

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 11, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending November 11, 2022

Conduct of Operations: Last week, production technicians executed operations on non-nuclear components using the incorrect revision of a procedure. During a hold point, CNS quality personnel identified the discrepancy and nonconformed the associated components. At the event investigation, participants discussed requirements—per the conduct of operations manual—for production technicians to verify procedure revisions prior to conducting operations. In this case, technicians performed the pre-operational checks but did not identify the incorrect revision of the one procedure. In response to the incident, the production section manager briefed production technicians on expectations associated with pre-operational checks.

Safety Basis: CNS safety analysis engineering (SAE) previously declared a potential inadequacy of the safety analysis (PISA) associated with a discrepancy between the existing facility crane assembly configurations within two nuclear explosive cells and the configuration analyzed within the safety basis (see 11/4/22 report). Specifically, stiffening rods were not present on the top of the jib arms, which provide additional strength to the structures and are necessary—per the safety basis engineering analysis—to withstand loading conditions present during a seismic event. This week, SAE determined the PISA represented an unreviewed safety question due to an increase in the probability for a malfunction of equipment important to safety, as well as an increase in the probability for a previously evaluated accident scenario. In order to remove operational restrictions and permit resumption of operations within these two cells, CNS engineering is currently reevaluating whether the facility crane assemblies can withstand design basis seismic events while supporting a lesser load (i.e., one-half of the currently rated load).

Fire Alarm Receiving System (FARS): Last week, CNS fire protection engineering and electronic shop personnel performed software updates on all FARS servers. Following the software updates, these personnel executed preventive maintenance procedures to reestablish FARS functionality. However, approximately twelve hours later, the emergency services dispatch center (ESDC) reported a loss of connectivity with the FARS. When notified, CNS facility management entered the appropriate limiting conditions for operations (LCO) for both the high pressure fire loop and deluge Eagle Quantum Premier fire suppression system. Actions associated with these LCOs include placing all nuclear explosive operations into safe and stable configurations in those facilities serviced by the deluge fire suppression system, as well as establishing a fire watch for those facilities or implementing defined combustible material standoffs from thermally sensitive components. CNS categorized the event as a performance degradation of a safety class structure, system, or component when required to be operable, and subsequently exited the LCOs following FARS restoration. During the event investigation, participants attributed the loss of system functionality to the software updates. In June and August 2022, the ESDC reported similar events (see 7/1/22 and 8/5/22 reports). Corrective actions for these previous instances (e.g., installing software updates only on inactive servers) have not prevented event recurrence. CNS management requested a causal analysis to identify the root cause and develop a corresponding corrective action set.