

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 5, 2024

TO: Katherine R. Herrera, Acting Technical Director
FROM: A. Holloway and C. Stott, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending January 5, 2024

Staff Activity: The resident inspectors and headquarters staff attended the nuclear explosive safety study group briefing to NNSA management for the Approved Equipment Program Volume Two Nuclear Explosive Safety Master Study (see 8/18/23 and 12/22/23 reports).

Configuration Management: Last week, CNS discovered that the positions of two interconnect sectional post-indicator valves (PIV) within the high pressure fire loop (HPFL) were not correctly reflected in either HPFL status board (see 12/29/23 report). In response to this discovery, CNS personnel conducted an extent of condition review, comparing preventive maintenance data from HPFL sectional quarterly inspections and the HPFL status boards. From this cross comparison, the special mechanical inspector section manager identified five PIVs whose configuration—as recorded on the preventive maintenance documentation—differed from the HPFL status boards (i.e., the maintenance documentation listed an open and locked valve in contrast to the status boards, which denoted a closed valve position). Due to this observation, CNS personnel verified the configuration of all five PIVs in the field, concluding each was in the closed and locked position. Of note, unlike the initial two discrepant PIVs, which are included in this grouping of five, the actual positions of the remaining three valves were correctly documented on the HPFL status boards.

As discussed during the event investigation, CNS impairment and restoration technicians completed the HPFL sectional quarterly inspection of these PIVs in November 2023 but incorrectly documented on the preventive maintenance package that each valve was open. As verification of the valve position is a surveillance requirement per the technical safety requirements (TSR), CNS investigation participants discussed whether this occurrence constituted a TSR violation. Given that (1) CNS fire protection engineering performed an operability determination for the HPFL—to prove the safety class system could perform its safety function—with each PIV closed prior to physically manipulating the valve and (2) the event constituted a documentation error and not failure to perform the surveillance requirement, CNS determined the occurrence did not result in a TSR violation.

Following the event investigation, the resident inspectors further discussed both occurrences with facility engineering, safety analysis engineering, and Pantex infrastructure personnel. One discussion topic involved the lack of pass/fail criteria for the PIV position surveillance activities within the preventive maintenance procedure. Furthermore, during the investigation for the first event—where the HPFL status board did not match the actual configuration of two PIVs—CNS fire protection engineering personnel noted that due to the expected short duration of the valve repositioning, the status boards were not updated. The resident inspectors found this practice to be a contributing factor to the initial event and inquired if additional verification should occur to confirm that the valve repositioning was indeed temporary and the PIV had been reset to the open and locked position. CNS personnel were receptive to this feedback and acknowledged that such topics would be covered during an upcoming causal analysis.