

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy Dwyer, Technical Director
FROM: Matthew Duncan and Rory Rauch, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending September 9, 2011

DNFSB Staff Activity: J. Pasko was onsite to observe operations and attend a nuclear explosive safety (NES) training course.

Process Anomalies: During the past two weeks, technicians paused operations on a certain weapon program on two occasions after observing process anomalies. The anomalies were different in nature, but occurred at approximately the same sequence of steps on consecutive units. The first anomaly involved cracks on a part that surrounds the primary. After discovering the cracks, the technicians immediately contacted their supervisor and engineering personnel, who had the technicians place the unit in a stable configuration by removing a weapon part that had been suspended above the primary. The following day, engineering and design agency personnel evaluated the cracks, determined that they created no safety or processing concerns, and allowed the technicians to continue operations.

During operations on the subsequent unit, technicians were in the process of removing a weapon part (the same part that was suspended above the primary when technicians discovered the first anomalous occurrence) when they noticed that part of the detonator cable assembly (DCA) had been damaged. They immediately suspended operations and contacted their supervisor, who contacted B&W NES, authorization basis, tooling, and process engineering personnel as well as the electrostatic discharge subject matter expert (SME). All parties agreed that the best course of action was to complete removal of the weapon part and wait for design agency (DA) SMEs to evaluate the damage. The DA SMEs evaluated the configuration the following day and all parties agreed that B&W would need to formally request a clarification from the DA regarding whether it would be necessary to place polyimide tape on the damaged area before proceeding. The DA estimates a two week turnaround time for the clarification.

Special Tooling: Technicians must rotate the weapon primary 180 degrees on several occasions during a certain nuclear explosive disassembly operation. This is accomplished by disengaging an anti-rotation pin and turning a wheel on the side of the workstand. This week, technicians suspended operations after the anti-rotation pin failed to disengage. Tooling personnel evaluated the workstand and determined that the technicians could use a screwdriver to disengage the stuck pin and rotate the disassembly. The responsible process engineer is developing a temporary procedure that will allow the technicians to use the screwdriver to allow the unit to rotate for the remainder of the disassembly. The procedure will require the technicians to ensure that the pin is engaged after each rotation has been completed.

Electrostatic Discharge (ESD) Footwear Checker: Technicians were unable to initially enter a nuclear explosive cell after the plate covering the badge reader would not raise and lower without some manual aid (new ESD footwear checkers cover the badge readers with a plate that can only be lowered after personnel pass an electrical continuity check). System engineering evaluated the footwear checker and found that a sealant on the threaded fastener near the barrier retraction solenoids had mixed with the nylon washer on the solenoids. The washer material had leached into the plunger cavity, thereby restricting the movement of the plate. A certified electrical worker removed the sealant, which was not part of the vendor specifications, cleaned the plunger, and returned the checker to service.