

Surry 1 3Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Jan 12, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Appropriate Procedural Guidance for Component Cooling Water Flow to the Thermal Barrier Heat Exchangers

The team identified a non-cited violation of Technical Specification 6.4.A.3, "Unit Operating Procedures and Programs," for the licensee's failure to provide appropriate procedural guidance to assure the operator's ability to detect and correct a component cooling (CC) water low flow condition through the thermal barrier heat exchanger. The licensee entered this in their corrective action program as CR 455255.

The licensee's failure to provide appropriate procedural guidance to assure that CC flow to thermal barrier heat exchangers was maintained greater than 35 gpm was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Initiating Event Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to translate the appropriate minimum flow requirement value into procedures adversely affected the operator's ability to detect and correct a CC water low flow condition through the thermal barrier heat exchanger which could result in entering an event with a back-up system in a degraded condition. In accordance with Nuclear Regulatory Commission Inspection Manual Chapter 0609.04, "Initial Screening and Characterization of Findings," the team conducted a Phase 1 Significance Determination Process screening and determined the finding to be of very low safety significance (Green) because assuming worst case degradation, the finding would not exceed the Technical Specification limit for any reactor coolant system leakage, and the finding did not affect other mitigation systems. The finding was reviewed for cross-cutting aspects and none were identified since the performance deficiency was not indicative of current licensee performance. [Section 1R21.2.1]

Inspection Report# : [2011011](#) (*pdf*)

Mitigating Systems

Significance: G Sep 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Operability Procedure for "1B" Charging Pump

The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to implement operability procedure, OP-AA-102, "Operability Determinations." Specifically, personnel declared the "1B" charging pump on Unit 1 operable for a period of approximately 7 days without adequate supporting technical information when the speed increaser (gearbox) was observed with excessive lube oil foaming to the point where sight glass oil level was not visible and could not be

determined. The licensee has entered this issue into their CAP as CR 461276.

The inspectors determined that the failure to provide adequate technical information to support the immediate operability declarations of the „1B? charging pump, as required by operability procedure, OP-AA-102, “Operability Determinations”, was a performance deficiency. The inspectors reviewed IMC 0612, Appendix B, “Issue Screening” and determined that the finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Equipment Performance 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 foaming condition and the inadequate operability determinations resulted in both a degradation of pump reliability and affected pump availability. The inspectors also noted that this issue was part of a larger programmatic concern associated with the licensee's implementation of its operability process and procedure.

The inspectors screened this finding in accordance with IMC 0609, “Significance Determination Process,” Attachment 4, “Initial Characterization of Findings,” and IMC 0609, Appendix A, “SDP for Findings At-Power”, and determined the finding was of very low safety significance, Green, since it was a deficiency determined not to have resulted in the loss of operability or functionality of a single train for greater than its TS allowed outage time. The cause of this finding involved the cross-cutting area of human performance, the component of decision making, and the aspect of using conservative assumptions, H.1(b), because the multiple immediate operability determinations concluding that the "1B" charging pump was operable were non-conservative in light of the lack of supporting technical information.

Inspection Report# : [2012004](#) (*pdf*)

Significance: G Jan 12, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Design Control Measures to Verify the Adequacy of TOLs at Degraded Voltage Conditions

The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to use the most conservative motor currents in the analysis to determine the adequacy of thermal overloads (TOLs) at degraded voltage conditions. The licensee entered this into their corrective action program as CR 455657, CR454839, CR454841, CR454863, CR455218, and CR 456448.

The licensee’s failure to use the most conservative motor currents in the analysis to determine the adequacy of TOLs at degraded voltage conditions was a performance deficiency. The performance deficiency was more than minor because it was similar to Inspector Manual Chapter 0612, “Power Reactor Inspection Reports,” Appendix E, “Example of Minor Issues”, Example 3.j, which states that if “the engineering calculation error results in a condition where there is now a reasonable doubt on the operability of a system or component” the performance deficiency is not minor. Further, the performance deficiency was more than minor because it was associated with the design control 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 failure to use the most conservative motor currents in the analysis to determine the adequacy of TOLs at degraded voltage conditions resulted in a reasonable doubt that the 480V safety related motors could perform their safety function. In accordance with Nuclear Regulatory Commission Inspection Manual Chapter 0609.04, “Initial Screening and Characterization of Findings”, the team conducted a Phase 1 Significance Determination Process screening and determined the finding to be of very low safety significance (Green) because it was a design deficiency confirmed not to have resulted in the loss of operability or functionality. The finding was reviewed for cross-cutting aspects and none were identified since the performance deficiency was not indicative of current licensee performance. [Section 1R21.2.10]

Inspection Report# : [2011011](#) (*pdf*)

Significance: G Jan 12, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Instructions in the Operations Surveillance Procedure for the Charging Pump Service Water System

The team identified a non-cited violation of Technical Specification 6.4.A.7, “Unit Operating Procedures and Programs”, for the licensee’s failure to provide adequate instructions in the surveillance procedure for the charging pump service water system. The licensee entered this into their corrective action program as CR 456318.

The licensee’s failure to provide adequate procedural guidance to flush the charging pump service water system cross-tie components was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality 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 surveillance procedure that was developed as a corrective action for CR 169929 was inadequate in that it did not flush the cross-tie piping that was used in procedures 0-AP-12, and 0-FCA-7. The failure to adequately flush the cross-tie lines resulted in a lack of reasonable assurance that the components would perform their intended function. In accordance with Nuclear Regulatory Commission Inspection Manual Chapter 0609.04, “Initial Screening and Characterization of Findings”, the team conducted a Phase 1 Significance Determination Process screening and determined the finding to be of very low safety significance (Green) because it was not a design deficiency, did not represent the loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Additionally, the team assessed the finding using Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” and determined that the finding was of very low safety significance (Green) because the finding only affected the ability to reach and maintain cold shutdown conditions. The team identified a cross-cutting aspect in the resources component of the Human Performance area. Specifically, the licensee failed to provide an adequate procedure for the maintenance of the charging pump service water system. [H.2(c)]. [Section 1R21.2.10]

Inspection Report# : [2011011](#) (*pdf*)

Significance: G Jan 12, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Monitor or Perform Effective Preventive Maintenance on the AAC Diesel Ventilation Supply Dampers and Exhaust Fans Louvers

The team identified a non-cited violation of 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” for the licensee’s failure to perform condition monitoring or otherwise implement an effective preventive maintenance program for the alternate alternating current (AAC) diesel generator ventilation supply dampers and exhaust louvers. The licensee entered this into their corrective action program as CR 449898, CR 450609, CR 454673, and CR 454653.

The licensee’s failure to perform condition monitoring or otherwise implement an appropriate preventative maintenance program for the AAC ventilation dampers and louvers was a performance deficiency. This performance deficiency was more than minor because it was associated with equipment performance attribute of the mitigating system 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 lack of an effective preventative maintenance program on the ventilation system affected the reliability of the exhaust fan louvers, as evidenced by exhaust fan louver, 0-VS-F-702, being stuck open, and challenged the assurance that these components would remain capable to support the functionality of the AAC diesel. In accordance with Nuclear

Regulatory Commission Inspection Manual Chapter 0609.04, "Initial Screening and Characterization of Findings", the team conducted a Phase 1 Significance Determination Process screening and determined the finding to be of very low safety significance (Green) because it was not a design deficiency, did not represent the loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding was reviewed for cross-cutting aspects and none were identified since the performance deficiency was not indicative of current licensee performance. [Section 1R21.2.13]

Inspection Report# : [2011011](#) (*pdf*)

Significance:  Jan 12, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Design Control Measures to Verify the Adequacy of Inputs Into the RS NPSHa Analysis

The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's use of a non-conservative net positive suction head required (NPSHr) value in the analysis that determined the adequacy of the net positive suction head available (NPSHa) for the recirculation spray pumps. The licensee entered this into their corrective action program as CR 454236.

The licensee's use of a non-conservative NPSHr value in the analysis that determined the adequacy of the NPSHa for the recirculation spray pumps was a performance deficiency. The performance deficiency was more than minor because it was similar to Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues", Example 3j, which states that if the engineering calculation error resulted in a condition where there was a reasonable doubt on the operability of a system the performance deficiency is not minor. Further, the performance deficiency was more than minor because it was associated with the design control 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 higher NPSHr for the outside recirculation spray pumps, due to the temperature correction, exceeded the NPSHa and resulted in a reasonable doubt that the outside recirculation spray pumps could perform their functions under the most limiting conditions. In accordance with Nuclear Regulatory Commission Inspection Manual Chapter 0609.04, "Initial Screening and Characterization of Findings", the team conducted a Phase 1 Significance Determination Process screening and determined the finding to be of very low safety significance (Green) because it was a design deficiency confirmed not to result in loss of operability or functionality. The finding was reviewed for cross-cutting aspects and none were identified since the performance deficiency was not indicative of current licensee performance. [Section 1R21.2.14]

Inspection Report# : [2011011](#) (*pdf*)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions to Address Rainwater Intrusion into the Unit 1 RPS Relay Room

The inspectors identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee failing to correct a condition adverse to quality. Specifically, the licensee failed to correct a known degraded building seam which allowed rainwater into the Unit 1 Reactor Protection System (RPS) Relay Room on four separate occasions over a four year time period.

The inspectors concluded that the failure to correct the known degraded building seam was a performance deficiency that was within the licensee's ability to foresee and correct and which should have been prevented. The finding was more than minor because it is associated with the Mitigating Systems cornerstone attribute of Protection Against

External Factors - Weather (heavy rain), 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 potential existed that under design basis rainfall conditions the water would migrate to a point where RPS equipment would be impacted. The inspectors determined that this finding was of very low safety significance because the finding was not a design issue, did not result in a loss of a safety function of a mitigating system, and did not screen potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of this finding involved the cross-cutting area of problem identification and resolution, the component of corrective action program, and the aspect of appropriate corrective actions [P.1(d)], because the licensee failed to take appropriate and timely corrective actions commensurate with the safety significance of the rainwater intrusion events. (Section 40A2)

Inspection Report# : [2011005](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Significance: G Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain a Standard Emergency Action Level Scheme for Earthquakes

The inspectors identified a self-revealing non-cited violation (NCV) of 10 CFR 50.54(q) for the failure to maintain in effect, an emergency plan which meets the requirements of 10 CFR 50.47(b)(4). Specifically, a standard emergency classification and action level scheme which includes facility system parameters. The licensee's plan contained Alert and Notification of Unusual Event (NOUE) emergency action levels (EALs) which relied on indications from the station's Strong Motion Accelerograph (seismic monitoring equipment) while that instrument was incapable of functioning. The licensee entered the problem into their corrective action program as condition report, CR-469813.

The inspectors determined that the failure to properly maintain the seismic instrumentation was a performance deficiency and resulted in an emergency plan requirement which could not be met. The performance deficiency was determined to be more than minor because it is associated with the Emergency Preparedness Cornerstone attribute of Emergency Response Organization Performance. The finding impacted the cornerstone objective because it is associated with a program element not meeting 50.47(b) planning standards to protect the health and safety of the public in the event of a radiological emergency. Specifically, the licensee's ability to declare an Alert and NOUE based on Natural Phenomenon was degraded. The finding was assessed for significance in accordance with NRC Inspection Manual Chapter (IMC) 0609, using the Phase I SDP worksheets for emergency preparedness and was determined to be very low safety significance because there was a degraded risk-significant planning standard function. IMC 0609, Appendix B states, "FAILURE TO COMPLY means that a program is noncompliant with a REGULATORY REQUIREMENT." The inspectors determined the licensee was noncompliant with 10 CFR 50.54 (q), 50.47(b)(4), and App. E, Section IV.B in that the Natural Phenomenon Emergency Action Level contained Alert and NOUE classification decision inputs requiring Strong Motion Accelerograph activation, which could not function due to inadequate maintenance. This would require use of other means to determine whether the classification thresholds had been exceeded. Using IMC 0609 App. B, Figure 5.4-1, Significance Determination for Ineffective EALs and Overclassification, the inspectors determined that an Alert (HA1.1) would not be declared, resulting in Green significance. The cause of this finding involved the cross cutting area of human performance, the component of resources, and the aspect of complete, accurate, and up-to-date procedures [H.2(c)] (Section 40A2.3)

Inspection Report# : [2012002](#) (*pdf*)

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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