

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 28, 2016

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending October 28, 2016

DNFSB Staff Activity: J. Anderson was onsite to observe activities related to the B83 Operational Safety Review and J. Deplitch attended weapons hands-on training.

Maintenance Activities: As part of a series of planned electrical outages, Pantex infrastructure personnel are in the process of performing multiple, extensive maintenance activities related to the plant electrical distribution system and high pressure fire loop (HPFL). The electrical distribution system maintenance addresses vulnerabilities identified during system testing performed last year. Special mechanic inspectors are performing a series of HPFL flow tests to assess all portions of the system supporting fire suppression in nuclear explosive areas of Zone 12 south. The outages are planned to continue into early November, during which time, nuclear explosive operations will remain paused in several facilities.

Fire Barriers: Late last week, Pantex safety analysis engineering (SAE) declared a potential inadequacy of the safety analysis following the discovery of a discrepant condition in the Special Nuclear Material (SNM) Component Requalification Facility. Operations in this facility had been previously paused at the time of discovery. Specifically, a fire protection engineer discovered an installed ventilation duct without a required fire damper during a walkdown conducted as part of an ongoing effort to establish the technical baseline for safety related fire barriers. Pantex management instituted the technical baseline development as a corrective action following the discovery of several discrepant fire barriers in 2014 (see 1/24/2014 report). Through this effort, engineering personnel have identified discrepant barriers in other SNM facilities as well (see 8/28/2015 report). Fire protection engineers completed the remaining technical baseline walkdowns of fire barriers in SNM facilities this week and had previously completed these walkdowns in the nuclear explosive facilities. SAE personnel determined that the absence of a fire damper meets the criteria for a positive unreviewed safety question (USQ) due to an increase in the probability and consequence of an equipment failure. SAE is developing a justification for continued operations and Pantex is considering a corrective action to install a compliant fire damper.

Cell Concrete Extent of Condition: Pantex projects management recently approved the results of an extent of condition review performed related to the installation of non-compliant concrete in two nuclear explosive cells (see 5/27/2016 report). The extent of condition review indicates that no other issues specifically related to concrete design specification have occurred within the last five years; however, similar deviations from the design change process have occurred. Specifically, a modification was made to the safety class HPFL pressure boundary in 2012 without a USQ review, and, in 2013, electrostatic dissipative flooring installation in a cell commenced prior to completion of the required design change proposal. Based on similarities of these events, the extent of condition team concluded that management systems for communicating safety system requirements and controlling the field change process are not as robust as needed. Pantex management has previously specified corrective actions to clarify or streamline the processes for performing design change proposal reviews following each of these prior events.