthermore, per the current safety basis, CNS cannot continue operations on the material of concern within this facility without ESD flooring that has been verified to meet its safety function. Consequently, CNS declared a Potential Inadequacy of the Safety Analysis and implemented operational restrictions to prohibit further operations on the material of concern within this facility at this time.

Conduct of Operations: CNS recently became aware of two nuclear explosives assembled at Pantex in which the same components had been incorrectly installed. At the event investigation, CNS participants noted that the production technicians had fastened component lanyards in the opposite threaded holes. Additionally, similarly to a previous event (see 9/15/23 report), CNS quality assurance inspection technicians (QAIT) did not discover the discrepancy during a quality hold point—in which the proper installation of the lanyards is verified.

To minimize future occurrences, CNS established a suite of corrective actions. First, CNS plans to brief production technicians on this weapon program and all QAITs on proper lanyard connections. Second, CNS plans to conduct lanyard connection refresher training for all applicable production technicians on this weapon program, as well as quality hold point refresher training for the QAITs. Third, while CNS process engineering personnel noted that the operating procedure clearly defined the lanyard installation steps, they will evaluate whether certain procedural enhancements and clarifications can be employed. Finally, Pantex quality operations personnel will evaluate the need for an extent of condition review across the weapon program.