

Saint Lucie 2 1Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Verify the Adequacy of the Unit 1 and Unit 2 Steam Generator Tube-to-Tubesheet Welds Design

An NRC-identified, Non-cited Violation of 10 CFR Appendix B, Criterion III, “Design Control,” was identified for the failure to verify the adequacy of the Unit 1 and Unit 2 replacement steam generators (RSGs) design with respect to the requirements in the American Society of Mechanical Engineers Boiler Pressure Vessel Code (ASME Code), Section III, Article NB-3000, for the primary stress and fatigue analyses of the pressure-retaining tube-to-tubesheet welds. The licensee entered the issue in the corrective action program, and performed the required analyses for the Unit 1 and Unit 2 RSGs to demonstrate that the design met the ASME Code requirements.

The inspectors used the guidance in NRC Inspector Manual Chapter (IMC) 0612, Appendix B, “Issue Screening,” and determined that the performance deficiency was more-than-minor because it was associated with the design control attribute of the Initiating Events Cornerstone, and adversely affected the cornerstone objective. Specifically, the failure to verify that the required stress and fatigue analyses were performed in accordance with the ASME Code did not support the objective of limiting the likelihood of primary-to-secondary leakage events that could upset plant stability and challenge critical safety functions during shutdown, as well as power operations. The inspectors evaluated this finding using NRC IMC 0609, Appendix A, Significance Determination Process for Findings At-Power, Exhibit 1 – Initiating Events Screening Questions. The finding screened as Green because the stress calculations demonstrated that there was no degraded steam generator (SG) tube condition where one tube could not sustain three times the differential pressure across a tube during normal full power, and none of the SGs violated the “accident leakage” performance criterion. Additionally, the stress calculations demonstrated that the finding did not result in a condition that exceeded the reactor coolant system leak rate for a small loss of coolant accident (LOCA), or affected other systems used to mitigate a LOCA resulting in a total loss

of their function (e.g., Interfacing System LOCA). The inspectors determined that no cross-cutting aspect was associated with this finding because the performance deficiency occurred more than 3 years ago, and it was not reflective of present performance. (Section 40A2)

Inspection Report# : [2015004](#) (*pdf*)

Mitigating Systems

Significance: G Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Inadequate Corrective Actions to Prevent Failure of the 2C ICW Pump Motor (Section 40A2.3)

Green. A self-revealing, NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” was identified for the licensee’s failure to implement corrective actions to prevent failure of the 2C intake cooling water (ICW) pump.

The failure was a result of several air box baffle bolt-heads breaking off due to corrosion and impacting the motor stator winding, which caused an electrical ground on the winding. Corrosion of the bolts was attributed to not having functional motor heater elements. Corrective actions included repairing the motor heater elements on the 2A and 2C ICW pump motors. This issue was entered into the licensee's CAP as AR 02077661.

The licensee's failure to implement adequate corrective actions to prevent the Unit 2C ICW pump motor winding failure that resulted from extensive corrosion of the baffle bolts was a PD and was within the licensee's ability to prevent. The PD was more-than-minor because if left uncorrected, the PD has the potential to lead to a more significant safety concern. Specifically, not repairing a degraded or non-functioning motor winding heater in a timely manner prohibits protection against the humid salt water environment which the motor windings are exposed to during standby operational conditions and creates an environment for accelerated corrosion on the baffle bolts and motor winding leading to premature failure of the motor. Manual Chapter 0609 Appendix A, "The Significance Determination (SDP) Process for Findings At-Power," Exhibit 2 "Mitigating Systems Screening Questions," dated June 19, 2012, was used to further evaluate this finding. The finding screened as Green because the finding represented neither an actual loss of function of at least a single train for greater than its technical specification (TS) Allowed Outage Time, nor two separate safety systems out of service (OOS) for greater than its TS Allowed Outage Time. Manual Chapter 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings," dated May 9, 2014, was used to further evaluate the shutdown safety significance of this finding. The finding screened to Green because the inspectors answered "no" to all the screening questions listed under "Exhibit 3 - Mitigation System Screening Questions." The finding involved the cross-cutting area of the evaluation component in problem identification and resolution (PI&R) because the organization did not thoroughly evaluate the function of the motor winding heater to ensure that resolutions address causes and extent of conditions commensurate with the long term operability of the ICW pump motors. Specifically, after identifying that the motor winding heater on the 2C ICW pump motor was not functioning, the licensee entered this issue into the CAP but did not adequately evaluate the significance of having a non-functional heater on the motor winding and instead deferred the heater repairs to be completed at the next motor overhaul which was scheduled to be performed in four years [P.2]. (Section 40A2.3)
Inspection Report# : [2016001](#) (*pdf*)

Significance: G Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Corrective Actions to Prevent Fouling of the CCW HXs (Section 40A2.3)

Green: An NRC-identified NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to implement corrective actions to prevent fouling of the 2B component cooling water (CCW) heat exchanger (HX) that resulted in the number of blocked tubes exceeding the HX's maximum analyzed limit for plugged tubes. The licensee's failure to implement adequate corrective actions was a performance deficiency and was within the licensee's ability to prevent. Corrective actions included installing temporary equipment to ensure adequate continuous sodium hypochlorite (SH) is injected through the CCW HXs to prevent biological fouling. The licensee entered this issue into the CAP.

The performance deficiency was more-than-minor because if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. Specifically, inadequate SH injection may cause extensive fouling and can lead to a common mode failure of the CCW HXs preventing the required cooling of safety-related structures, systems, and components (SSCs) analyzed heat loads during a design basis accident (DBA). Using Manual Chapter 0609.04, "Significance Determination Process Initial Characterization of Findings," Table 2 dated June 19, 2012, the finding was determined to affect the Mitigating Systems Cornerstone. Manual Chapter 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2 "Mitigating Systems Screening Questions," dated, June 19, 2012, was used to further evaluate this finding. The finding screened as Green because the

finding did not represent either an actual loss of function of at least a single train for greater than its Technical Specification (TS) Allowed Outage Time, or two separate safety systems out-of-service (OOS) for greater than its TS Allowed Outage Time. The finding involved the cross-cutting area of the resolution component in Problem Identification and Resolution (PI&R) because the organization did not take effective corrective actions to address issues in a timely manner commensurate with the safety significance of the CCW HX, in that, even after the repeat fouling issue had been identified on the 2B CCW HX, the immediate resolution of inadequate SH injection remained unresolved until the inspectors addressed this issue with plant management [P.3] (Section 40A2.3).

Inspection Report# : [2015004](#) (*pdf*)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Procedural Non-compliances Relating to Installed Scaffold Located Near Safety-related SSCs (Section 40A2.4)

A Green NRC-identified NCV of TS 6.8.1, "Procedures and Programs," was identified for the licensee's failure to properly implement written procedures covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. Specifically, the licensee routinely failed to complete engineering evaluations to determine the acceptability of scaffolds that did not meet the 2 inch clearance requirement of Next Era Nuclear Fleet Administrative Procedure MA-AA-100-1002, "Scaffold Installation, Modification, and Removal Requests." The licensee's failure to erect scaffold in compliance with the Next Era Nuclear Fleet Administrative Procedure was a performance deficiency. This issue has been entered into the licensee's CAP.

The performance deficiency was more-than-minor because it was associated with the Mitigating Systems Cornerstone Attribute of Protection against External Factors, Seismic, and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, routinely failing to complete engineering evaluations of scaffold clearance issues could lead to the continued use of inadequately installed scaffolds, ultimately posing a risk of rendering safety-related equipment inoperable during normal and adverse conditions, such as a design basis seismic event. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," dated June 19, 2012, the inspectors determined the finding affected the Mitigating Systems Cornerstone. Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, was used to further evaluate this finding. The finding screened as Green because 'no' was answered to all four screening questions, i.e. the finding did not represent an actual loss of function of any piece of plant equipment for any amount of time. The finding involved the cross-cutting area of PI&R in the aspect of resolution, in that the organization did not take effective corrective actions to address the scaffolding issues in a timely manner, as evidenced by a period of five months in which the inspectors continued to identify non-conformances with erected scaffold [P.3] (Section 40A2.4).

Inspection Report# : [2015004](#) (*pdf*)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: FIN Finding

Non-willful Compromise of a Remedial Examination Required by 10 CFR 55.59 Affected the Equitable and Consistent Administration of the Exam

An NRC-identified severity level IV (SLIV) NCV of 10 CFR 55.49, "Integrity of examinations and tests" was identified based on a determination that a non-willful compromise of a remedial examination required by 10 CFR 55.59 affected the equitable and consistent administration of the examination. An associated finding of very low safety significance (Green) was also identified based on a determination that a biennial written remedial examination

was not prepared and approved in accordance with licensee procedures.

The licensee's failure to develop and administer a remedial examination in accordance with TR-AA-220-1004, Licensed Operator Continuing Training Annual Operating and Biennial Written Exams, was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Human Performance 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. Specifically, the performance deficiency caused an incident of exam compromise that affected the equitable and consistent administration of the exam and resulted in a licensed operator being authorized to resume licensed duties prior to the condition being corrected. Additionally, the finding adversely affected the integrity of a biennial written remedial examination, which impacted the facility's ability to appropriately evaluate a licensed operator. The licensed operator subsequently passed another remedial examination that was one hundred percent different from his original exam and the previous remedial exam. The operator also demonstrated satisfactory performance while performing licensed operator duties and participating in the licensed operator requalification program.

The traditional enforcement violation was evaluated using the NRC Enforcement Policy dated January 28, 2013, and revised February 4, 2015. The inspectors determined the violation was SLIV per Section 6.1.d.2 because the associated finding was evaluated by the SDP as having very low safety significance (i.e., Green). The finding was directly related to the cross-cutting aspect of procedure adherence of the cross-cutting area of Human Performance because the training staff did not follow applicable guidance for the preparation and approval of licensed operator biennial written remedial examinations. [H.8] (Section 1R11)

Inspection Report# : [2015004](#) (pdf)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: FIN Finding

NRC Biennial Written Examinations Did Not Meet Qualitative Standards

An NRC-identified finding related to 10 CFR 55.59, "Requalification," was identified based on a determination that greater than 20 percent of the 2014 biennial written exam question sampled for review were flawed. The finding did not involve a violation of NRC requirements.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance 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. Specifically, the finding adversely affected the quality and level of difficulty of biennial written examinations, which potentially impacted the facility's ability to appropriately evaluate licensed operators. The risk importance of this issue was evaluated using IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)."

The qualitative standards used by the inspectors were defined in TR-AA-220-1004, Licensed Operator Continuing Training Annual Operating and Biennial Written Exams. Because more than 20 percent, but less than 40 percent, of the questions reviewed were flawed, Blocks 4 and 5 of Appendix I characterized the finding as having very low safety significance (Green). A review of the cross-cutting aspects was performed and no associated cross-cutting aspect was identified. (Section 1R11)

Inspection Report# : [2015004](#) (pdf)

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Comply with Technical Specification 3.0.3

The NRC identified a non-cited violation of Technical Specification (TS) 3.0.3 for the licensee's failure to take the required actions to shut down the plant in a timely manner. The licensee's failure to perform an adequate operability evaluation in accordance with the requirements of EN-AA-203-1001, "Operability Determinations / Functional Assessments," was a performance deficiency. Specifically, the licensee failed to identify in an Immediate Operability Determination that through-wall leakage on the ASME Class 1 pipe riser for vent valve V3811 rendered both ECCS subsystems inoperable, requiring entry into TS LCO 3.0.3 and performance of the applicable action statements. The licensee entered this into their corrective action program as AR 02021204.

The performance deficiency was more than minor because it was associated with the equipment reliability 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. The inspectors determined the finding was associated with the mitigating systems cornerstone and required a detailed risk evaluation because the finding represented a loss of function on the high pressure safety injection system. A detailed risk evaluation determined the significance of the finding was Green. The inspectors determined the finding was related to the cross-cutting aspect of Evaluation (P.2) of the Problem Identification and Resolution area because the licensee's failure to thoroughly evaluate the issue commensurate with its safety significance led to the licensee failing to perform an appropriate operability evaluation.

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

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Unauthorized Entry into a High Radiation Area

A self-revealing, Green non-cited violation (NCV) of Technical Specifications (TS) 6.12.1.b occurred when a worker entered a high radiation area (HRA) without being made knowledgeable of dose rates in the area prior to entry. Specifically, on 11/09/2015, a worker performing a plant surveillance under radiation work permit (RWP) 15-004, "Clearance Tags, Surveillances and Inspections," climbed into overhead in the Unit 2 (U2) Pipe Penetration room and received a electronic dosimeter (ED) dose rate alarm. The licensee entered this issue into the corrective action program (CAP) as Action Request (AR) 02090225 and took immediate corrective actions which included restricting the operator's access to the radiological control area (RCA), performing followup surveys and convening a human performance review board to examine causal factors for the purpose of determining corrective actions.

This finding was determined to be more than minor because it is associated with the Occupational Radiation Safety

Cornerstone attribute of Human Performance and adversely affects the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Workers permitted entry into HRAs with inadequate knowledge of current radiological conditions could receive unintended occupational exposures. The finding was evaluated using the Occupational Radiation Safety Significance Determination Process (SDP). The finding was not related to ALARA planning, nor did it involve an overexposure or substantial potential for overexposure, and the ability to assess dose was not compromised. Therefore, the inspectors determined the finding to be of very low safety significance (Green). The inspectors noted that the operator responded properly to the ED dose rate alarm thereby limiting his potential for unintended exposure. This finding involved the cross cutting aspect of [H8] procedure adherence because the individual understood the RWP requirements but failed to comply with them. (2RS1)

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

Public Radiation Safety

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Assess Potential Gaseous Effluents Released from Containment Equipment Hatch Openings during a Loss of Negative Pressure

The inspectors identified a Green non-cited violation of Technical Specification 6.8.1 for the failure to implement procedures for the monitoring, evaluating, and reporting of gaseous effluents in accordance with the methodology in the Off-Site Dose Calculation Manual. Specifically, there was no program in place to assess potential effluent releases from containment equipment hatch openings during periods when negative pressure was lost. The licensee took immediate corrective actions including placement of a low-volume air sampler near the Unit 1 Reactor Containment Building equipment hatch, and entered the issue into their corrective action program as AR 02037629.

The performance deficiency is more than minor because it is associated with the Public Radiation Safety cornerstone attribute of Programs and Processes and adversely affects the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was assessed using the Public Radiation Safety Significance Determination Process. Based on the fact that routine (i.e. non-accident) effluents released from an equipment hatch are unlikely to contribute significantly to public dose, this finding does not represent a substantial failure to implement the effluent program and was determined to be of very low safety significance (Green). This finding has a crosscutting aspect of Operating Experience (P.5) because the licensee failed to recognize the applicability of regulatory issues experienced by other plants regarding equipment hatch monitoring.

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

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

Significance: N/A Sep 17, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Untimely 10 CFR50.72 Notification (Section 40A3.2)

Severity Level IV: The NRC identified an NCV of 10 CFR 50.72(b)(3)(iv)(A) for the licensee's failure to notify the NRC within 8 hours of an event that was not part of a pre-planned sequence which resulted in a valid actuation of an emergency AC electrical power system. During Unit 2's refueling outage with Unit 2 in Mode 5 and the 2A emergency diesel generator (EDG) properly tagged out of service for pre-planned maintenance, a phase-to-phase fault on the 6.9kV non-segregated bus from the 2A startup transformer (SUT) to the non-safety related 2A1 bus caused the 1A and 2A SUTs supply breakers to open. The safety-related 4.16kV 2A3 bus experienced an under voltage condition which generated a valid actuation signal for the 2A EDG. The licensee failed to recognize this event as reportable pursuant to 10 CFR 50.72(b)(3)(iv)(A). The licensee generated corrective actions (AR 2075703) which included restoring compliance within a reasonable period of time after the violation was identified, and training the appropriate personnel to understand why the situation was reportable pursuant to 10 CFR 50.72.

The inspectors determined that the failure to report required plant events or conditions to the NRC had the potential to impede or impact the regulatory process. As a result, the NRC dispositioned this violation of 10 CFR 50.72 using the traditional enforcement process instead of the SDP. The inspectors determined that this issue was more than minor because it is similar to a Severity Level IV example provided in Section 6.9 of the NRC Enforcement Policy. Cross-cutting aspects are not assigned to traditional enforcement violations (Section 40A3.2).

Inspection Report# : [2015003](#) (*pdf*)

Significance: N/A Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Problem with LER Reporting

The NRC identified multiple non-cited violations of regulatory requirements that it has decided to group into an example of a problem associated with the licensee's reporting program. This problem includes violations of 10 CFR 50.73, "Licensee Event Report System," for the licensee's failure to address all the applicable reporting criteria and 10 CFR 50.9, "Completeness and Accuracy of Information," for the licensee's failure to submit complete and accurate information to the Commission, as part of Licensee Event Report (LER) 050000389/2014-001 dated September 22, 2014 . These violations were material to the NRC because the failure to include the appropriate reporting criteria and provide complete and accurate information had the potential to impede or impact the regulatory process and, therefore, is subject to traditional enforcement as described in the NRC Enforcement Policy. The inspectors used the examples provided in Section 6.9, "Inaccurate and Incomplete Information or Failure to Make a Required Report," of the NRC Enforcement Policy, and concluded that this problem was appropriately categorized as Severity Level (SL) IV. The licensee placed these issues into their corrective action program as AR 02021204 and has submitted a revised LER.

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

Last modified : July 11, 2016