

Saint Lucie 2

3Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Jun 24, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Meet the Combustible Control Requirements Specified By NFPA 805 Section 3.3.1.2(1)

Green. Inspectors identified a Green, non-cited violation (NCV) of 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805," for the licensee's failure to comply with the combustible control requirements for work platforms that were located in the Intake Cooling Water Pump House. The issue was entered into the site's corrective action program as AR 2137088.

The licensee's failure to adequately implement combustible material control requirements in procedures ADM-27.11 and Procedure 0010434 was a performance deficiency (PD). The (PD) adversely impacted the Initiating Events cornerstone attribute of Protection Against External Factors (Fire) and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Additionally, if left uncorrected, the deficiencies in the combustibles control program could result in wood platforms being staged in other areas of the plant. The finding was screened in accordance with NRC IMC 0609, "Significance Determination Process," dated June 19, 2012, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, which determined that, an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, review was required because it was a fire prevention finding. The finding was determined to be of very low safety significance Green, at Step 1.4.1.B because the impact of a fire would be limited to no more than one train of equipment important to safety. The inspector identified a cross-cutting aspect in work management because the licensee failed to ensure that the site's combustible control requirements were met during the installation and use of wood platforms in the ICW pump house (H.5).

Inspection Report# : [2016011](#) (*pdf*)

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:  Apr 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Green: The inspectors identified a green non-cited violation of Technical Specification (TS) 3.3.3.1 for failing to take the required TS actions after identifying a condition adverse to quality that

Green: The inspectors identified three examples of a green non-cited violation of Title 10 Code of Federal Regulations (CFR) Part 50.49.e.(5) “aging” for the licensee’s failure to assure conformance with the qualification procedures and methods specified in IEEE 323-1974 “IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations” as amended by RG 1.89 “Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants.” In response to this issue, the licensee’s immediate corrective actions included an immediate determination of operability, in which the licensee concluded that that for the specific examples documented in this violation, the affected components were operable. The licensee entered these issues in the corrective action program for resolution as AR2128753, AR02128366, AR2128755, and AR2135777.

The three performance deficiencies were determined to be more than minor because they were associated with the Mitigating Systems cornerstone attribute of Design Control 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, with time in service, significant aging degradation of SSCs increases the likelihood these SSCs could unpredictably fail when called upon to perform their designed safety function. The team used IMC 0609 Attachment 4, “Initial Characterization of Findings,” issued June 19, 2012, and IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because the findings were a deficiency affecting the design of a mitigating structure, system, or component (SSC), and the SSC maintained their operability or functionality. This finding was assigned a cross-cutting aspect of H.6 Design Margins in the Human Performance Area because the finding was indicative of current licensee performance and the

licensee did not operate and maintain equipment within design margins and margins were not carefully guarded and were changed without a systematic and rigorous process (WP.2).

Inspection Report# : [2016010](#) (*pdf*)

Significance: G Apr 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Define, Justify, and Document Activation

Green: The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to verify, justify, and document an activation energy used to determine the thermal lifespan of safety related cable insulation. In response to this issue, the licensee's immediate corrective actions included an immediate determination of operability, in which the licensee concluded that affected components remained operable. The licensee entered this issue in the corrective action program for resolution as AR2128756.

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. Specifically, using incorrect activation energies provided erroneous environmental qualification of Class 1E components, which affected the reliability of the acoustic monitor when called upon. The team used IMC 0609 Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, and IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because the findings were a deficiency affecting the design of a mitigating structure, system, or component (SSC), and the SSC maintained their operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Inspection Report# : [2016010](#) (*pdf*)

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:  Mar 04, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Consider Elevated Temperature Effects on MOV Actuator Output Capability

Green: The NRC identified a non-cited violation of Title 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to consider the impact of elevated ambient temperatures on motor operated valve (MOV) actuator output. The licensee entered the issue into the corrective action program and also evaluated the elevated ambient temperature effects on several affected station MOVs and determined the MOVs remained operable.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control 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 licensee did not ensure the capability of several MOVs scoped into their MOV program because they did not consider reduced actuator output torque due to elevated temperatures. The team determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. This finding was assigned a cross-cutting aspect of Evaluation in the Problem Identification and Resolution Area because the finding was indicative of current licensee performance, and the licensee did not thoroughly evaluate the issue identified in AR 2030822, such that the design issue of accounting for elevated temperature was resolved [P.2].

Inspection Report# : [2016008](#) (*pdf*)

Significance:  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 4OA2.4).

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)

Barrier Integrity

Emergency Preparedness

Significance:  Apr 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Comply with TS requirements for Containment High-Range Radiation Monitors (CHRRM)

Green: The inspectors identified a green non-cited violation of Technical Specification (TS) 3.3.3.1 for failing to take the required TS actions after identifying a condition adverse to quality that affected the operability of the containment high range radiation monitors (CHRRMs) (RD-26-40 and RD-26-41). The licensee declared the CHRRMs for both Unit 1 and Unit 2 inoperable and identified alternate methods for assessing emergency action levels, performing core damage assessment and dose assessment. The licensee entered these issues in the corrective action program for resolution as AR2128751 and AR2135780.

The performance deficiency was determined to be more than minor because it was associated with the Emergency Response Organization Performance attribute of the Emergency Preparedness Cornerstone and adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was evaluated using IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process." The finding is of very low safety significance (Green) because the finding affected an EAL that was rendered ineffective such that any Site Area Emergency would not be declared for a particular off-normal event, but because of other EALs, an appropriate declaration could be made in a degraded manner (e.g., delayed). This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Inspection Report# : [2016010](#) (pdf)

Occupational Radiation Safety

Significance:  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

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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