

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 4, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending September 4, 2020

Conduct of Operations: Following a trend of conduct of operations and conduct of engineering issues, this week CNS managers across the site conducted operational pauses of approximately an hour (see 8/28/20 report). During the pauses, managers briefed their staff on twenty-six preventable events that occurred within the months of July and August. The briefing was designed to engage the staff in applying disciplined operations principles, such as questioning attitude and attention to detail, to each event that occurred. The briefing also stressed the severity of outcome of some of the events.

Safety Basis: Early this week, CNS safety analysis engineers declared a potential inadequacy of the safety analysis (PISA) for hazards in one weapon program's hazard analysis report. The design agency provided information to Pantex correcting errors in rule mapping and an error in material-at-risk quantities. CNS safety analysis engineers later upgraded the PISA to a positive unreviewed safety question (USQ) due to an increase in hazard consequences. CNS determined that no operational restrictions were necessary, as the existing control set already adequately addressed the affected hazard scenarios. This situation follows a similar positive USQ determination on the same weapon program; in late July, the applicable design agency noted that the weapon response provided to Pantex included rule mapping errors and provided corrected information (see 7/31/20 report).

Additionally, NPO approved a documented safety analysis change package for removing seismic qualification requirements of thermal monitoring systems within nuclear material staging facilities. NPO previously reviewed the risk, controls, and consequences of removing the qualification from existing thermal monitoring systems, and determined that the change posed no increase in risk or consequence. Future wall and ceiling mounted appurtenances will still require seismic qualification.

Compressed Air Supply: During a material condition walkdown, facility engineers noted damage to the compressed air supply line in one nuclear explosive bay. CNS personnel determined that the damage—a bent portion of the compressed air line—constituted a degradation of a safety class system. The facility representative placed the affected bay in maintenance mode and paused operations. Additionally, CNS personnel isolated the damaged section via an upstream valve, relieved the pressure in the damaged section, and submitted a maintenance work order. Critique participants were not able to determine a timeframe of when the damage occurred; the system is not subject to in-service inspections, and the facility engineers noted that they had not performed a previous material condition walkdown. Pantex's technical safety requirements specify aspects of the compressed air supply as design features; in particular, the compressed air supply must be designed and qualified to remain below a specified working pressure. Due to the damage, facility engineering determined that they could not validate that the line meets the specifications of its design features. The system is designed to be fail-safe through the use of rupture disks and does not require in-service inspections.