

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 22, 2015

MEMO TO: Steven Stokes, Technical Director
FROM: Rory Rauch, Acting Pantex Site Representative
SUBJECT: Pantex Plant Report for Week Ending May 22, 2015

Operational Pause: Production technicians paused a nuclear explosive operation last weekend after observing a crack in the high explosive. The PTs placed the unit in a safe and stable configuration and contacted their supervisor, who in turn contacted the appropriate subject matter experts (SMEs)—process engineering, nuclear and explosive safety and safety analysis engineering personnel—to evaluate the condition of the unit. All SMEs concurred that the unit was in a safe and stable configuration and began to develop a temporary procedure to recover from the work pause. Unlike previous units with cracked high explosives (see 5/15/15 report), it appears this unit will not be formally declared “anomalous” because the crack’s dimensions are bounded by criteria previously provided by the responsible design agency. However, the recovery effort may be complicated by the fact that the location of the cracks could prevent a piece of special tooling from performing its safety function. The responsible process engineer plans to add a step to the recovery procedure requiring the production technicians to ensure that the special tooling in question can fully engage before proceeding with the operation.

The acting site representative and responsible NPO facility representative evaluated the cracked high explosive earlier this week. While in the facility, the supervisor and production technicians indicated that the point in the procedure when they paused work did not explicitly direct them to evaluate the high explosive for cracks (as is the case in other sections of the procedure). They planned to communicate this potential procedure improvement to process engineering.

Loss of Power Events: Pantex has experienced a series of events in recent weeks in which a facility or block of facilities lost power. System engineers believe a combination of age and weather-related issues are causing the outages. The typical nuclear safety-related impact from a loss of power event at Pantex is an unplanned limiting condition of operation (LCO) entry. For example, on May 10, the Pantex Operations Center (OC) entered an LCO for the Lightning Detection and Warning System (LDWS) due to a loss of electrical power and the resultant loss of the Lightning Location and Protection System display. System engineers have yet to definitively determine the cause of the issue, but believe the loss of power could have been related to severe weather in the area that created an issue (either a ground fault or some form of electromagnetic interference) with one of the power distribution system interconnect circuits and caused a breaker feeding power to the OC to trip. The uninterruptable power supply (UPS) batteries provided backup power as designed, but the loss of primary power lasted long enough to deplete the batteries’ power. In accordance with the actions of the LDWS LCO, the OC declared lightning warnings and initiated actions to restore power to the facility. Maintenance personnel restored power to the facility within a day and exited the LCO.

Last week, in a separate issue, several nuclear facilities in the material access area lost primary power. In this instance, the UPS batteries provided backup power for the duration of the outage. Utility personnel isolated a circuit to allow for troubleshooting on a manhole arcing incident and believe the automated transfer switch supporting these facilities, which had been placed in manual mode due to a previous issue, failed to transfer power to an alternate circuit.