

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy J. Dwyer, Technical Director

FROM: Matthew Duncan, Timothy Hunt, and Rory Rauch, Pantex Site Representatives

SUBJECT: Pantex Plant Report for Week Ending September 4, 2009

Nuclear Explosive Tester (NET) Repair: A nuclear explosive operation was suspended last week after technicians were unable to connect the grounding strap of an NET to the weapon aeroshell. Upon inspection, the technicians discovered the grounding strap had a different connector screw than that specified in the tester drawing. An extent of condition review revealed that three of the five copies of this tester had the incorrect screw. The three discrepant copies were immediately removed from service. B&W management has been unable to definitively identify when and where these screws were replaced, but believes—based on the susceptibility of the screw to disconnect from the grounding strap—the testers were inappropriately repaired sometime after they had been accepted for operational use. B&W will hold stand-up briefings to reinforce the requirement that in-service repairs of special tooling are forbidden. Instead, special tooling must be tagged out immediately upon any indication of excessive wear or a discrepant condition. Tooling is planning to redesign the subject screw to eliminate its susceptibility to disconnect from the grounding strap.

Fire Department Integration: The Pantex Fire Department (PXFD) and system engineering have been working to resolve the two post-start findings—related to fire department equipment and procedures—from the support activities nuclear explosive safety (NES) master study. A list of all the PXFD routine and emergency response equipment that could be taken into a nuclear explosive area (NEA) has been developed, system engineering is generating a form for the analysis of these items, and a configuration controlled list of the NES-approved items allowed to be taken into the NEA will be generated from the forms. The PXFD has also submitted about 240 departmental procedures to the B&W NES department for review.

Procedure Adherence: Due to apparent minor damage of an internal cable in an NET, the metrology department requested that the tester shop fabricate a replacement cable. The fabrication was not performed per site procedure, which led to the omission of several process steps. A tester shop technician did not perform a peer inspection for quality and a visual inspection by Special Tooling Inspection Electrical (STIE) personnel was also skipped. After fabrication, metrology personnel installed the cable and calibrated the tester. It was then delivered to the field and used on a nuclear explosive. The significance of this failure to follow procedures was limited in this case because metrology performed all required functional checks. The event could have been more significant had these process steps been omitted for a fabrication, modification, or repair that necessitated functional testing at STIE.

Indirect Lightning Effects: Los Alamos National Laboratory has determined that all weapon responses for its detonator cable assemblies, in every configuration, screen for indirect lightning effects (i.e., the hazard generated by time-varying electric and magnetic fields, given the weapon is at most single-point grounded). Lawrence Livermore National Laboratory is on schedule to complete an evaluation of the indirect lightning hazard for its weapon programs by the end of the fiscal year.