

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 26, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: A. Holloway and C. Stott, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending April 26, 2024

Staff Activity: C. Berg was onsite to attend a virtual offering of the annual Nuclear Explosive Safety Technical Exchange Forum and provide resident inspector support.

Nuclear Explosive Safety Annual Forum: Stakeholders in nuclear explosive safety convened in Albuquerque, New Mexico, for the annual Nuclear Explosive Safety Technical Exchange Forum. J. Anderson attended the conference in person while C. Berg and the resident inspectors participated via teleconference at Pantex. Presentations included conclusions of recent Nuclear Explosive Safety evaluations, knowledge gained from high explosive testing, lessons learned from operational experience in other industries, and assessments of certain weapon safety components and failure mechanisms.

Safety Basis: This week, CNS safety analysis engineering declared a potential inadequacy of the safety analysis related to a missing hazard assessment involving a potential hose whip event for a certain weapon component while on the workbench. Due to the presence of an existing control, CNS did not implement any operational restrictions.

Nuclear Explosive Safety: CNS identified gaps in their processes that ensure only trained and qualified personnel have unescorted access into the material access areas. CNS found that these gaps emerged during implementation of a new training system in which all personnel qualifications were removed for individuals that changed positions. While the unqualified personnel did not exclusively access material of concern, CNS categorized the incident as an event resulting in an adverse effect on nuclear explosive safety. CNS plans to establish a manual process in which email notifications will be sent to training officials for all position changes to ensure qualifications are revalidated until a permanent software change can be implemented.

Nuclear Explosive Operations: Last month, CNS received notification from one design agency regarding imperfections found during the manufacturing of certain bonding cables at the Kansas City National Security Campus. These bonding cables—part of a suite of bonding controls implemented to address internal charge generation hazards (see 3/26/21 report)—are used to protect against electrostatic discharge hazards during disassembly operations for one weapon program. The identified issue involves incomplete adhesion between the insulative and conductive materials of the cable, which led the design agency to question the ability of the cable to properly perform its safety function. While the design agency provided an upper limit to CNS for cable insulation adherence to allow use of cables with minimal deviations, a process has not yet been established at Pantex for cable deviation acceptance. Though the manner in which the design agency informed Pantex concerning this issue was outside of normal processes (i.e., using an informal memorandum between organizations), CNS has conservatively suspended operations that use the suspect cables until the bonding cables can be verified to perform as designed. Currently, CNS is working with the design agency to establish a cable deviation acceptance process to allow resumption of operations involving this bonding control.