

Indian Point 3 1Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

Inadequate Maintenance Procedure Results in a Reactor Trip

A self-revealing finding of very low safety significance was identified when Entergy personnel did not use a procedure appropriate to the task for testing of a secondary plant valve, resulting in a transient that led to a manual reactor trip. On February 13, 2013, with Unit 2 at full power, Entergy personnel started testing of a heater drain tank dump valve without electrical isolation and other risk management precautions. When energized control power leads were lifted as specified in the work instruction, two electrically inter-connected valves opened causing loss of heater drain flow to the main feedwater pumps. The transient affected steam generator level and operators initiated a rapid down power followed by a manual reactor trip when steam generator level control limits were challenged. The transient was documented in their corrective action program (CAP) as CR-IP2-2013-721.

The finding was more than minor because the testing activity resulted in a reactor trip. The inspectors performed a Phase 1 screening in accordance with IMC 0609, "Significance Determination Process" and determined the finding to be of very low safety significance (Green) because all mitigating equipment remained available. The finding had a cross-cutting aspect in the area of Human Performance, Resources, because the licensee did not assure that procedures and other resources were available and adequate to assure nuclear safety, including accurate design documentation and procedures to support the work activity. Specifically, the work instruction used for the testing had not been appropriately planned or implemented when the electrical control power ties to valves outside the work scope was neither planned into the work nor recognized by the workers.

Inspection Report# : [2013002](#) (*pdf*)

Mitigating Systems

Significance: G Feb 15, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement an Appropriate Procedure to Ensure That One of Two Strategies Provided Adequate Cooling Water Flow to the SGs per 50.54(hh)(2)

The team identified a non-cited violation (NCV) of Unit 2 Operating License Condition 2.N, Unit 3 Operating License Condition 2.AC, and 10 CFR 50.54(hh)(2) for Entergy's failure to implement guidance for one of the two strategies intended to maintain or restore core cooling by supplying water to the steam generators.

Entergy's failure to provide adequate procedural guidance to maintain or restore core cooling is considered a performance deficiency. This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating

Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent core damage. In accordance Inspection Manual Chapter 0609, Appendix L, "B.5.b Significance Determination Process," the team concluded that this finding is of very low safety significance (Green). The team judged that as-found, one of the steam generator fill strategies was unavailable, because on initial implementation, given the assumed severity of plant damage and the procedural inadequacies, the required flow rate to the steam generators would not have been provided. The team determined that this strategy was recoverable, because the equipment would not have been damaged, and the operator likely would request and receive additional direction from emergency management personnel when they became available, such that the required flow rate could be achieved. The team determined that no cross-cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

Significance:  Nov 09, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Turbine Building HELB Evaluation for Effect on Safety Related Equipment

The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, because Entergy had not verified the adequacy of their design with respect to the potential impact on safety-related electrical equipment in response to postulated turbine building high energy line breaks (HELBs). Specifically, the potential impact on safety-related equipment contained in the adjacent control building cable spreading room and 480V switchgear room had not been adequately evaluated. Entergy entered the issue into their corrective action program to perform an operability evaluation and correct the design deficiency and to determine the need for additional analyses or plant changes to address the HELB issue and conformance with equipment qualification design considerations.

The performance deficiency was determined to be more than minor because it was associated with the design control attribute 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 evaluated the finding in accordance with IMC 0609, Appendix A, The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 - Mitigating Systems Screening Questions. The finding was determined to be of very low safety significance because it was a design deficiency confirmed not to result in a loss of operability. This finding was not assigned a cross-cutting aspect because it was a historical design issue not indicative of current performance. Specifically, the deficiency was associated with an analysis performed in 1973 and was not identified in a subsequent review of operating experience performed in 2000.

Inspection Report# : [2012007](#) (*pdf*)

Significance:  Nov 09, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Verification of Design Analyses for Recirculation Pump NPSH

The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR.Part 50, Appendix B, Criterion III, Design Control, because Entergy had not verified the adequacy of the existing design analyses for internal recirculation pump net-positive-suction-head (NPSH) margin and vapor containment strainer allowable head loss determinations. Specifically, the recirculation pump flow system hydraulic modeling assumption relative to zero leakage through an idle recirculation pump check valve was not verified or consistent with the existing test method which could allow significant backflow with the established pump and check valve test acceptance criteria. Entergy entered the issue into their corrective action program to evaluate and resolve the design deficiency, and performed an operability evaluation to ensure there was adequate NPSH margin.

The performance deficiency was determined to be more than minor because it was associated with the design control attribute 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 evaluated the finding in accordance with IMC 0609, Appendix A, The Significance Determination Process (SDP) for Findings at Power, Exhibit 2 - Mitigating Systems Screening Questions. The finding was determined to be of very low safety significance because it was a design deficiency confirmed not to result in a loss of operability. This finding was not assigned a cross-cutting aspect because it was a historical design issue not indicative of current performance.

Inspection Report# : [2012007](#) (pdf)

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Significance: Jul 20, 2012

Identified By: NRC

Item Type: VIO Violation

Failure to Protect Safe Shutdown Equipment from the Effects of Fire

The inspectors identified a finding of very low safety significance (Green), involving a cited violation of Indian Point Unit 3 Operating License Condition 2.H to implement and maintain all aspects of the approved fire protection program. Specifically, ENO failed to protect required post-fire safe shutdown components and cabling to ensure one of the redundant trains of equipment remained free from fire damage as required by 10 CFR Part 50, Appendix R, Section III.G.2. In lieu of protecting a redundant safe shutdown train, ENO utilized unapproved operator manual actions to mitigate component malfunctions or spurious operations caused by postulated single fire-induced circuit faults. ENO submitted an exemption request (M1090760993) on March 6, 2009, in which it sought exemption from requirements of Paragraph III.G.2, to permit the use of OMAs upon which it had been relying for safe-shutdown in a number of fire areas. However, several OMAs within the exemption request were denied because ENO failed to demonstrate that the OMAs were feasible and reliable, or to appropriately evaluate fire protection defense-in-depth. ENO's performance deficiency delayed achieving full compliance with fire protection regulations and adversely affected post-fire safe shutdown. ENO has entered this issue into the corrective program for resolution. The inspectors found the manual actions in addition to roving fire watches in all affected areas to be reasonable interim compensatory measures pending final resolution by ENO.

ENO's failure to protect components credited for post-fire safe shutdown from fire damage caused by single spurious actuation is considered a performance deficiency. The performance deficiency was more than minor because it affected the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to an external event to prevent undesirable consequences in the event of a fire. Specifically, the use of operator manual actions during postfire safe shutdown is not as reliable as normal systems operation which could be utilized had the requirements of 10 CFR 50, Appendix R, Section III.G.2 been met and, therefore, prevented fire

damage to credited components and/or cables. The inspectors used IMC 0609, Appendix F, Fire Protection Significance Determination Process, Phase 1 and a Senior Reactor Analyst conducted a Phase 3 evaluation, to determine that this finding was of very low safety significance (Green). This finding does not have a cross cutting aspect because the performance deficiency occurred greater than three years ago when the exemption request was submitted to the NRC on March 6, 2009, and is not indicative of current licensee performance.

Inspection Report# : [2012008](#) (*pdf*)

Significance:  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Testing 33 Station Battery (Section 1R15.1)

The inspectors identified a finding of very low safety significance (Green) involving a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XI, "Test Control," because Entergy personnel did not properly document and evaluate test results to ensure that the test requirements were satisfied. Specifically, Entergy personnel did not ensure that the 33 battery modified performance test procedure prescribed the correct vendor discharge rate and that the 33 battery load profile service test and the 33 battery modified performance test prescribed the correct design peak (one minute) load profile amperage. Entergy personnel entered this issue into the corrective action program to evaluate and correct the deficiencies in the battery testing program, perform an extent of condition review, and evaluate the risk associated with delaying testing of the 33 battery until the next refueling outage.

The finding was more than minor because it was similar to NRC IMC 0612, Appendix E, "Examples of Minor Issues," Example 2.c, in that the test control issue was repetitive through multiple performances of the surveillance test over a course of six years. Additionally, the finding was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due to external events. There was not a cross-cutting aspect associated with this finding because the performance deficiency is not reflective of current performance. Specifically, the inspectors determined that Entergy personnel did not adequately implement their modification process when they did not update their test procedures in 2005, following the modification to the 33 station battery.

Inspection Report# : [2012003](#) (*pdf*)

Significance:  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Battery Voltage Drop Calculation

The inspectors identified a finding of very low safety significance (Green) involving an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy staff did not ensure or verify the adequacy of design with respect to the 33 battery sizing calculation. Specifically, Entergy staff used an incorrect methodology for the safety-related 33 battery voltage drop calculation which provided reasonable doubt about the ability of the battery to operate safety-related breakers. Entergy staff entered this issue into the corrective action program and performed an operability evaluation, which concluded that the battery was operable, based on breaker testing and input from the breaker vendor. The inspectors independently reviewed Entergy staff's basis for operability and similarly concluded that the failure to account for control power wiring did not render the 33 battery inoperable.

The performance deficiency was determined to be more than minor because it was similar to example 3.j of NRC IMC 0612, Appendix E, "Examples of Minor Issues," in that, based on the minimum voltage available to the 31 auxiliary

feedwater (AFW) pump breaker being below the manufacturer's rating there was reasonable doubt that the 33 battery would have adequate capacity under all design conditions. In addition, the performance deficiency was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, and did not screen as potentially risk significant due external events. The finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Entergy staff did not thoroughly evaluate the problem such that the resolution addressed causes and extent of conditions, as necessary. Specifically, Entergy staff did not accurately evaluate the inadequate voltage drop calculation for the 33 battery and the extent of condition for the affected components. Inspection Report# : [2012003](#) (*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

Last modified : June 04, 2013