

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 9, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors
SUBJECT: Pantex Plant Report for Week Ending November 10, 2017

DNFSB Staff Activity: J. Anderson observed the W88 nuclear explosive safety study.

Nuclear Explosive Operations: Production technicians (PT) paused operations in a vacuum chamber facility when they discovered that a piece of special tooling did not fully engage, as designed, with a unit. After attaching a lifting and rotating fixture, used to move the unit from a transfer cart to the vacuum chamber, the PTs noticed that the bolts that attach the fixture to the unit were not fully seated. The unit is currently in a safe and stable configuration while CNS engineers develop a temporary procedure to remove the tool and inspect the unit and tool. They will develop a path forward based on the results of that inspection. The affected unit is being assembled as part of the recently authorized alteration campaign (see 9/22/17 report).

Readiness Verification (RV): The resident inspectors observed a readiness verification for the Confined Large Optical Scintillator Screen Imaging System 2 (CoLOSSIS 2), a computed tomography imaging system to be used for non-destructive evaluation of pits. Quality assurance technicians (QAT) demonstrated or performed a table-top read through of the various operating procedures to be used for CoLOSSIS 2 operations. The procedures are similar to those in use for the existing CoLOSSIS, and will be applicable to both capabilities once issued and approved. CNS performed an emergency response drill as part of the RV, simulating the response to a breached pit tube. A specific administrative control (SAC) credited for various accidents involving special nuclear material (SNM) requires personnel to evacuate the facility within five minutes in the event of a potential SNM release (see entry below). QATs performed the designated actions to seal the breach, evacuate and control the immediate area, and make appropriate notifications. The control room of the CoLOSSIS 2 bay is separated from the operating area. The resident inspectors questioned how personnel in the control room would be made aware of a potential SNM release in the operating area, allowing them to promptly evacuate the facility. The resident inspectors provided this observation to the drill controllers.

Personnel Evacuation SAC: The resident inspectors held discussions with personnel from CNS engineering, radiation safety, and NPO regarding the use of the personnel evacuation SAC as a credited control to mitigate facility worker doses in the event of an SNM release. The resident inspectors questioned the ability of operators to perform the SAC following a design basis seismic event, given the following potential interferences: while the SNM bays are credited structures, the areas where personnel would evacuate (i.e., ramps) are not all credited structures, and have the potential to be in a dangerous configuration following a seismic event; and the personnel response procedures, effective within the material access areas, for a seismic event direct personnel in SNM bays to remain in the facility, in apparent contradiction with the SAC. These potential interferences are not addressed in the human performance improvement evaluation of the SAC, an assessment performed to meet the intent of the DOE SAC standard. Engineering personnel stated that the ramps in many areas of the plant have been evaluated to withstand a seismic event; however, they are not explicitly credited to do so. Additionally, training is in place for personnel response to an SNM release, and to seismic events; but the training does not provide specific guidance on what actions should be taken if both occur.