

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy J. Dwyer, Technical Director
FROM: Matthew Duncan and Rory Rauch, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending October 16, 2009

High Pressure Fire Loop (HPFL): This week, Emergency Services Dispatch reported the automatic start of both HPFL electric pumps, which are designed to start if the system pressure drops below 120 psig (normal operating pressure is 135-145 psig). As a point of reference, the diesel pumps, which are identified as a part of the minimum HPFL system operability requirements in the documented safety analysis, are designed to start when the system pressure drops to 105 psig. Soon thereafter, the Fire Department discovered an HPFL leak that was believed to be the cause of the automatic pump start. The leak was isolated and the affected non-nuclear facility was immediately placed in maintenance mode. Fire protection believes the leak was caused by external corrosion of the piping, which would be the 23rd corrosion-induced leak of the HPFL since 1995. The HPFL upgrade project, which will replace the ductile iron piping with high density polyethylene, is scheduled to start construction next week and finish in September 2012.

Laboratory Support of W76-1 Operations: Sandia National Laboratories (SNL) has determined that it did not establish and formally communicate the safety impacts of a component performance issue on the W76-1 program in a timely manner. As a result, B&W and SNL have agreed to perform a joint Causal Factors Analysis (CFA) to ensure that such an incident does not recur. B&W and SNL management have committed 9 and 14 individuals, respectively, to the CFA for a two week period in late January. The CFA experts from B&W will hold a one day kick-off meeting and training class for the selected participants in early November.

Procedure Adequacy: Technicians suspended a nuclear explosive operation this week when a procedure could not be performed as written. The procedure was missing a step to remove a gripper tool, which obstructed the technicians from removing a weapon part. A simple recovery procedure to remove the gripper was developed and successfully executed. Work with this surveillance procedure has been performed in the past and all previous procedure revisions were also missing this step. The technicians had relied on training and skill-of-the-craft to know that the gripper should be removed without the need for an explicit procedural step. However, work was stopped this week because of the confusion created by the existence of an explicit gripper removal step for the same task on a separate procedure that is often used by the same group of technicians. For consistency, process engineering will add the explicit removal of the gripper to the surveillance procedure.

Special Tooling: When certain components are lifted above high explosives (or vice versa) using vacuum fixtures, secondary support features such as safety catches are sometimes required to prevent a postulated high explosive violent reaction (HEVR) if the vacuum fixture was to fail. The catches typically do not engage until the components are lifted several inches. PXSO recently asked B&W to evaluate all instances where an HEVR is postulated before the safety catches are fully engaged. B&W responded with a qualitative argument that an HEVR resulting from a drop of a few inches is a low probability event and the time at risk is short. B&W also indicated that PXSO had already deemed this risk acceptable through approval of each applicable HAR. PXSO is evaluating the response.