

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 4, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending January 4, 2019

Fire Detection and Suppression Control System: During completion of a preventive maintenance activity on a battery bank that provides a secondary power supply for the Det-Tronics fire detection and suppression control system, special mechanic inspectors received internal resistance readings below the minimum acceptable level. The battery bank serves a single nuclear explosive bay and consists of eight batteries, five of which failed the resistance test. The plant surveillance requirements specify the resistance test to verify the operability of the secondary power supply. In preparation for the maintenance, CNS facilities personnel had previously taken actions to support the limiting condition for operations associated with an inoperable secondary power supply. Following the test failures, CNS maintenance and facilities personnel replaced the batteries before returning the system to service

The batteries were installed as part of a facility upgrade project in 2016 (see 8/19/16 report). During a fact finding meeting held on this event, CNS fire protection engineers (FPE) indicated that the batteries sat on an external loading dock for some period of time during the 2015 strike and work stoppage (see 8/28/15 report) before being placed in a controlled storage area. Due to project delays, the batteries remained in storage for several months prior to being installed. The batteries had an estimated lifetime of five years but failed after less than three years in service. CNS upgraded a separate nuclear explosive bay at the same time as the bay in question. CNS FPE suggested that the batteries installed in the other bay may have been subjected to the same environmental factors and may be at increased risk of early degradation. CNS facilities personnel submitted a work order to preemptively replace the batteries installed in this facility as well. In the past year, CNS has discovered two separate premature failures of similar batteries (see 5/18/18, 5/25/18 and 7/20/18 reports). Each failure involved different battery models from the same manufacturer.

Handling Gear: During discussions related to a lightning standoff violation in 2018 (see 8/31/18 report), CNS material handlers noted that they do not routinely chock or otherwise restrain the wheels on handling gear for certain nuclear explosive units between moves. The resident inspector shared this observation with manufacturing and process engineering management and inquired as to how CNS controls potential rolling impact hazards related to handling gear staged in nuclear explosive bays. The resident inspector and CNS process engineering confirmed that the material handling procedures do not direct operators to restrain motion on handling gear when it is introduced to nuclear explosive bays. The general safety requirements for production activities require that “[a]ll mobile handling gear... are to have brakes applied and/or approved wheel-holding devices (wheel chocks) are to be installed as soon as [they are] positioned in the desired location.” During routine observations this week, the resident inspector observed multiple pieces of handling gear staged in a nuclear explosive bay without any form of wheel-holding device or brakes applied. The resident inspector shared this observation with manufacturing and process engineering management.