

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 24, 2015

TO: S. A. Stokes, Technical Director
FROM: Timothy Hunt, Acting Pantex Plant Site Representative
SUBJECT: Pantex Plant Weekly Report for Week Ending April 24, 2015

Fire Suppression System Technical Safety Requirement (TSR) Violation: A Pantex facilities TSR requires that all ultraviolet (UV) detectors—part of the deluge fire suppression system—be operable when nuclear explosives are in the facility, and able to detect, activate, and send an alert signal in the event of a fire. During recent maintenance turnaround activities in an empty nuclear explosive bay, the UV detectors were impaired to allow a hoist replacement crew to perform work. While this work was underway, a fire system crew entered the facility to perform periodic preventive maintenance (PM) on the system, including the UV detectors. After verifying the UVs were functional, the fire system workers restored the UV detectors to the as-found condition—i.e., impaired—as required by procedure. When all maintenance was completed in the facility, the Consolidated Nuclear Security, LLC (CNS) facility representative placed the bay in operational mode without the UV detectors being returned to service, and a weapon was later brought into the facility and processed. The situation was discovered about a day later. Neither the hoist replacement procedure nor the fire system PM procedure required the UV detectors to be restored to operability after completion of the respective tasks. Instead, it is expected that the CNS facility representatives informally track the status of impaired safety systems and transfer custody of the facility to operations based on this non-rigorous process.

Maintenance Event: On April 8, 2015, during quarterly preventive maintenance on a fire suppression system in a non-nuclear facility, a subcontractor craftsman used an unauthorized tool to perform an action not proceduralized, resulting in a broken pipe nipple and the release of high pressure water from the system. The procedure step required the craftsman to visually check that each riser gauge had a current maintenance sticker. In the subject case, the sticker was on the side of the gauge facing the wall making it difficult to access, and the craftsman used channel locks to rotate the gauge enough to visually check the sticker. The ¼ inch pipe nipple securing the gauge to the fire riser snapped off, spraying pressurized water into an open breaker panel that was supporting electrical work in the area. Although it was communicated during the critique that the crafts normally use a mirror to check inaccessible stickers, it was also learned that it is a common practice to mechanically rotate the gauge. This activity was performed by subcontractor personnel in a non-nuclear facility, however, similar systems support nuclear facilities and lessons learned from this event can be applied to those as well.

Technical Procedures: Following a review several years ago of technical procedures used during nuclear explosive operations, a Board letter dated October 15, 2009, and staff-to-staff interactions encouraged Pantex to implement some upgrades that would enhance the human factors aspect of procedure use and adherence. CNS has begun upgrading the nuclear explosive operations procedures for three programs as well as technical procedures for other hazardous operations (e.g., special nuclear materials, high explosives, joint test assemblies). This week the staff observed an enhanced procedure being used on a specific program with improvements such as the way warnings, cautions, and notes are formatted (i.e., they are now numbered to be consistent with the performance steps) and critical steps are identified. Reportedly, about 10 percent of the technical procedures have been reformatted and upgraded to date.