Saint Lucie 1
1Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Provide Detailed Work Instructions Resulted in a Unit Transient (Section 4OA2.2)
Green. A self-revealing finding was identified for the licensee's failure to provide adequate work instructions for the circulating water system 1B1 traveling water screen drive motor replacement. Specifically, the inadequate work instructions resulted in a plant transient in order to remove the associated circulating water pump (CWP) from service. This issue was placed in the licensee's corrective action program (CAP) as action request (AR) 2095560. The licensee completed the following corrective actions: (1) Counsel all maintenance supervisors in regard to having a questioning attitude and to seek guidance if unsure; (2) Rewire the 1B1 traveling screen drive motor for the proper rotation; (3) Install labels indicating the proper rotation for all eight traveling screen drive motors; (4) Submit document change requests to update the total equipment database; (5) Update all work orders (WO) for the remaining screen drive starter replacements to provide motor rotation direction and mark the post-maintenance test (PMT) step as a critical step, and; (6) Change clearance requests for traveling screen work to include directions to have electricians on station prior to returning the control switch to automatic.

The failure to provide adequate work instructions for replacement of the 1B1 traveling screen motor was a performance deficiency (PD). The PD was more than minor because it was associated with the procedure quality attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the inadequate WO instructions resulted in installing the 1B1 traveling screen drive motor incorrectly on December 4, 2015. After the maintenance, the system automatically started and the screen rotated backwards. The backward rotation allowed accumulated debris to be transported to the 1B1 debris filter system (DFS) filter and caused it to overload. The resulting high differential pressure (DP) on the DFS filter necessitated the need to lower unit power (plant transient) and
required removal of the 1B1 CWP from service. The finding was determined to be of very low safety significance (Green) based on Exhibit 1, "Initiating Events Screening Questions," found in IMC 0609, "Significance Determination Process," Appendix A, "Significance Determination Process (SDP) for Findings At-Power" (June 19, 2012). This was due to the fact that the finding did not cause a loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined the cause of this finding was associated with a cross-cutting aspect of ensuring risks are evaluated and managed before proceeding in the Challenge the Unknown component of the human performance area. Specifically, the licensee did not have a healthy questioning attitude and did not recognize the need to seek guidance when installing a new circulating water system traveling screen motor [H.11]. (Section 4OA2.2)
Inspection Report# : 2016001 *(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 4OA2)
Inspection Report# : 2015004 *(pdf)*

Significance: G Aug 09, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Follow Reactor Protection System Surveillance Procedure Resulting in Reactor Plant Trip (Section 4OA3.3)
A Green, self-revealing, NCV of TS 6.8.1 was identified for the licensee’s failure to adequately implement surveillance procedures during reactor protection system (RPS) testing. Specifically, the licensee failed to implement as-written operations surveillance procedure 1-OSP-63.01, “RPS Logic Matrix Test,” when operators failed to close two trip circuit breakers (TCBs) prior to proceeding to the next section of the procedure. This resulted in an unplanned automatic reactor trip when a second pair of TCBs were opened. Corrective actions completed for this event included a human performance review that was conducted by the shift manager, operations director and plant general manager, initially implementing around the clock management oversite, and revising the RPS logic matrix test procedure to change it from a reader/doer procedure to a procedure with more concurrent verification steps. The licensee entered this issue into their corrective action program as AR 2065821.

The licensee’s failure to follow procedure 1-OSP-63.01, “RPS Logic Matrix Test,” as-written is a performance deficiency. This performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events Cornerstone and it adversely affected the associated cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions and resulted in an actual plant trip. The inspectors evaluated the risk of this finding using IMC 0609, “Significance Determination Process,” Attachment 4, “Initial Characterization of Findings” and IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power.” The inspectors determined that the finding was of very low safety significance because it did not result in both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The finding involved the cross-cutting area of human performance, with an aspect of avoiding complacency (H.12), in that the licensee failed to ensure that personnel effectively used human performance tools during the logic matrix test to ensure procedure steps were completed as required (Section 4OA3.3).

Inspection Report# : 2015003 *(pdf)*

Mitigating Systems

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 4OA2.3)
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 4OA2.3).

Inspection Report# : 2015004 *(pdf)*

Significance: G 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 4OA2.4)
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: G 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: G 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 l, "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: G Sep 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Unsecured Utility Cart With An Unrestrained Operating Pedestal Fan Near Safety-related ECCS Equipment (Section 1R15)
NRC-identified, NCV of Technical Specification (TS) 6.8.1, Procedures and Programs, was identified for the licensee's failure to implement written procedures covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. Specifically, the licensee failed to follow procedural requirements to properly secure a pedestal fan positioned on a wheeled cart to the extent required to prevent a potential for adverse interaction with safety-related systems structures or components (SSCs) during a design basis seismic event. Failure to control equipment located near safety-related SSCs to prevent the equipment from interacting with safety-related SSCs during a design basis seismic event was a performance deficiency. Immediate corrective actions included removing the cart and fan assembly from the area and entering this issue into the corrective action program.

The performance deficiency was more than minor because the issue was associated with the Mitigating Systems Cornerstone attribute of Protection Against External Factors (seismic) and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related SSCs to respond to initiating events to prevent undesirable consequences. Specifically, during a design basis seismic event the unsecured cart and unrestrained fan could have damaged the emergency core cooling system low and high pressure safety injection flowrate transmitters causing control room operators to have a loss of safety injection flowrate indication and a small amount of system

leakage during accident mitigation. 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, 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 inspectors answered "No" to all four screening questions. The finding involved the cross-cutting aspect in the area of human performance associated with training because the organization failed to provide training and ensure knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values to ensure temporarily placed equipment located near safety-related SSCs was adequately secured to prevent interaction during a seismic event [H.9] (Section 1R15).

Inspection Report# : 2015003 *(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: G 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

Last modified : July 11, 2016