

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 28, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: A. Holloway and C. Stott, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending June 28, 2024

Safety Basis: This week, CNS safety analysis engineering declared a potential inadequacy of the safety analysis (PISA) after discovering that improperly controlled electrostatic discharge hazard scenarios could exist during operations for a certain weapon program. Specifically, during a procedure change review, CNS identified steps within two procedures directing production technicians to perform certain actions—deemed to be inappropriate—to the nuclear explosive if a certain component had visible damage or failed its electrical test. In response to the PISA, CNS prohibited further use of the associated procedures until new revisions can be published with the needed corrections.

Facility Compressed Air System: CNS utilizes a compressed air system in various defense nuclear facilities to provide a motive force to tooling, overhead hoists, and crane trolleys. As a safety design feature, the compressed air system output is limited to a maximum pressure by pressure relief valves and rupture discs. Equipment that connects to the compressed air system is credited to withstand this pressure without failure to preclude fragmentation and subsequent impacts to materials of concern. Last week, during unrelated activities, a CNS facility engineer noticed that a new diesel-powered air compressor had been connected to the existing compressed air lines. After further investigation, the engineer discovered that the compressor installation work order was generated and completed without CNS facility engineering awareness; however, CNS verified that the new compressor had not yet been operated. Subsequently, CNS directed utilities personnel to disconnect the compressor from the system.

During the critique, CNS discussed the cause of this event as being a process error during work planning. A CNS infrastructure planner used a previous repair work order instead of an appropriate work order with the key information that would trigger a design change proposal and reviews by suitable CNS organizations. CNS classified this issue as a noncompliance of a hazard control specified in the safety basis for defense nuclear facilities. CNS plans to develop actions to prevent recurrence during a future causal analysis for this event. In the meantime, CNS has initiated briefings to emphasize the importance of proper work orders to work planners, maintenance craft workers, and maintenance craft supervisors.

Special Tooling: Earlier this month, during nuclear explosive assembly operations, CNS production technicians identified abnormal component measurements while using depth gauge special tooling. During the critique, CNS determined that the tooling had been recertified with a new gauge, but that the stock probe tip on the new gauge had not been replaced as required by the tool drawing. CNS noted that the tooling passed calibration with the incorrect tip; however, this calibration setup does not account for component clearances on this configuration. CNS performed an extent of condition and did not find any other copies of tooling with an incorrectly sized probe tip. CNS plans to perform a causal analysis to assess the calibration setup as well as increase the scope of the tool return to service process.