

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 17, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending June 17, 2022

Staff Activity: M. Bradisse augmented resident inspector coverage remotely.

Nuclear Explosive Safety: Last month, NPO transmitted a memo to CNS communicating the results of a nuclear explosive safety study (NESS) for one weapon program. This NESS fulfilled requirements from DOE directives, which state that ongoing weapon operations at Pantex must be fully evaluated every ten years. Of note, this program has been heavily assessed by multiple organizations over the past few years, since the 2019 discovery of internal charge generation hazards led CNS and NPO to pause most operations on this program (see 6/11/21 and 7/30/21 reports for information on readiness assessments, 3/26/21 report for information on a previous nuclear explosive safety change evaluation). NPO authorized resumption of operations while this ten-year NESS was in-progress.

The nuclear explosive safety study group (NESSG) did not note any findings and determined that applicable nuclear explosive safety standards were met for these operations. However, the NESSG did record 21 deliberation topics and 5 senior technical advisor (STA) comments. Of particular concern to the NESSG was the general complexity of the operation, due to operational changes put in place to mitigate the internal charge generation hazards during disassembly operations. New elements of the operation include specially designed components, and multi-page sections of the nuclear explosive operating procedure on how to disassemble and remove those components in the event of an emergency or other abnormal event. The NESSG expressed concern that these elements could place undue burden on the production technicians and could be a case where one hazard (charge generation) is being replaced by other hazards.

One STA comment noted the frequent issues with the Pantex fire protection system. While the STA noted that a study of the fire protection system would be well outside the scope of this NESS, they expressed concern that the frequency of false alarms and other system failures could create a culture of “normalization of deviancy” at Pantex, and suggested that it could be beneficial to conduct a future NESS to evaluate the system and its nexus to nuclear explosive operations. The resident inspectors have also reported several issues with fire detector false alarms and associated follow-on issues (see 4/22/22 and 6/10/22 reports) and major leaks in the high-pressure fire loop (see 2/11/22 and 7/23/21 reports) over the last few years.

Safety Basis: Last week, NPO approved an evaluation of the safety of the situation (ESS) addressing the discovery of electrostatic discharge hazards associated with certain electrically conductive bags used to package components (see 4/22/22 report) for three weapon programs. For certain configurations for one weapon program, CNS identified that new weapon response rules would be necessary, leading to an increase in probability of some low-order consequences; however, CNS determined those scenarios were controlled via existing credited measures. For other configurations, existing weapon response rules and controls were deemed sufficient. The ESS removes all operational restrictions that were previously instituted related to this hazard.