Three Mile Island 1
4Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Maintain Turbine Bypass Valve Simulator Modeling
Green. A self-revealing NCV of 10 CFR Part 55.46(c), "Plant-Referenced Simulators," was identified for Exelon's failure to ensure that the plant-referenced simulator demonstrated expected plant response to normal, transient, and accident conditions to which the simulator has been designed to respond. Specifically, Exelon failed to ensure simulator modeling of once through steam generator (OTSG) turbine bypass valve (TBV) operation was consistent with the actual plant which introduced negative
operator training and challenged orderly unit shutdown on May 7, 2015. The licensee documented their corrective actions for this issue in TMI issue reports (IR) 02496279 and 2497542, which included software changes to the simulator to reflect actual system design, crew remediation, and procedure changes.

The performance deficiency is more than minor because it is associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the simulator difference introduced negative operator training and, as a result, challenged orderly shutdown of the unit on May 7, 2015. The inspectors evaluated the finding in accordance with NRC Manual Chapter 0609, "Significance Determination Process,"
and the corresponding Appendix I, "Licensed Operator Requalification Significance Determination Process." The finding was determined to have very low safety significance (Green) because the impact on operator performance was not during a reportable event. This finding has no cross-cutting aspect assigned because the cause was not representative of current licensee performance. Specifically, the difference in TBV modeling existed since initial simulator certification on June 28, 1990.

Inspection Report# : 2015002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Trend Vibration Data for Safety Related River Water Pump
[DRAFT] The inspectors identified a self-revealing finding of very low safety significance (Green) involving a non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, "Corrective Action Program," because Exelon did not identify and correct a condition adverse to quality on the 'B' nuclear river water pump (NR-P-1B). Specifically, Exelon did not evaluate all available data to identify and correct an adverse vibration trend on NR-P-1B which resulted in unexpectedly exceeding its in-service test (IST) required action level and being declared inoperable on

October 10, 2015. Exelon entered the condition into the CAP under IR 2568763 and emergently replaced the pump, engaged the vendor for short and long term design or material changes to correct the vibration issue and created process and peer check corrective actions to ensure all vibration data is reviewed timely and trends are addressed commensurate with their safety significance.

The performance deficiency is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the elevated vibrations reduced the reliability and capability of NR-P-1B to perform its safety function. The inspectors evaluated the finding using Manual Chapter 0609, Attachment 4, Initial Characterization of Findings, and Appendix A, The Significance Determination Process for Findings At-Power, Exhibit 2, and the inspectors determined this finding to be of very low safety significance (Green) because the degraded condition was not a design deficiency that affected system operability; did not represent an actual loss of function of a system; did not represent an actual loss of function of a single train or two separate trains for greater than its technical specification allowed outage time and did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety significant.

The finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because the station did not thoroughly evaluate the elevated vibration data such that the issue was addressed before NR-P-1B became inoperable. [P.2]

Inspection Report# : 2015004 *(pdf)*

Significance: G Sep 30, 2015
Identified By: NRC
Item Type: FIN Finding
Internal Flooding Licensing Basis Commitment Not Met
Green. The inspectors identified a finding because Exelon failed to meet a commitment made during original licensing to mitigate an internal flooding event. Specifically, Exelon committed to making changes to the fire water supply system to mitigate the impact of
a pipe rupture in the auxiliary building. The inspectors identified that the commitment actions were not completed and no changes to the commitment were identified. The inspectors determined that the failure to perform the modifications to the fire service system, as committed to the NRC in a letter dated November 10, 1972, was a performance deficiency that was reasonably within its ability to foresee and correct. Exelon documented the issue in issue report 2544387, performed an immediate operability evaluation, and developed corrective actions to restore compliance with the commitment.

The inspectors determined that the performance deficiency is associated with the Mitigating Systems cornerstone attribute of protection against external factors (internal flood hazard) and is more than minor because it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the performance deficiency adversely impacted the operator's ability to detect and mitigate a fire service system pipe rupture in the safety related auxiliary building. The inspectors utilized IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," to determine the significance of the performance deficiency. The inspectors determined the finding to be of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent a loss of system safety function or loss of a single train for greater than its allowed technical specification time, does not result in the loss of a high safety-significant maintenance rule train and does not involve the loss of function to mitigate internal flooding events.

The finding is not assigned a cross-cutting aspect because the performance deficiency occurred during original plant

construction and is not indicative of current plant performance.

Inspection Report# : 2015003 *(pdf)*

Significance: G Feb 27, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Untimely Identification and Correction of Degraded BWST Level Transmitter Cold Weather Protection Equipment
The NRC identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR), Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to promptly identify and correct degraded borated water storage tank (BWST) level transmitter instrument line cold weather protection equipment. Specifically, station personnel performed periodic maintenance and testing activities to verify the adequacy of cold weather protection for the BWST level transmitters prior to the onset of cold weather, but did not identify existing uninsulated sections of the instrument lines or degraded heat trace circuit continuity. Consequently, on February 15, 2015, the sensing line for BWST level transmitter DH-LT-808 froze which challenged the operators' capability to successfully perform a critical design basis manual action. Namely, swapover from the injection to recirculation phase of ECCS operation following a LOCA. Immediate actions included entering the applicable technical specification (TS) limiting condition of operation (LCO), thawing the frozen instrument line, restoring DH-LT-808 to service, and exiting the TS LCO. Exelon entered the cold weather protection issue into their corrective action program as issue reports (IR) 2445164, 2451342, 02452858, and 02454925.
This finding was more than minor because it was associated with the equipment and human performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined that the finding was of very low safety significance because it did not affect design or qualification, did not represent a loss of system, did not cause at least one train of BWST level instrumentation to be inoperable for greater than its TS LCO allowed outage time, and did not involve external event mitigation systems. The team assigned a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because station personnel did not follow processes, procedures, and work instructions when performing maintenance and operational activities that should have identified degraded BWST level instrument cold weather protection equipment associated with missing insulation and loss of heat trace circuit continuity. [H.8]
Inspection Report# : 2015007 *(pdf)*

Barrier Integrity

Significance: G Feb 27, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Deficient Design Control for Verifying Reactor Building Fan Assembly Capability to Perform Design Basis Function

The NRC identified an NCV of Title 10 of the CFR, Part 50, Appendix B, Criterion III, "Design Control," for failure to establish and implement adequate design control measures to assure that the reactor building (RB) fan assemblies were capable of performing their design function to mitigate a design basis loss of coolant accident (LOCA) event. Specifically, testing and design calculations used a non-conservative RB ventilation system alignment to determine the brake horsepower of the RB fan motors during a LOCA. As a result, engineers had not evaluated the capability of the RB fan motors to operate above their nameplate full load rating to perform their intended safety function. Additionally, RB fan motor electrical overload protection analyses were incorrect. Immediate corrective actions included interim calculations which demonstrated that the RB fan assemblies would remain capable of performing their safety functions and that the emergency diesel generators were capable of supplying the additional electrical load requirements. Exelon entered the issues into their corrective action program as IRs 2458932, 2458929, and 2451855.
This finding was more than minor because it was associated with the design control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of ensuring the operational capability of the containment barrier to protect the public from radionuclide releases caused by accidents or events. Additionally, the finding was similar to example 3.j in Appendix E of IMC 0612, in that the engineering calculation error resulted in a condition where there was reasonable doubt of the operability of the RB fan assemblies to perform their safety function during a design basis LOCA. The team determined the finding was of very low safety significance because it: did not affect the reactor coolant system (RCS) boundary; did not affect the radiological barrier function of the control room, auxiliary building, or spent fuel pool systems or boundaries; and did not represent an actual open pathway in containment or involve a reduction in the function of hydrogen igniters. This finding was not assigned a cross-cutting aspect because the underlying cause was not indicative of current performance in that the non-conservative calculation error occurred in 1993.
Inspection Report# : 2015007 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related

information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : March 01, 2016