

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 4, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending December 4, 2020

Fire Protection System: While removing equipment and out-of-service cabling in the emergency dispatch center, subcontractors inadvertently disconnected an in-service communication line for the fire alarm receiving system (FARS). The disconnection specifically interrupted the fiber optic network that facilitates communication between the FARS and the deluge Eagle Quantum Premier fire suppression system in multiple nuclear explosive facilities. Over the course of a few minutes, fire protection engineers noted trouble signals and reconnected the communication line. Fire protection engineers proceeded to manually reset each control panel and verify deluge system operability for each affected facility. The technical safety requirement (TSR) requires entering an limiting condition for operation (LCO) following loss of communication; however, fire protection engineers believed that since they quickly reconnected the communication line and believed the system to be operable, entering the LCO was not required. CNS facility representatives therefore did not enter the LCO. The applicable LCO would have required safe and stabling any units in affected facilities and either establishing a fire watch or controlling combustible loading. Several days later, CNS declared a TSR violation for failure to enter the LCO. In particular, the spurious alarms could prevent identification of an event-related alarm. A similar TSR violation following interpretation differences on LCO entrance conditions for deluge system communication occurred last June (see 6/21/19 report). CNS safety analysis engineering has previously committed to review and revise the fire protection LCOs over the next two years as part of a larger safety basis improvement effort.

Electrostatic Dissipative (ESD) Flooring: While performing an in-service inspection (ISI) of the ESD flooring in one nuclear explosive bay, CNS maintenance workers determined that several points on the flooring exceeded the maximum resistivity requirements, and therefore failed the ISI. A subcontractor installed the flooring less than two years prior. At that time, the flooring passed its acceptance testing, and the flooring has not been subject to any additional resistivity testing since. During the event critique, CNS engineers noted that an ISI failure this soon after installation, with no known water intrusion events or identified damage mechanisms, was extremely atypical; CNS has utilized the same subcontractor for all recent ESD flooring installations, and has not noted similar instances. Critique participants additionally noted that they believed the subcontractor installed ESD flooring in two other nuclear explosive facilities around the same time. CNS engineering committed to performing an extent of condition review for the event, including ESD testing of the two facilities. Facility operations intends to perform additional testing of the flooring that failed the ISI to better identify areas of high resistivity. No nuclear explosive operations have been performed in the facility since the flooring installation.

Safety Requirements: Safety analysis engineering personnel determined that a specific administrative control (SAC) in the TSRs did not match the safety analysis report. The SAC outlined standoff distances for high explosive transportation carts, and incorrectly stated which physical configurations were subject to standoff distances for one weapon program. Applicable procedures have been placed in an inactive status.