

Saint Lucie 1 2Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

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 Submit a License Amendment Request for Unit 1 RPS

Severity Level IV.

An NRC-identified severity level IV (SL IV) non-cited violation (NCV) of 10 CFR 50.59(c)(2)(ii) and an associated finding of very low safety significance (Green) was identified for the licensee's failure to obtain a license amendment prior to implementing a change to the Unit 1 reactor protective system (RPS). The failure to obtain a license amendment for the change resulted in the implementation of a modification that did not conform with the licensee's current licensing basis. The licensee's failure to obtain NRC approval prior to implementing the change to the Unit 1 RPS was determined to impact the regulatory process because the change required NRC review and approval prior to implementation. The licensee entered this issue into their corrective action program as action requests (ARs) 2029652 and 2030820, planned to restore the RPS configuration into conformance, and performed a prompt operability determination which concluded that there was a reasonable expectation that the RPS channels remained operable and could perform their required design basis functions. 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, the modification did not ensure the reliability of the RPS to respond to a design basis event because the design requirements for physical separation of RPS channels A and C were not met and resulted in a condition where revision or rework would be required to resolve the physical separation concerns. The team determined the finding to be of very low safety significance (Green) because the finding did not affect a single RPS trip signal to initiate a reactor scram and the function of other redundant trips or diverse methods of reactor shutdown, did not involve control manipulations that unintentionally added positive reactivity, and did not result in a mismanagement of reactivity by operators. 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 SL IV 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 inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of change management, in the area of human performance, because the licensee did not use a systematic process for evaluating and implementing a change such that nuclear safety remained the overriding priority. [H.3] (Section 1R17)

Inspection Report# : [2015007](#) (pdf)

Significance:  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:  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** Sep 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish a Reasonable Maintenance Effectiveness Demonstration for the ECCS Floor Drain Valve System

An NRC-identified non-cited violation (NCV) of 10 CFR 50.65(a)(2), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," resulted from the licensee's failure to establish a technically justifiable and reasonable maintenance effectiveness demonstration for the emergency core cooling system (ECCS) floor drain valve system. Corrective actions included a revision to the maintenance rule (MR) system function and the reliability performance criteria, the completion of a 3-year extent of condition review to identify all missed functional failures, entering the valve actuators into the licensee's air-operated valve program, and monitoring the performance of the Unit 1 ECCS floor drain valve system as required by 10 CFR 50.65(a)(1). This issue was entered into the licensee's corrective action program as action request 1936612.

The performance deficiency was more than minor because it involved degraded system performance which, if left uncorrected, could become a more significant safety concern. The inspectors evaluated the significance of the finding under the mitigating systems cornerstone using Table 2 of Attachment 4 (dated June 19, 2012) and Exhibit 2 of Appendix A (dated June 19, 2012) to Inspection Manual Chapter 0609, "Significance Determination Process," (dated June 2, 2011). The inspectors determined the finding was of very low safety significance (i.e., Green) because the exhibit criteria did not screen the finding to a detailed risk assessment. The inspectors concluded the finding was associated with the cross-cutting aspect of trending (P.4) in the problem identification and resolution area because the licensee had failed to utilize the corrective action program to associate and identify an adverse trend related to repeated system failures in the aggregate to identify common cause and programmatic issues.

Inspection Report# : [2014004](#) (*pdf*)

Significance: **W** Sep 24, 2014

Identified By: NRC

Item Type: VIO Violation

Failure to Implement Measures to Ensure the Watertight Integrity of the Unit 1 Reactor Auxiliary Building

Self-revealing apparent violations (AV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and Criterion XVI, "Corrective Action," were identified for the failure to install internal flood barriers in conduits that penetrated the Unit 1 reactor auxiliary building (RAB) exterior wall at elevations below the design flood height; and the failure to identify those missing flood barriers during flooding walkdowns performed in response to the NRC's "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012. The licensee's failure to implement measures to ensure the watertight integrity of the Unit 1 RAB below the design basis flood elevation was a performance deficiency. The licensee installed internal flood barriers in the conduits and entered the issues into the corrective action program as action request (AR) 1941159 and AR 1943185.

The performance deficiency was more than minor because it was associated with the protection against external factors attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Specifically, the failure to maintain the watertight integrity of the Unit 1 RAB resulted in a condition where a design basis external flood event would

challenge the operability of safety-related equipment. The inspectors screened the finding using Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 4 and Appendix A (June 19, 2012). The inspectors determined the finding was associated with the mitigating systems cornerstone and required a detailed risk evaluation because the performance deficiency affected more than one train of systems used to support the risk significant functions associated with external flood protection. Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," (April 12, 2012) was used to assess the significance. The analyst performed a bounding quantification of the risk then identified various qualitative factors that could affect the final values, either increasing or decreasing the preliminary significance determination. The dominant risk scenario was a postulated event where the plant is operating at power when a significant rainfall event occurs, a reactor trip occurs, the performance deficiency causes emergency core cooling system (ECCS) tunnel flooding, and the floor drain valves in the RAB that isolate the ECCS rooms during a flooding event fail to close allowing water to flow unobstructed and submerge all of the ECCS pumps. After 24 hours, the plant would not achieve a 'safe and stable' condition and core damage would normally be assumed because all reactor coolant system (RCS) injection capability was lost, unless some recovery action was successful. The analyst calculated a factor to apply which would represent the likelihood that the licensee could recover some RCS makeup capability after several days before core uncover. The calculated overall risk ranged from 3E-6/year to 1E-5/year and the preliminary risk significance of the finding was determined to be low to moderate safety significance (i.e. White) when other qualitative factors were considered. The inspectors concluded that the finding was associated with the design margin aspect (H.6) of the human performance area because the licensee did not maintain external flood protection design margin by ensuring that penetrations in the Unit 1 RAB were waterproofed below the design basis flood elevation. (Section 40A3.1)

First Update)

The final significance of the finding was determined to be of low to moderate safety significance (White). The finding resulted in a violation of Criterion III, Design Control, and Criterion XVI, Corrective Action, of Appendix B to 10 CFR 50.

(IR# 05000335/2014010, 05000389/2014010 dated November 19, 2014)

(Second Update)

The NRC performed a supplemental inspection in accordance with IP 95001 to assess the adequacy of the licensee's evaluation, extent of condition/cause review and associated corrective actions. The inspectors determined that the licensee performed an adequate evaluation of the specific performance issue and that comprehensive corrective actions were completed to address each of the specific causes.

(IR# 05000335/2014011, 05000389/2014011 dated December 27, 2014)

Inspection Report# : [2014009](#) (pdf)

Inspection Report# : [2014010](#) (pdf)

Inspection Report# : [2014011](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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

Last modified : August 07, 2015