

Surry 2

3Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Mar 30, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation

Loss of thermal barrier cooling due to a failure to follow procedures

A self-revealing finding of very low safety significance that constituted a non-cited violation (NCV) of Technical Specification 6.4.D was identified. Licensee personnel failed to follow procedure 2-IPM-CC-F-207A and caused cooling water flow to the thermal barrier of the Unit 2 Reactor Coolant Pump (RCP) 1A to be isolated for approximately 15 minutes. The finding was entered into the corrective action program as Condition Report 093555. Licensee corrective actions included re-opening the valve, restoring cooling flow to the thermal barrier, and providing training station wide on procedure adherence.

The failure to follow procedure 2-IPM-CC-F-207A was a performance deficiency. The finding is more than minor because it is associated with the human performance attribute of the Initiating Event Cornerstone, and adversely affected the cornerstone's objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The finding, evaluated per the SDP in IMC 0609, Appendix A, is of very low safety significance (Green) because the finding would not have resulted in exceeding the Technical Specification limit for RCS leakage, due to operation of the RCP seal injection system. This finding has a cross-cutting aspect in the area of human performance work practices (H.4.b) because personnel failed to follow a written and approved procedure.
Inspection Report# : [2008002](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2008
Identified By: NRC
Item Type: NCV NonCited Violation

Inadequate Design Control for the EDG Ambient Air Temperature Limit

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion III, "Design Control," for a change in the EDG ambient air temperature operating limits, from 100°F to 120°F, that was made without an adequate design analysis. The licensee entered the issue into their corrective action program (CAP) for resolution using condition report (CR) 102488.

The inspectors concluded that the licensee's failure to perform the necessary analysis to support the increase of the EDG ambient air temperature operating limit from 100°F to 120°F was a performance deficiency. The finding, more than minor in accordance with MC 0612, Appendix E, examples 3j and k, is associated with the design control attribute of the Mitigating System Cornerstone. The cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences was adversely affected. Using Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 4 the inspectors concluded that the finding is of very low safety significance (Green) because the condition did not represent an actual loss of safety function due to the ambient temperature exceeding 100°F but not exceeding 105°F. The finding also was not potentially risk significant due to a seismic, flooding, or severe weather initiating event. A cross-cutting aspect was not assigned to the issue because it is not indicative of recent performance.

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Feb 29, 2008
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Evaluate and Use Limiting Case 4160 VAC Bus Frequency and Voltage in Design Calculations

The inspectors identified two examples of a Green non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for failure to evaluate variations of emergency diesel generator (EDG) output frequency in electrical design loading calculations, and failure to consider worst case 4160 VAC bus voltage in safety related motor starting calculations. This finding was entered into the licensee's corrective action program as condition reports (CR) 091493 and 091494. Planned corrective actions included revision of the EDG loading calculations to incorporate the most limiting voltages and frequencies.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective ensuring the availability, reliability, and operability of the EDGs to perform the intended safety function during a design basis event and the cornerstone attribute of Design Control, i.e. initial design. The inspectors assessed the finding using the SDP and determined that the finding was of very low safety significance (Green) because the deficiencies did not result in any EDG being inoperable based upon additional analysis that showed that the EDGs had sufficient margin to accommodate the increased loading due to worst case acceptably high EDG output frequency; and all safety related motor loads remained operable since they were still capable of starting with the revised worst case low voltage values.

Inspection Report# : [2008006](#) (*pdf*)

G

Significance: Feb 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Use Appropriate Acceptance Criteria for Testing Battery Voltage at the One Minute Mark

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, for incorrect acceptance criteria in test procedure 1-EPT-0106-01, Main Station Battery 1A Service Test. This finding was entered into the licensee's corrective action program as condition report 091906. Planned corrective actions included revision of the main station battery test procedures to include the correct voltage at the one minute mark.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective ensuring the availability, reliability, and operability of the station batteries to perform the intended safety function during a design basis event and the cornerstone attribute of Procedure Quality, i.e. maintenance and testing procedures. The inspectors assessed the finding using the SDP and determined that the finding was of very low safety significance (Green) because the deficiency did not result in station batteries being inoperable based upon a recent review of station battery discharge test results.

The inspectors determined that the lack of a thorough evaluation of condition report 022112, which addressed deficiencies in station battery test procedures such that resolutions addressed causes, was a significant cause of this performance deficiency. Failure to thoroughly evaluate problems such that resolutions address causes is directly related to the Corrective Action Program component of the cross-cutting area of Problem Identification and Resolution and the aspect of thorough evaluation of problems (P.1(c)).

Inspection Report# : [2008006](#) (*pdf*)

G

Significance: Feb 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Use Limiting Case High dP In 2-FW-MOV-260A Design Calculations

The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for failure to evaluate the most limiting differential pressure (dP) for opening valve 2-FW-MOV-260A, auxiliary feedwater (AFW) cross-tie motor-operated valve (MOV). This finding was entered into the licensee's corrective action program as condition report 091698. Planned corrective actions included internal inspection of the valve and revision of the evaluation that identified the most limiting dP for opening.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective ensuring the availability, reliability, and operability of the AFW system to perform the intended safety function during a design basis event and the cornerstone attribute of Design Control, i.e. initial design and plant modifications. The inspectors assessed the finding using the SDP and determined that the finding was of very low safety significance (Green) because the deficiency did not result in 2-FW-MOV-260A being inoperable based upon additional analysis which showed that the MOV had sufficient margin to accommodate opening against the worst case high dP. The inspectors determined that the lack of control or understanding of the actual margin to maximum allowable dP to open 2-FW-MOV-260A was a significant cause of this performance deficiency. Failure to maintain design margins is directly related to the Resources component of the cross-cutting area of Human Performance and the aspect of maintenance of plant safety by the maintenance of design margins (H.2(a)).

Inspection Report# : [2008006](#) (*pdf*)

G

Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to meet ASME Section XI requirements for replacement of safety injection valve 2-SI-82

The inspectors identified a Green non-cited violation of 10 CFR 50.55a(g)(4) for failure to meet requirements of ASME Section XI for the replacement of safety injection valve 2-SI-82 performed during the last Unit 2 refueling outage. The licensee failed to perform a visual examination for leakage of the upstream pipe to valve weld and failed to obtain the Authorized Nuclear Inservice Inspection (ANII) signature on the NIS-2 Form. The NRC relies on the ANII approval to ensure Code compliance. The licensee promptly entered the issue into their Corrective Action Program as condition report CR024453 for resolution during the next outage.

The finding is more than minor because it affects the Mitigating Systems cornerstone objective and is associated with the cornerstone attribute of operability, availability, and reliability of a mitigating system, in that, the system was not properly tested and certified after repair/replacement activities. The inspectors assessed the finding using the Significance Determination Process and determined the finding to be of very low safety significance because there was no loss of operability of the safety injection system. A contributing cause of the violation

was related to the Decision-Making component of the cross-cutting area of Human Performance, and the aspect of using conservative assumptions in decision making, in that, the licensee knew they did not meet the intent of the Code requirement but mistakenly believed that they met the Code as-written. (H.1.b).

Inspection Report# : [2007005](#) (*pdf*)

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Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Carbon Dioxide Suppression System Degraded in Two Fire Areas in Unit 1 and Three Fire Areas in Unit 2

The NRC identified a Green NCV of Unit 1 and Unit 2 Operating License Condition 3.I because the installed carbon dioxide (CO₂) fire suppression systems could not be shown to deliver the design basis gas concentration. This finding applied to the Unit 1 and Unit 2 normal switchgear rooms, the Unit 2 cable tunnel, and the Unit 1 and Unit 2 cable vaults. The licensee had implemented or initiated system modifications to address this violation.

The finding is more than minor because it affects the Mitigating Systems cornerstone objective of ensuring reliability and capability of systems that respond to initiating events and the cornerstone attribute of protection against external factors, i.e. fire. The finding was determined to be of very low safety significance in a Significance Determination Process Phase 3 analysis. For the cable vault areas, the analysis showed that fires could initiate scenarios which could challenge the mitigating systems. However, the risk of these scenarios was calculated to be in the very low significance band. Analysis with respect to the normal switchgear rooms led to the conclusion that it was of very low safety significance primarily due to the frequency of fires potentially challenging mitigating systems being relatively low and the availability of unaffected safety-related shutdown systems. The finding for the Unit 2 cable tunnel was also of very low safety significance because it did not have any significant fixed ignition sources (cables were thermoset type) and the probability for transient combustible fires or hot work initiated fires damaging important cables was judged to be low.

Inspection Report# : [2007005](#) (*pdf*)

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Significance: Oct 12, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Promptly Identify and Correct Procedures Related to the Operation of the Auxiliary Feedwater System

NRC identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to revise procedure ECA 0.0, Loss of all AC Power, as corrective action for a condition identified by the licensee that could cause a loss of Net Positive Suction Head (NPSH) to the Turbine Driven Auxiliary Feedwater Pump (TDAFW), and potential damage to the only available feedwater pump during a loss of all AC power event. Other procedures where single AFW pump operation could cause inadequate NPSH had been revised.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance because no actual safety function was lost. The cause of the finding is related to the cross-cutting area of problem identification and resolution and the aspect of lack of thoroughness of evaluation such that the resolution addresses the causes and extent of conditions. (IMC 0305, P.1.c) [Section 40A2.a(3)(ii)]

Inspection Report# : [2007008](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : November 26, 2008