

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 21, 2017

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Ramsey Arnold and Zachery Beauvais, Pantex Plant Resident Inspectors  
**SUBJECT:** Pantex Plant Report for Week Ending December 22, 2017

**Technical Safety Requirement (TSR) Violation:** Last week, impairment and restoration (I&R) technicians completed a functional test of a high pressure fire loop (HPFL) pump house valve that controls the domestic water feed into the water tank. During the maintenance, the I&R technicians manipulate two valves to confirm that the water level detection system (WLDS) is working properly and a low water level (LWL) alarm signal is received. Upon completion of the test, the LWL alarm signal could not be reset due to an issue with the sensor in the WLDS. The I&R technicians notified their supervisor and fire protection engineering (FPE), who requested that the physical water tank level be verified prior to departing from the maintenance activity. Due to current operational restrictions in effect with the HPFL (see 10/27/17 report), all three fire pump/tank configurations need to be operational; otherwise, appropriate limiting conditions for operations (LCO) must be entered. FPE failed to recognize that because the WLDS was inoperable, the LCO requiring manual verification of water tank level on a shiftly basis should have been entered. The following morning, facilities management recognized the issue, categorizing it as a degradation in the safety class system when required to be operable and a TSR violation. They entered the LCO, and I&R technicians verified that the water tank level remained full. Subsequently, I&R technicians executed a troubleshooting work order to resolve the LWL alarm signal issue and facilities management exited the LCO.

**Special Tooling:** Production technicians (PT) executed a temporary procedure to remove a unit from a degraded workstand after it previously allowed unexpected free rotation of the unit (see 12/8/17 report). Following the initial event, tooling engineers completed an engineering evaluation to assess operations of all fielded copies of the workstand, evaluate how to safely proceed with ongoing operations for those workstands that were holding a unit, and determine an appropriate path forward to prevent reoccurrence. For the degraded workstand, process engineers developed a temporary procedure for PTs to transfer the unit to a new workstand. The workstand is now awaiting evaluation by production tooling and engineering. For the two other copies of the workstand that had operations in progress, CNS engineering determined that they could safely complete the operations on the units—inadvertent rotation was prevented as the operations were already beyond the activities that impart the highest loads to the anti-rotation feature. Tooling engineers also developed a revision to two tools that will provide an additional anti-rotation feature when attached to the workstand and holding a unit. Production tooling has already completed the necessary changes to the tools and have delivered the revised copies back to the appropriate facilities. All future operations on the program must utilize the revised tools.

**Facility Snow Loads:** CNS declared a potential inadequacy in the safety analysis, later determined to be a positive unreviewed safety question, after discovering that several facilities do not have snow load calculations that account for additional loading due to snow drift build-up, as required by the *American Society of Civil Engineers (ASCE) 7* standard. CNS identified operational restrictions that require personnel in affected facilities to process the unit or nuclear material, either by removing it from the facility or safely storing it in a vacuum chamber, cart, or container, when snow accumulation is occurring. CNS implemented a temporary procedure to check the weather forecast prior to beginning long duration vacuum chamber operations.