DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 24, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending April 24, 2020

Safety Basis: NPO approved staging one weapon component and associated tooling in an enhanced transportation cart (ETC) beyond the in-service inspection (ISI) grace period for the ETC. ETC-IIs are safety class tooling with a number of functional requirements primarily aimed at preventing insults to components staged within the carts. The technical safety requirements specify both quarterly and annual ISIs to visually inspect the ETC-IIs or verify ETC-II configuration. Both quarterly and annual ISIs for the ETC-II in question will expire, including grace periods, in early May; however, due to COVID-19 related restrictions, necessary observations of operations on the component staged within the ETC cannot be completed in the near term. CNS drafted a safety basis supplement—a standalone safety basis document—for the extended staging of the component. In the associated engineering evaluation, CNS notes that due to the secure and controlled staging location for the ETC-II, and the lack of operations involving the ETC-II, none of the design features will be subject to degradation and the ETC-II should not be subject to typical wear mechanisms. NPO's safety evaluation report noted no conditions of approval. CNS has previously discovered ETCs outside of their ISI grace periods, typically due to extended periods of staging items within the ETCs (see 2/28/20 report).

Lightning Detection System: The Pantex safety basis credits a lightning detection and warning system, which includes a lightning location and protection system (LLPS) subsystem, as safety class. On Monday, the LLPS failed to detect lightning approximately 40 miles away. The operations center entered the appropriate limiting condition for operation (LCO), which requires declaration of lightning warnings. Technicians switched to a backup LLPS server, and CNS personnel monitored the system to ensure it did detect nearby lightning before exiting the LCO. However, shortly after exiting the LCO, the LLPS failed to detect lightning within ten miles of Pantex, and the operations center re-entered the LCO. During the inoperability, the LLPS status display did not indicate any errors or communication issues with sensors, aside from one known sensor error. In March, the LLPS experienced a previous period of inoperability (see 3/20/20 report). During the previous event, the LLPS provided warnings as an indication of potential system inoperability. CNS is currently pursuing options for ensuring function of the lightning protection system or verifying clear weather windows using alternate methods.

Operations: Production technicians (PT) completed operations described in a nuclear explosive engineering procedure (NEEP) for re-testing a unit that failed an electrical test earlier this year (see 4/17/20 report). The second electrical test passed, allowing the removal of anomalous unit restrictions and PTs to continue with the typical disassembly process.

Late last month, PTs encountered unexpected defects in one unit (see 4/3/20 report). This week, anomalous unit restrictions were lifted and operations for disassembly of the unit via a NEEP were approved. All electrical tests for the unit had passed, and design agency personnel asserted that the defects would not result in a reduction of safety. A nuclear explosive safety change evaluation concurred with the path forward, documenting no findings or deliberation topics.