

## Surry 1 3Q/2015 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** G Jun 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **“A” MDAFW Pump Motor Outboard Bearing Damaged**

A self-revealing NCV of Surry Technical Specification (TS) 6.4.D was identified because the Unit 1 “A” motor driven auxiliary feedwater (MDAFW) pump motor outboard bearing thermocouple was improperly installed while installing a new motor on the MDAFW pump in November, 2013. The improper thermocouple installation in the bearing caused the bearing to fail while the pump was running on January 5, 2015. This issue was documented in the licensee’s corrective action program (CAP) as condition report (CR) 568663.

The inspectors concluded that the failure of the licensee to use a procedure to remove and reinstall the “A” MDAFW pump motor thermocouples was a performance deficiency (PD). Using Manual Chapter 0612, Appendix B, Issue Screening, dated September 7, 2012, the inspectors determined that the PD was more than minor because it was associated with the human performance attribute of the Mitigating Systems Cornerstone, and it 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 incorrect installation of the motor outboard bearing thermocouple eventually damaged the bearing and caused the “A” MDAFW pump to become inoperable. Using Manual Chapter 0609.04, “Initial Characterization of Findings,” dated June 19, 2012, the finding was determined to affect the Mitigating Systems Cornerstone. The inspectors screened the finding using IMC 0609, Appendix A, “Significance Determination Process (SDP) for Findings at-Power,” dated June 19, 2012, and determined that it screened as Green because the deficiency did not affect the design or qualification of the AFW system and it did not represent a loss of system safety function. This finding has a cross-cutting aspect in the Challenge the Unknown aspect of the human performance area, H.11, because the individuals involved in removing and installing the thermocouples did not stop when faced with a work order that did not have the appropriate procedure reference for the action they were taking. (Section 1R12)

Inspection Report# : [2015002](#) (*pdf*)

**Significance:** G May 29, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Ensure a Functional Alternate Shutdown System Alignment during Appendix R Fire Events**

The inspectors identified a Green non-cited violation (NCV) of Surry’s Operating License, Condition 3.I, Fire Protection, for the licensee’s failure to ensure a functional alternate safe shutdown flow path during an Appendix R fire. The licensee entered this issue into their corrective action program as condition report

(CR) 580928.

The licensee's failure to ensure a functional alternate shutdown system alignment during an Appendix R fire event 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. Specifically, Surry failed to implement appropriate corrective actions to mitigate the spurious closure and subsequent damage of more than one motor operated valve as identified in an engineering evaluation. The failure to re-open credited Appendix R MOV(s) would result in the loss of secondary heat removal and/or RCS make-up capability during Appendix R fire events. The finding was screened in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and determined to be of low safety significance (Green). A Region II senior risk analyst performed a bounding phase 3 analysis that determined the finding represented an increase in core damage frequency of  $< 1 \text{ E-6 /year}$ . No cross cutting aspect was assigned because the performance deficiency did not occur within the last three years. (Section 1R05.05.01)  
Inspection Report# : [2015008](#) (pdf)

**Significance:**  May 29, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Implement In-service Testing and Inservice Inspections for Charging Cross-tie Components.**

The inspectors identified a Green NCV of 10 CFR 50.55(a) for the licensee's failure to implement in-service testing (IST) and in-service inspections (ISI) for charging cross-tie components. The licensee entered this issue into their corrective action program as CRs 581385 and 581386.

The licensee failed to scope the charging cross-tie manual isolation valves and piping into the ISI and IST programs. This was a performance deficiency that resulted in the subsequent failure to perform ISI and IST activities required by the ASME OM Code-2004 and 10 CFR 50.55a(f) and (g). The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone. Specifically, the site's failure to perform required inspections and testing for charging cross-tie components, since 1989, resulted in a lack of reasonable assurance that the charging cross-tie function could perform its required function. The finding was screened in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and determined to be of low safety significance (Green) because it did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event. No cross cutting aspect was assigned because the performance deficiency did not occur within the last three years. (Section 1R05.05.02)

Inspection Report# : [2015008](#) (pdf)

**Significance:**  May 29, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Multiple Design Deficiencies in the Fire Protection Program**

The inspectors identified a Green NCV of Surry's Operating License, Condition 3.I, Fire Protection, for design control deficiencies in the fire protection

program. The licensee entered this issue into their corrective action program as condition report CRs 581390.

The licensee's failure to adequately implement the design control requirements in the fire protection program as required by Topical Report, DOM-QA-1, "Dominion Nuclear Facility Quality Assurance Program Description," Section 3.2, "Design Control Program" was a performance deficiency. The finding was more than minor because it was associated with the design control attribute and affected the Mitigating Systems cornerstone. Specifically, design control deficiencies resulted in a lack of assurance that the design control requirements were being adequately implemented within the fire protection program. The finding was screened in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and determined to be of low safety significance (Green) because it finding did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event. No cross cutting aspect was assigned because the performance deficiency did not occur within the last three years. (Section 1R05.11.02)

Inspection Report# : [2015008](#) (*pdf*)

## Barrier Integrity

**Significance:**  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Failure to conduct a detailed visual examination of the concrete-liner interface for the Unit 1 containment**

An NRC-identified NCV of 10 CFR 50.55a, "Codes and Standards," was identified for the licensee's failure to conduct a detailed visual examination of the concrete-liner interface for the Unit 1 containment, per the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) Section XI, Subsection IWE 1241, Table IWE-2500-1, Category E-C, Item E 4.11. This issue was documented in the licensee's CAP as CR 578448.

The licensee's failure to conduct a detailed visual examination of the concrete-liner interface of the Units 1 and 2 containment in accordance with the ASME BPVC Section XI, Subsection IWE 1241, Table IWE-2500-1, Category E-C, Item E 4.11, was a PD that was within the licensee's ability to foresee and correct. Using Manual Chapter 0612, Appendix B, Issue Screening, dated September 7, 2012, the inspectors determined that the PD was more than minor because, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, detailed visual inspections of the containment metallic liner provides assurance that the liner remains capable of performing its intended safety function, and in the absence of such inspections, corrosive conditions could progress to challenge that capability. Using Manual Chapter 0609.04, "Initial Characterization of Findings," dated June 19, 2012, the finding was determined to affect the Barrier Integrity Cornerstone. The inspectors screened the finding using IMC 0609, Appendix A, "Significance Determination Process (SDP) for Findings at-Power," dated June 19, 2012, and determined that the finding was of very low safety-significance (Green) because the finding did not represent an actual open pathway in the physical integrity of the reactor containment. The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance. (Section 1R08)

Inspection Report# : [2015002](#) (pdf)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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## Miscellaneous

**Significance:** N/A May 29, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Failure to Perform Required 50.59 Evaluations and Failure to Update the UFSAR for Plant Changes Associated with RCP Seal Cooling During Fire Events**

Green: The inspectors identified a Green NCV of 10 CFR 50.59 and 10 CFR 50.71(e) for the licensee's failure to perform 50.59 evaluations; and failure to update the UFSAR for plant changes associated with reactor coolant pump (RCP) seal cooling during fire events. The licensee entered this issue into their corrective action program as condition report CRs 5813388.

The licensee's revision of fire safe shut down procedures; and the installation of a different reactor coolant pump seal package without completing the required 50.59 evaluations was a performance deficiency. Additionally, the licensee's failure to update the UFSAR as required by 10 CFR 50.71(e) was a performance deficiency. The UFSAR did not adequately describe the charging cross-tie function; and did not adequately describe the fire protection program's procedural isolation of the RCP seals for the entire duration of an Appendix R event. In accordance with the Reactor Oversight Process, the performance deficiencies were more than minor because

they were associated with the design control attribute of the Mitigating Systems Cornerstone. The performance deficiencies were also assessed using traditional enforcement because the NRC's ability to perform its regulatory function such as, license amendment reviews and inspections was affected. The finding was screened in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process," and determined to be of low safety significance (Green) because it did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event. No cross cutting aspect was assigned because these performance deficiencies did not occur within the last three years. (Section 1R05.11.01)

Inspection Report# : [2015008](#) (*pdf*)

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