

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 20, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Ramsey P. Arnold and Zachery S. Beauvais, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending July 20, 2018

Federal Readiness Assessment (FRA): NNSA completed a readiness assessment of the Confined Large Optical Scintillator Screen Imaging System (CoLOSSIS 2) facility and related operations (see 6/15/18 report). The FRA team identified two pre-start findings and two post-start findings. One pre-start finding addresses the lack of clarity in the startup plan for defining when CNS can transition from deliberate operations to normal operations. The additional pre-start finding addresses the presence of a physical gap between a fire door and the facility floor that will need to be corrected to meet fire code requirements. Notably, the FRA team conducted an unannounced drill to test the capabilities of the quality assurance technicians (QAT), the plant shift superintendents (PSS), and radiation safety technicians to respond to a potentially damaged pit. While the QATs demonstrated thorough knowledge of their response procedures, the PSS struggled with response actions. The FRA team concluded that this issue stemmed from an over-reliance on planned emergency drills, and identified it as a post-start finding. The FRA team concluded that the QATs assigned to this process are proficient and knowledgeable on its requirements and recommended that NPO approve startup of the operations following closure of the pre-start findings. The resident inspectors shadowed interviews performed by the FRA team and found their assessment to be thorough.

Deluge Fire Suppression System (FSS): During completion of a preventive maintenance activity, special mechanical inspectors (SMI) discovered non-conforming pipe nipples installed on an FSS riser. Specifically, the pipe nipples were found to be galvanized steel as opposed to stainless steel, which was specified in the system design. A failure modes and effects analysis performed during system design had concluded that stainless steel was necessary to improve the long term reliability of the system by preventing future corrosion. SMIs discovered the nonconforming components in a bay that is undergoing various FSS upgrades. An immediate extent of condition found galvanized pipe nipples installed in a neighboring bay that is also undergoing upgrades. During the construction process, fire system subcontractors rebuilt the fire riser multiple times to address separate issues. The subcontractors likely introduced the nonconforming parts during that process.

Fire Detection and Suppression Control System: During completion of a preventive maintenance activity, SMIs received a voltage reading on one battery that was below the minimum acceptable level, as implemented to meet a surveillance requirement. Installed battery banks serve as the secondary power source for the Det-Tronics fire detection and suppression control system, and sufficient load voltage is required for system operability. CNS had previously removed explosives and nuclear material from the impacted facilities to support a fire alarm control panel replacement project. The battery manufacturer provides a ten-year warranty, and CNS preventively replaces the batteries every four years. The battery that failed the test had been installed in February, failing well before its estimated lifespan. CNS has not yet determined the cause for this early failure. Special mechanical inspectors replaced the batteries and completed the preventive maintenance. Following a separate battery failure earlier this year (see 5/18/18 report), CNS engineering committed to evaluate the storage plan for spare batteries.