

## **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 March 30, 2012

**Fire Protection:** This week, B&W encountered three separate issues involving fire protection systems. The most significant issue involved a safety-class deluge fire suppression system that did not operate as designed. Technicians were working in a bay when they smelled smoke and contacted the emergency services dispatch center for further direction. The dispatcher, per plant procedure, directed the technicians to activate the “pull box” and evacuate the facility. The dispatcher intended to have the technicians activate a fire alarm; however, the only pull switch in the facility was the manual deluge activation switch (the fire alarm “pull box” was located just outside the facility in the ramp). The technicians pulled the manual deluge activation switch and exited the facility. The deluge fire suppression system did not flow water as designed. The technicians happened to be performing work with less than hazard category 2 quantities of nuclear material; however, the fire suppression system in this facility had been maintained to the same safety-class standards as the fire suppression systems in nuclear explosive facilities.

When fire department (FD) personnel arrived at the facility, they quickly determined that the smell of smoke had been caused by authorized hot work on the roof of the facility. Facility management had not communicated this hot work activity to the personnel working in the facility. After FD personnel concluded their initial response to the event, the facility manager directed utilities personnel to impair the fire suppression system for the entire building to allow fire protection engineers to troubleshoot the problem. Fire protection engineering personnel concluded that the problem was isolated to the facility in question and was caused by a solenoid valve that failed to open as designed. This valve, which is approximately 28 years old, worked as designed during the latest annual surveillance testing in October 2011. Fire protection engineers are still evaluating the valve to understand why it did not open.

The other two fire protection issues that occurred this week involved the low water level alarm system indicator for the water supply tanks that feed the High Pressure Fire Loop (HPFL). In the first issue, the low water level alarm system indicator for one of the water supply tanks malfunctioned and alarmed before the water level in the tank reach the minimum required level. The facility manager declared the system inoperable and entered the associated LCO, requiring manual verification of the water level in the tank until the system is operable. Fire protection engineers are working to understand the reason for the malfunction. The second issue involved the failure to enter the LCO for an inoperable low water level alarm system indicator (the associated action statement requires restoration of the minimum required water level in the tank within 14 days). Subcontractors were flow testing a recently replaced portion of the HPFL system, which resulted in a low water level alarm for one of the HPFL water supply tanks. The OC was notified of the alarm, but failed to communicate the low water level alarm to the facility manager, who is responsible for entering the LCO. The LCO was never entered. B&W subsequently declared a technical safety requirement violation for failure to enter the LCO. Utilities personnel have since restored the water level in the tank to the minimum required value.

**W78 Operations:** Late last week, B&W returned to operations on the W78 program for the first time this fiscal year. Operations were suspended last October after a hazard analysis team discovered three insufficiently characterized hazards during a process walkdown. The resultant process change was minor—tooling personnel modified a component removal tool to form a dissipative path to ground. Most of the time prior to resumption of operations was spent establishing a technical basis for performing operations in the new hazard environment.