

Three Mile Island 1 1Q/2016 Plant Inspection Findings

Initiating Events

Significance:  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:  Mar 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Deficient Design Control of ECCS Level Transmitter Instrument Line Heat Trace Causes Freezing and Inoperability

A self-revealing non-cited violation of Title 10 of the Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, “Design Control,” was identified for failure to establish and implement adequate design control measures to assure that the borated water storage tank (BWST) was capable of performing its design function to mitigate a design basis loss of coolant accident (LOCA) event. Specifically, a replacement of the safety-grade heat

trace and resulting incompatible electrical configuration of the BWST level transmitter DH-LT-809 rendered its design incapable to prevent instrument line freezing during cold weather periods, contrary to its safety-function to maintain BWST level indication operable in cold weather. Additionally, this adversely impacted the availability of a BWST level indication necessary for operators to reliably perform a critical design basis manual action. Exelon documented these additional issues in IRs 2609417 and 2611119. Corrective actions included replacement of the affected heat trace and a compatible modification to its electrical configuration.

This performance deficiency was more than minor because it was associated with the design control 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. Additionally, the finding was similar to example 2.f in Appendix E of IMC 0612, in that failure to properly maintain cold weather protection equipment for the BWST level transmitters resulted in DH-LT-809 becoming inoperable. The finding was of very low safety significance (Green) 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 finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because station personnel did not follow the heat trace procedure, which did not allow the two types of heat trace to be spliced together, and the engineering change process which would have necessitated an additional engineering review based on the safety-related application of the heat trace associated with BWST level instrument and its cold weather protection equipment (IMC 0310, Aspect H.8). (Section 1R01)

Inspection Report# : [2016001](#) (pdf)

Significance:  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:  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*)

Barrier Integrity

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

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