

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 18, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Report for Week Ending August 18, 2017

DNFSB Staff Activity: P. Foster attended training for the nuclear explosive safety master study on the electrical equipment, including testers, scheduled to begin in September.

Severe Weather: Following heavy rainfall and severe thunderstorms, Pantex experienced multiple losses of offsite power, and localized flooding in nuclear material and nuclear explosive (NE) facilities. The localized flooding, with levels of standing water less than six inches, affected Zone 12 NE bays, and nuclear material processing and staging bays; and Zone 4 staging magazines. Production and maintenance personnel worked to remove the standing water in Zone 12, and a cross-functional response team was established to return the affected facilities to operations. The severe weather and loss of electrical power contributed to faults in multiple safety systems across the plant, including a fire alarm control panel (FACP) serving an NE cell, an FACP battery charger serving multiple NE bays, and intermittent overrides of the blast door interlock (BDI) systems in multiple NE bays. Facilities personnel entered the applicable limiting conditions for operability (LCO) on affected safety systems. Engineering and maintenance personnel linked the cause of the BDI overrides to faults in the FACP. The loss of offsite power also affected one high pressure fire loop (HPFL) pump house, requiring unexpected entry into the LCO (see below). The recovery team plans to notify the design agencies of the impacts, coordinate engineering evaluations for affected NE facilities, and implement an affidavit process with various plant organizations prior to returning facilities to operations. Additional actions include cleaning, inspection, and replacement of special tooling as needed; and cleaning and re-testing of electrostatic dissipative flooring in empty NE facilities prior to returning them to use. The impacts of the weather were mitigated by precautionary actions taken by facilities personnel.

HPFL Surveillance Action Not Performed: Upon determination that an HPFL pump house was inoperable due to a loss of offsite power, CNS facilities personnel and the on-call fire protection engineer entered the LCO per the guidance in the Technical Safety Requirements (TSR). For this specific LCO, the TSR directs facilities personnel to restore the diesel fire pump to operable status immediately or per an approved recovery plan. In February, a standing order specifying additional actions to be taken following a power failure to the HPFL pump house, in place since 2015, was updated to require utilities personnel to “check the diesel coolant temperature is at or above 95°F... immediately and then daily,” until the LCO is exited (see 1/2/15, 1/9/15, 2/24/17 reports). The actions specified in the standing order are treated as LCO action conditions. The CNS personnel relied upon to perform the LCO actions did not perform the additional check of the coolant temperature specified in the standing order. CNS management determined the failure to perform this actions violated the TSR. Following a similar TSR violation earlier this year (see 3/10/17 report), CNS identified a corrective action to ensure that all standing orders are in the reference material used by fire protection engineers. This was completed for the electronic material, but was not completed for all hard copy material used by fire protection engineers. The actions currently specified by the standing order will be rolled into the TSRs as part of a recently submitted safety basis change package, currently under review by NPO. CNS utilities personnel checked the coolant temperature the following morning and found it to be within the acceptable range.