Saint Lucie 2
2Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2014
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to Follow Foreign Material Exclusion Requirements in Reactor Vessel Maintenance Procedures
A self-revealing non-cited violation (NCV) of Unit 2 Technical Specification 6.8.1.a was identified for the licensee's failure to follow the requirements in reactor vessel maintenance procedures, to exclude foreign material from the reactor coolant system (RCS) during refueling outage activities. The licensee entered the issue in the corrective action program as action request 1957565. Corrective actions included evaluation of the foreign object damage, and revision of foreign material exclusion (FME) controls in outage maintenance procedures.

The performance deficiency was more than minor because if left uncorrected, it had the potential to lead to more significant safety concerns. Specifically, the failure to follow FME controls in maintenance procedures had the potential to lead to the introduction of foreign material in the RCS, which could result in degradation of RCS components, such as the fuel cladding, RCS pressure boundary cladding, and steam generator (SG) tubes. The inspectors screened this finding utilizing IMC 0609 Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, and IMC 0609 Appendix A, "The Significance Determination Process for Findings at Power," dated June 19, 2012. The finding screened as Green using Exhibit 1, Section D, "Initiating Events Screening Questions," screening question 2, because the finding did not result in a condition where one or more SGs violated "accident leakage" performance criterion (i.e., did not involve degradation that would exceed the accident leakage performance criterion under design basis accident conditions). The inspectors determined this performance deficiency had a resources crosscutting aspect (H.1) in the human performance area, because the licensee's administrative procedure for FME practices, MA-AA-101-100, was inadequate to support nuclear safety, in that it allowed for a less conservative approach to FME in the reactor cavity.
Inspection Report# : 2014004 *(pdf)*

Mitigating Systems

Significance: G 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)*

Significance: G Mar 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Risk Assessments on the Emergency Core Cooling System
The inspectors identified a Green non-cited violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," paragraph (a)(4), for the licensee's failure to conduct adequate risk assessments prior to performing surveillance testing on the emergency core cooling system (ECCS). Consequently, ECCS surveillance testing was completed while the unit was in a Green online risk configuration when the risk should have been elevated to Yellow. Corrective actions completed included implementing instructions via an Operations Standing Order to declare any system, structure or component unavailable when it is declared inoperable unless an assessment is completed to show that operator actions can restore the safety function before it is needed.
The licensee's failure to implement the online risk assessment program as required by ADM-17.16, Implementation of the Configuration Risk Management Program, was a performance deficiency (PD). Specifically, in each of the three examples identified by the inspectors, the plant's online risk was reclassified from Green to Yellow when properly assessed as established by the licensee's online risk monitor (OLRM). The inspectors determined that the PD was more than minor because it adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone. Specifically, the failure to identify increases in operational risk and implement risk management actions adversely affected the reliability of those systems relied upon to respond to plant events. The finding was determined to be of very low safety significance (Green) because for each instance, the Incremental Core Damage Probability Deficit for the timeframe the ECCS was unavailable was less than 1E-6. The inspectors determined that the finding had a cross-cutting aspect of Training in the Human Performance area, because the control room operators did not have adequate risk insight guidance and an adequate understanding regarding use of operator actions to take credit for safety function availability, causing incorrect application of the on-line risk monitoring tool [H.9].
Inspection Report# : 2015001 *(pdf)*

Significance: G Mar 06, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish Appropriate Procedural Limitations to Prevent Exceeding Non-LOCA Event Analysis

Assumptions for Steam Generator Blowdown Flow Rate
Green.
An NRC-identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for the licensee's failure to assure that design basis assumptions for steam generator blowdown (SGBD) flow rate were translated into procedural guidance. Specifically, procedures 1-NOP-23.02 and 1-AOP-09.03 for Unit 1, and 2-NOP-23.02 and 2-AOP-09.03 for Unit 2, allowed SGBD flow rates significantly in excess of the assumed values in non-loss of coolant accident (LOCA) event analyses. The licensee entered the issue into their corrective action program as action requests (ARs) 2030177, 2031217, and 2031218. The licensee's immediate corrective actions included performing a functionality assessment of the SGBD systems for both units, which included; re-performing the event analyses, issuing an operations department night order to temporarily provide operators appropriate direction for limiting the SGBD system flow, and plans to update the analyses of record, plant procedures, and the UFSAR with new system limitations.
The performance deficiency was determined to be more than minor because it affected the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring reliability, availability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee did not ensure the capability of the secondary side heat removal systems to respond to design basis non-LOCA events because analysis assumptions were not translated into procedural limitations for the SGBD system. The inspectors determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. The inspectors determined that the issue was indicative of present licensee performance because the analyses were performed in 2013. The finding was associated with the cross-cutting aspect of design margins, in the area of human performance, because the organization did not operate and maintain equipment within design margins. [H.6] (Section 1R17)
Inspection Report# : 2015007 *(pdf)*

Significance: G Jan 16, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Procedural Non Compliances Relating to Temporarily Installed Ladders Located Near Safety-related SSCs
The NRC identified a Green, non-cited violation of Technical Specification (TS) 6.8.1, Procedures and Programs, for the licensee's failure to establish, implement, and maintain written procedures covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. Specifically, the licensee failed to track, inspect and evaluate the placement of temporarily installed ladders (TILs) that were touching or placed near safety-related Structures, Systems, and Components (SSCs) with the potential to interact with the SSCs during a design basis seismic event. Corrective actions completed included removing TILs that were no longer being used and entering the remaining ladders into the corrective action program (CAP) for tracking and inspection, and reviewing whether any ladder required an engineering evaluation.
The licensee's repeated failure to track, inspect, or complete an engineering evaluation on TILs located near safety-related SSCs as required by licensee procedures ADM-27-21 and MA-AA-100-1008 was a performance deficiency. 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, routinely not tracking, inspecting or completing engineering evaluations of TILs that are touching or located near safety-related SSC could allow ladders to be installed, which interact with safety-related equipment resulting in equipment rendered inoperable during a design basis seismic event. The finding screened as green because the finding did not represent an actual loss of function of at least a single Train for > its TS Allowed Outage Time OR two separate safety systems out-of-service for > its TS Allowed Outage Time. The finding involved the crosscutting area of Problem Identification and Resolution, in the aspect of Identification, in that non-compliances associated with TILs had been long-term issues, which the licensee had failed to identify and enter into the CAP. As a result, the ladder issues remained unnoticed and unaddressed in the CAP until identified by the inspectors [P.1]
Inspection Report# : 2015001 *(pdf)*

Significance: G Dec 31, 2014
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Follow Work Instructions During Installation of Unit 2 Vent Valve V3811
A self-revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," resulted from the licensee's failure to implement work order instructions to install Unit 2 safety-related vent valve V3811 in accordance with dimensions specified by the engineering design. The failure to implement the work order instructions was a performance deficiency that resulted in inoperability of the emergency core cooling system (ECCS) Class 1 pressure boundary due to a through-wall crack and self-revealing leak. The licensee entered the issue into the corrective action program (CAP) as action request (AR) 01980340 and completed corrective actions to repair the leak and install V3811 with the correct dimensions.

The performance deficiency was more than minor because it adversely impacted the operability of safety-related equipment that mitigates the consequences of a loss of coolant accident, and therefore, 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 screened the finding under the mitigating systems cornerstone using Attachment 4 (June 19, 2012) and Appendix A (June 19, 2012) of Inspection Manual Chapter 0609, "Significance Determination Process" (June 2, 2011). The inspectors determined the finding required a detailed risk evaluation because the finding was associated with a loss of high pressure safety injection (HPSI) system function and evaluated the condition using the significance determination process (SDP) module in the St. Lucie Unit 2 Standardized Plant Analysis Risk (SPAR) model. The change in core damage frequency (CDF) was greater than the 1E-7 threshold and the issue was reviewed by a regional senior reactor analyst (SRA) to confirm the result and verify that external events contribution would not cause the results to increase above 1E-6. The SRA used the same St. Lucie Unit 2 SPAR model, and made the following adjustments: set the exposure time to 51 days (half of the entire period that Unit 2 was in an operating condition),

the safety injection tank (SIT) discharge check valve and the reactor coolant system (RCS) check valve were failed in the SPAR model (i.e., set to a value of 1.0), and common cause failure events were not increased since an extent of cause evaluation did not identify additional examples of the performance deficiency. The SRA confirmed the inspectors' conclusion that the issue was of very low risk significance (Green). The analyst determined that there was additional margin to the green-white threshold because: 1) the analysis assumed that the injection flows from the SIT and the high pressure injection system on one of four paths were completely failed when there would likely have been some injection flow under postulated break conditions, 2) the potential break size was limited to only a portion of the possible spectrum of small break loss of coolant accident (SBLOCA) sizes due to the physical size of the pipe, and 3) this issue was an isolated example, unlike other recent RCS leaks that have occurred in the industry which were of a repetitive and long-standing nature. The inspectors concluded the finding was associated with the cross-cutting aspect

of procedural adherence (H.8) in the human performance area because maintenance personnel did not adhere to work order instructions concerning the dimensions of the vent valve assembly.

Inspection Report# : 2014005 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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

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