

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 4, 2014

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Thomas Spatz, Pantex Site Representative  
**SUBJECT:** Pantex Plant Report for Week Ending April 4, 2014

**Lightning Protection System:** Babcock & Wilcox Technical Services Pantex, LLC (B&W) continued to experience problems with the Lightning Location and Protection System (LLPS). (See report for 3/28/2014.) There are eight sensors in the system that link into one LLPS Central computer. The Technical Safety Requirement (TSR) is for a minimum of three sensors working and is based on greater than 99% reliability of lightning detection with three sensors. After several days of going in and out of lightning warnings, the B&W LLPS subject matter expert and Crafts personnel set a parameter in the LLPS Central computer to remove the Happy, Texas, sensor from the algorithm that chooses which sensors participate in the lightning detection. This corrected the problem. B&W is still working with their subcontractor to determine the cause of the problem and why this one sensor was sending erroneous lightning strikes to the LLPS Central computer.

The Site Representative identified a concern with these erroneous lightning strikes and has communicated the concern to B&W management and Nuclear Explosive Safety personnel. During certain nuclear explosive operations, the Production Technicians are required to contact the Operations Center and obtain a clear weather window. The Operations Center then contacts the National Weather Service to obtain the likelihood of lightning producing storms within 35-miles of the plant. On one instance, the Operations Center contacted the National Weather Service and was informed that lightning producing storms were unlikely for 12 hours. Twice after that, the Operations Center declared lightning warnings. After the second lightning warning was cancelled, PTs contacted the Operations Center to obtain a lightning free window to perform an electric test. The Operations Center granted the window based on the information obtained from the National Weather Service more than seven hours earlier. The Operations Center had declared two lightning warnings between the time the National Weather Service was notified and the time they granted the clear weather window, due to the Happy, Texas, sensor. The Site Representative is concerned that there is no linkage between the clear weather window obtained by the National Weather Service and actual indications that there was a lightning strike.

**High Pressure Fire Loop (HPFL) Hardware Tryout:** B&W placed two new jockey pumps into service in the HPFL system approximately one week ago to maintain pressure in the HPFL (See report for 3/28/2014.). This week, B&W took both the older jockey pumps and existing electric pumps out of service to observe the performance of the new jockey pumps. B&W is performing this observation because, at low pressure, there is a possibility that the two electric pumps would start before the two new jockey pumps. This would result in the new jockey pumps never turning on to maintain the system pressure. During the observation period, the HPFL consists of the two new jockey pumps and the two Safety-Class diesel pumps.