DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 19, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending August 19, 2022

High Pressure Fire Loop (HPFL): During a quality review of a completed work order related to an altitude valve repair for an HPFL water tank, CNS identified—after the system was returned to operation—that the installed part had not been acquired at the appropriate, elevated acquisition level. Of note, the HPFL water tank is a safety class system; however, CNS performed work on the tank refill line, which is not credited within the safety basis. CNS fire protection engineering developed a non-conformance report and determined the part was acceptable for continued use. Though not in effect at the time of this project, as of May 2022, CNS will perform a quality inspection of parts prior to installation to minimize future events.

Fire Suppression System (FSS): The deluge FSS consists of fire detectors capable of relaying a signal to the Det-Tronics control panel upon detection of a facility fire; the control panel interprets this input and provides a signal to the deluge solenoid, triggering operation of the deluge valve and permitting the flow of water from the HPFL into the facility. Per the technical safety requirements, the deluge FSS requires a primary and secondary power supply to ensure the operability of the above components. Given their importance for FSS functionality, CNS established a surveillance requirement to periodically test the operability of both the primary and secondary power supplies.

While performing semi-annual preventive maintenance for the deluge FSS in a nuclear explosive cell—implementing the above surveillance requirement—CNS electricians identified that both the battery and battery charger voltage readings were less than the acceptance criteria. As a result of this failed surveillance requirement step within the procedure, the CNS facility representative exited the limiting condition for operation (LCO) associated with planned impairment of the deluge FSS and entered the appropriate LCO corresponding to an unplanned impairment. At the investigation, participants categorized the event as a performance degradation of a safety class system when required to be operable. In addition, they noted that during revision of the maintenance procedure, CNS personnel had incorporated the wrong acceptance criteria for the battery charger voltage reading. As a result, CNS plans to revise these criteria within two procedures, as well as conduct an extent of condition review across applicable preventive maintenance procedures. Furthermore, CNS plans to evaluate battery charger voltage readings within applicable facilities to ensure they meet the correct acceptance criteria.

Nuclear Explosive Safety (NES): A NES evaluation concluded related to the assembly and disassembly of nuclear explosives with an alteration to mitigate certain safety component responses during accident scenarios (see 9/17/21 and 8/12/22 reports). The NES study group documented zero findings and six deliberation topics in its report. In particular, the study group noted no NES concerns with the proposed operations but stressed that restrictions resulting from the previous evaluation related to this safety component still applied. Additionally, the study group identified a general concern with NES change control of component suffix changes; this topic will be further assessed at an upcoming NES evaluation or master study.