Saint Lucie 2
4Q/2013 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Oct 09, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Meet Training Program Standards on Job Performance Measures for the Annual Licensed Operator Requalification Operating Examination
The inspectors identified a finding associated with the licensee's failure to meet training program standards in the development of job performance measures (JPMs) for the licensed operator requalification annual operating tests. The inspectors identified five JPMs, which were administered as part of the 2013 annual operating examination, that were incorrectly designated as alternate path JPMs. Inspectors further identified that one of these JPMs only contained one critical step. A minimum of two critical steps are required by the licensee's program standard. Overall, five JPMs, out of a total sample size of 15 (33%), were determined to be inadequate. As part of their immediate corrective actions, the facility licensee entered the issue into the corrective action program as AR-01900809.

This performance deficiency (PD) 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 PD adversely affected the quality of operating tests for licensed operators, such that during the administration of the annual operating examination, operators were potentially not correctly evaluated. This impacted the licensee's ability to evaluate and ensure operator performance to assess and maintain the availability, reliability, and capability of mitigating systems. In accordance with Inspection Manual Chapter (IMC) 0609 Appendix I, the Licensed Operator Requalification Significance Determination Process, this finding was determined to be of very low safety significance (Green) because less than 40 percent of the reviewed JPMs were found to be inadequate. The cause of the finding was directly related to the cross-cutting aspect of personnel training and qualifications in the resources component of the cross-cutting area of Human Performance, in that, the licensee failed to ensure the quality of the operating tests used to evaluate the knowledge, skills, abilities, and training provided to operators to assure nuclear safety. [H.2(b)]
Inspection Report# : 2013008 *(pdf)*

Significance: G Sep 30, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Partial loss of offsite power due to non-segregated bus failure
A self-revealing finding was identified for the licensee's failure to establish adequate preventive maintenance (PM) activities for both units' startup transformers (SUTs) 6.9kV non-segregated bus runs in accordance with site PM program requirements. As a result, external corrosion of the 2B SUT 6.9kV non-segregated bus run duct was allowed to degrade until a duct vent screen collapsed onto the energized bus causing a partial loss of offsite power to both

units. This issue was placed in the licensee's corrective action program as action request 1809273. Corrective actions included: repair of the corroded non-segregated bus duct vent associated with this event, updating the preventative maintenance program to address periodic maintenance of non-segregated bus duct vents, and completing inspections and repairs, as necessary, of both units' outdoor bus duct vents for bus runs to the SUTs and auxiliary transformers.

The performance deficiency was considered to be more than minor because it was associated with the equipment reliability 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 shutdown as well as power operations. Specifically, since 2003 when PM activities were established for SUTs (including 4.16kV non-segregated bus runs), the licensee failed to establish those same activities for both units' SUT 6.9kV non-segregated bus runs. As a result, external corrosion of the 2B SUT 6.9kV non-segregated bus duct was allowed to degrade until a duct vent screen collapsed onto the energized bus causing a partial loss of offsite power to both units. The inspectors reviewed the finding in accordance with Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 4, Appendix A and Appendix G. Appendix A, The Significance Determination Process (SDP) for Findings At-Power, was used for both units because Unit 1 was operating and the failure could have reasonably occurred with Unit 2 operating prior to the fall 2012 outage. Appendix G, Shutdown Operations Significance Determination Process, was used for the time Unit 2 was in the 2012 outage. Appendix G required a detailed risk evaluation because the finding increased the likelihood of a loss of offsite power. A Senior Reactor Analyst subsequently performed an analysis of the risk impacts to both units while at-power and while the unit was shut down. The analyst determined that the risk significance of the issue was very low (i.e., Green). The dominant accident sequence was a Loss of Offsite Power during a shutdown condition, specifically when the RCS is vented such that: 1) the steam generators cannot sustain core heat removal, and 2) a sufficient vent path exists for feed and bleed. The remaining mitigation of such an accident was comprised of the Unit 2 EDGs and recovery of power from the opposite unit. The inspectors concluded that this finding did not have a cross-cutting aspect as this was not representative of present licensee performance.

Inspection Report# : 2013004 *(pdf)*

Significance: G Sep 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Emergency diesel generator inoperable for a period greater than the allowed outage time
A self-revealing non-cited violation of Technical Specification (TS) 3.8.1.1.b was identified due to the licensee operating with an inoperable emergency diesel generator (EDG) for longer than the allowed outage time (AOT) of 14 days without taking the required TS actions. Specifically, during a relay replacement, the licensee installed a diode with a lead that had an un-insulated butt splice. This un-insulated butt splice caused an electrical short circuit resulting in a blown fuse in the 2A EDG start circuitry and was the cause of the EDG failing to start on March 13, and again on June 10, 2013. Consequently, the licensee operated with an inoperable EDG for a period longer than the AOT. Immediate corrective actions included insulating the diode butt splice to prevent a repeat electrical short. The relay assembly was subsequently replaced and a new diode that did not have a butt splice was installed. The issue was entered into the licensee's corrective action program as action request 1880888.

The performance deficiency was more than minor because it was associated with equipment performance attribute of the mitigating systems cornerstone and adversely affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. 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 for Findings At-Power, Exhibit 2 – Mitigating Systems Screening Questions, was used to further evaluate this finding. The finding required a detailed risk evaluation by an NRC senior reactor analyst due to an actual loss of function of at least a single Train for greater than its TS AOT. The analyst determined that the

risk significance of the issue was very low (i.e., Green). The dominant accident sequence was a loss of offsite power followed by a series of electrical failures leading to station blackout and ultimately a reactor coolant pump seal loss of coolant accident and core damage. The remaining mitigation of such an accident was comprised of the Unit 1 EDGs and recovery of power from the opposite unit. This finding was associated with a cross cutting aspect in the resources component of the human performance area because the licensee had not provided complete, accurate, and up-to-date procedures and work packages to ensure that the EDG wiring butt splice was insulated in accordance with plant specifications during maintenance activities in May 2008 and again in September 2012 [H.2(c)]. (Section 4OA3.3)

Inspection Report# : 2013004 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Monitor SSCs under 10 CFR 50.65(a)(1)
The inspectors identified a Green non-cited violation associated with the licensee's failure to follow the requirements of 10 CFR 50.65(a)(2), Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants. Corrective actions included the assignment of a fulltime maintenance rule coordinator to ensure the appropriate priority was assigned to maintenance rule activities, which included weekly meetings of the maintenance rule expert panel to allow evaluation of equipment failures.

The performance deficiency was more than minor because it involved degraded system performance which, if left uncorrected, could become a more significant safety concern. Specifically, not addressing equipment issues under the maintenance rule could impact the reliability and unavailability of those systems, structures, and components important to safety. Using Manual Chapter 0609.04, Significance Determination Process Initial Characterization of Findings, the finding was determined to affect the Mitigating Systems Cornerstone and screened as Green because none of the logic questions under the cornerstone applied. Because the licensee had failed to utilize the corrective action program to associate and trend maintenance rule implementation issues in the aggregate to identify programmatic and common cause problems, the finding was associated with a cross-cutting aspect in the corrective action program component of the problem identification and resolution area [P.1(b)].
Inspection Report# : 2013003 *(pdf)*

Significance: G May 13, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Demonstrate Feasibility of All OMAs Used as Compensatory Measures
A Green NRC-identified non-cited violation of St. Lucie Unit 1 and Unit 2 operating license conditions 3.E was identified for the licensee's failure to comply with the requirements of the St. Lucie Fire Protection Program for verifying the feasibility of unapproved operator manual actions (OMAs). Specifically, the licensee's process for determining OMA feasibility did not include performing in-plant walkdowns to verify the feasibility of all the unapproved OMAs that were entered in the corrective action program (CAP) in 2006 and designated as alternate compensatory measures during the transition to National Fire Protection Association (NFPA) Standard 805. The licensee entered this issue in their CAP as Action Request (AR) 01860866 and performed in-plant walkdowns to verify feasibility of the OMAs which had not been previously field verified.

Failure to comply with the requirements of the St. Lucie Fire Protection Program for verifying the feasibility of unapproved OMAs designated as compensatory measures is a performance deficiency. This finding was determined to be more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e. fire), and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The

licensee's process for determining OMA feasibility could have resulted in non-feasible OMA compensatory measures not being identified which had the potential to adversely affect SSD in the event of a fire. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process," review was required as the finding affected fire protection safe shutdown. The inspectors evaluated this finding using the guidance in IMC 0609, Appendix F, Attachment 2, "Degradation Rating Guidance," and assigned a low degradation rating to this finding because the licensee verified that the OMAs were feasible through in-plant walkdowns. Therefore, this finding was determined to be of very low safety significance (Green). The cause of this finding was determined to have a cross-cutting aspect in the Corrective Action Program (CAP) component of the Problem Identification and Resolution area in that the licensee did not thoroughly evaluate the problem such that the resolution addressed extent of condition [P.1(c)].
Inspection Report# : 2013007 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Reactor Auxiliary Building Penetrations were Adequately Flood Protected
A Green NRC identified non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for the licensee's failure to ensure that all below grade Unit 1 and 2 reactor auxiliary building penetrations were adequately sealed as required by the licensee's design basis. The missing and degraded penetration seals were found during licensee inspections performed in response to a letter from the NRC to licensees, entitled 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 (ML12053A340). Corrective actions completed included restoring the degraded or missing seals to design basis requirements. The performance deficiency was determined to be more than minor because it affected the protection against external factors attribute of the mitigating system cornerstone, and affected the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Using Manual Chapter 0609.04, Initial Characterization of Findings, Table 2, dated June 19, 2012, the finding was determined to affect an external event mitigation system and affected the mitigating system cornerstone. Although the finding existed with the units at power and during shutdown conditions since original plant construction, the risk was assessed using Manual Chapter 0609 Appendix G, Attachment 1 Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWR's and BWR's dated May 25, 2004 using Checklists 1 through 4. Appendix G was utilized since both units would have been shutdown prior to the probable maximum hurricane (PMH) event and associated external flood. Due to the accuracy of weather forecasting, there would be several days for the licensee to prepare for a PMH. The inspectors reviewed the finding with the regional senior reactor analyst and determined that the licensee would have adequate time to ensure that the mitigating capability of core heat removal, inventory control, emergency AC power, containment control, or reactivity control systems would have been available prior to the PMH affecting the site. The finding screened as Green because none of the attributes in the checklists were adversely impacted. No cross cutting aspects were assigned to the finding. The finding does not represent current licensee performance because the degraded and missing penetration seals have existed since original construction of the plant.
Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Identify and Correct a Condition Adverse to Quality for Alignment of the Safety-Related Refueling Water Tank to a Non-Seismic Spent Fuel Pool Purification system
A Green NRC identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for the failure to promptly identify and correct a condition adverse to quality (CAQ) involving alignment of

the safety-related refueling water tank (RWT) to a non-seismic spent fuel pool (SFP) purification system. Corrective actions included implementing administrative actions to preclude this alignment when the RWT is required to be operable. The finding was more than minor because it affected the configuration control attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically the alignment of the safety-related RWT to the non-seismic SFP purification system created a CAQ and rendered the RWT inoperable for greater than its allowed outage time. The inspectors evaluated the finding in accordance with NRC Inspection Manual Chapter 0609, Significant Determination Process, Attachment 4 and Appendix A and determined that the finding required a phase 3 evaluation by a senior reactor analyst. The analyst calculated the change in conditional core damage probability (CCDP) due to the postulated loss of the RWT during an event, multiplied by the frequency of a seismic event that could require the use of the RWT (e.g., loss of coolant accident) and applied an exposure time factor (4 days/7 days). The dominant sequence was a steam generator tube rupture which proceeds to core damage due to a lack of high or low pressure injection water supply. The risk was mitigated by the low probability of a seismic event. The analysis determined that the risk increase of the performance deficiency was an increase in large early release frequency less than 1E-7/year which is a GREEN finding of very low safety significance. The cause of the finding involved the cross-cutting area of problem identification and resolution, the component of corrective action program, and the aspect of complete and thorough evaluation, P.1(c); because the licensee failed to properly evaluate for operability the practice of aligning a seismically qualified RWT to a non-seismic purification system.
Inspection Report# : 2013002 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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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