

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 20, 2016

**MEMO TO:** Steven Stokes, Technical Director  
**FROM:** Ramsey Arnold and Zachery Beauvais, Pantex Site Representatives  
**SUBJECT:** Pantex Plant Report for Week Ending May 20, 2016

**DNFSB Staff Activity:** J. Anderson and J. Deplitch were on site to observe ongoing nuclear explosive safety studies, an emergency management agreement-in-principle meeting, and an emergency exercise.

**Emergency Exercise:** The CNS Emergency Management Services (EMS) division conducted a no-notice emergency exercise, simulating the response to a tritium release from a nuclear explosive bay. The exercise was terminated early in its timeline due to plant events; however, some of the exercise evolution was able to be completed. Participants included personnel from EMS, radiation safety, and operations. Although the exercise ended before the emergency response organization (ERO) had assumed control of the response, some ERO members participated in the exercise as well. Soon after the initial tritium alarm, the Plant Shift Superintendents (PSS) received a call from the participating Production Technicians (PT) informing them of the tritium release. The site representatives note that this information could have constituted a secondary confirmation of the event. Pantex procedures currently require radiation safety to provide confirmation in this type of scenario, which resulted in a delay before the PSSs could categorize the event. Once the radiation safety technicians confirmed the tritium release, the PSSs correctly categorized the event and instituted protective actions requiring all plant personnel to remain sheltered in place for a hazardous material release. CNS EMS management acknowledged this and noted that procedure revisions have already been planned to address the practice. The use of actual meteorological data resulted in protective actions that restricted the ERO from deploying to the Emergency Operations Center. During the hotwash conducted at the incident scene, PTs who had played in the scenario acknowledged an increased level of realism in the exercise scenario.

**Special Tooling:** While attempting to transfer load from the trunnions to the upper supports of a workstand, PTs were unable to engage the interlock levers installed on a piece of special tooling, referred to as the belly band, to complete the operation. PTs paused the operation and the appropriate subject matter experts declared the unit to be safe and stable. An engineering evaluation performed by Tooling and Machine Design (TMD) concluded that the workstand is the most likely cause of the interference. The copy of the workstand in use at the time of the malfunction has had a history of issues. TMD will remove all copies of the workstand from the same manufacturing lot as the malfunctioning copy from service and perform further evaluation. A modification made following a similar malfunction to another installed piece of special tooling, referred to as the boomerang, increased the tolerances to allow the interlock levers to engage. PTs attempted to use the modified boomerang to allow completion of the operation, but were unsuccessful. The workstand, belly band, and boomerang are each credited in the safety basis to support anticipated and abnormal loads. According to design requirements documents, the belly band and boomerang are designed to meet additional safety criteria to maintain positive control of the unit to prevent introduction of unanalyzed energy through the interlocking function. TMD concluded that the malfunction did not degrade the functional requirements of the involved tools to maintain control of the unit and did not report the issue in the DOE Occurrence Reporting and Processing System.