Seabrook 1
2Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Loss of DC Control Power to Switchyard #2
A self-revealing finding of very low safety significance was identified for failure to follow procedures associated with switchyard maintenance activities on January 24, 2013. Specifically, in preparation for the planned maintenance on switchyard battery (SYB) #3, operators incorrectly performed NextEra procedure ON1048.07, Switchyard Battery Operation, which led to a loss of power on switchyard system (SYS) #2, disabled the SYS#2 breaker automatic closure feature, and increased the risk of a loss of offsite power. Corrective action was subsequently taken to secure the maintenance on SYB#3, and return it and the battery charger to service to supply loads to both Switchyard System #1 (SYS#1) and SYS#2. NextEra entered this issue into their corrective action program (CAP) as condition report (CR) 1841980.

This performance deficiency is more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone, and it adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. Specifically, not properly performing NextEra procedure ON1048.07 resulted in the loss of the SYS#2 breaker automatic closure feature, thereby increasing the risk of an initiating event due to a loss of off-site power. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations” (IMC 0609A). The inspectors determined that the finding was of very low safety significance (Green) because the deficiency did not cause a reactor trip, and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because NextEra personnel did not utilize human error prevention techniques commensurate with the risk of the assigned task, such that work activities were performed safely. Specifically, NextEra personnel did not verify that the switchyard battery charger switch manipulation would result in the appropriate system response. [H.4(a)]
Inspection Report# : 2013002 *(pdf)*

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Correct a Condition Adverse to Quality for the L-5 FICI Connection
A self revealing, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions,” was identified because the high pressure Swagelok fitting for the L-5 fixed in-core detection instrument failed and caused an unisolable reactor coolant leak. Specifically, NextEra did not implement timely and effective corrective actions to address a degraded Swagelok fitting associated with the L5 in-core instrument connection that was identified as a condition adverse to quality in 2006. As a result, the fitting continued to degrade and failed on October 21, 2012. NextEra entered this into their corrective action program as AR 01815351 and implemented immediate corrective actions to cut the connection for the L-5 instrument, as well as two others showing signs of leakage, and capped the tubes prior to recommencing start-up.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone's objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Additionally it is similar to example 4.d of Inspection Manual (IMC) 0612, Appendix E, because this was a failure to implement a corrective action that did have a safety impact, because the fitting failed and caused a 4 gpm non-isolable leak from the reactor coolant system. The inspectors evaluated the finding using IMC 0609, Attachment A, because the operational impact occurred after the residual heat removal pump was secured for start-up. The inspectors determined that the finding was of very low safety significance (Green) because the deficiency would not result in exceeding the small loss of coolant accident (LOCA) leak rate and would not have affected other systems used to mitigate a LOCA. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because actions were not taken to maintain long term plant safety by minimization of long-standing equipment issues. Specifically, NextEra did not manage the ongoing degradation of the L-5 in-core instrument connection fitting connection while long term corrective actions were implemented.
Inspection Report# : 2012005 *(pdf)*

Significance: G Dec 31, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adequately Implement Procedure Led to Reactor Coolant System Leakage from Pressurizer Safety Valve Flange
A self-revealing, non-cited violation of technical specification 6.7.1, "Procedures and Programs," was identified after the control room received a high discharge temperature alarm for pressurizer relief valve RC-V-116 while pressurizing the reactor coolant system during start-up preparations on October 21, 2012. Specifically, NextEra personnel did not properly implement maintenance procedure MS0519.17, "Crosby Pressurizer Mechanical Safety Valve Removal and Installation." This led to the reactor coolant system leakage past the RC-V-116 flange gasket that caused the high discharge temperature alarm. NextEra entered this into their corrective action program as AR1815307 and implemented immediate corrective actions to retorque the bolts and replace the gasket on RC-V-116.

The performance deficiency was determined to be more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, because NextEra personnel did not properly implement procedure MS0519.17, eight bolts on the inlet flange of pressurizer RC-V-116 were not adequately torqued. This resulted in reactor coolant system leakage during preparations for reactor start-up on October 21, 2012, and required NextEra operators to return the plant to cold shutdown. Additionally, this was similar to more-than-minor example 2.e in IMC 0612, Appendix E, because the procedure non-compliance resulted in a negative safety consequence in that it impacted the ability of the flange to perform its function to prevent reactor coolant system leakage. The inspectors evaluated the finding using IMC 0609, Attachment A, because the operational impact occurred after the residual heat removal pump was secured for start-up. The inspectors determined that the finding was of very low safety significance (Green) because the deficiency would not result in exceeding the small loss of coolant accident (LOCA) leak rate and would not have affected other systems used to mitigate a LOCA. This finding has a cross-cutting aspect in the area of Human Performance, work practices, because personnel did not follow the procedures. Specifically, when tensioning the bolts on the pressurizer relief valve RC-V-116 inlet flange, NextEra personnel did not verify there was a gap for eight of the twelve bolts on the inlet flange of the valve as required by maintenance procedure MS0519.17.
Inspection Report# : 2012005 *(pdf)*

Mitigating Systems

Significance: G Apr 26, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify Adequate Fault Protection for Safety Related Equipment from Non-Safety Related Load Fault
The team identified a finding of very low safety significance involving a non-cited violation of the 10CFR 50, Appendix B, Criterion III, "Design Control," in that, NextEra did not appropriately select and review, for suitability of application, a safety-related over-current protection devise for a safety related power panel (EDE-PP01B). Specifically, NextEra did not consider the effects the current-limiter function of safety related inverters, which supplied the safety related power panel, would limit fault current at the over-current protection devise. As a result, the safety related over-current protective devices would not have prevented a postulated fault of a non-safety related load, supplied from the safety related power panel, from causing a momentary loss of voltage to the power panel and all associated safety related loads. In response, NextEra entered the issue into their corrective action program and performed a preliminary analysis that determined an existing non-safety related fuse would provide adequate over-current protection. NextEra credited the use of this fuse as an interim compensatory measure in their operability assessment in order to conclude the system was operable. The team determined the analysis and associated assessment were reasonable.

The finding was more than minor because it was similar to Example 3.j of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, and was associated with the Design Control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance because the issue was a qualification deficiency that did not result in inoperablity of the system.

This finding did not have a cross-cutting aspect because it was determined to be a legacy issue not indicative of current licensee performance.

Inspection Report# : 2013008 *(pdf)*

Significance: G Apr 26, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Condensate Storage Tank Water Level Above Limits of Seismic Qualification
The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," in that NextEra did not assure the seismic design requirements for Condensate Storage Tank (CST) were translated into specifications and procedures. Specifically, the team found that NextEra's seismic design calculations for the CST was based, in part, on a maximum tank level. The maximum tank level was used to ensure that the floating cover inside the CST would not strike the top of the tank. NextEra engineers had concluded that this impact could cause a failure of the CST or cover. However, the team identified that the high level alarm and operating procedure limits for the tank were above the level credited in the calculation. Additionally, the team determined that NextEra routinely operated the CST tank above the maximum tank level assumed in the calculation. Following identification NextEra entered it into their corrective action program and proceduralized a lower maximum allowable water level for the CST to prevent a seismically induced impact of the floating cover on the tank.
The finding is more than minor because it is associated with the protection against external factors (seismic event) attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of

systems that respond to initiating events to prevent undesirable consequences. The finding involved the loss or degradation of equipment so a detailed risk evaluation (DRE) was performed. Based upon the DRE, the finding was determined to be of very low safety significance.

This finding was not assigned a cross-cutting aspect because the underlying cause was not indicative of current performance.
Inspection Report# : 2013008 *(pdf)*

Significance: G Apr 26, 2013
Identified By: NRC
Item Type: FIN Finding
Failure to Perform Preventative Maintenance on the Supplemental Emergency Power System
The team identified a finding of very low safety significance, in that NextEra did not perform preventative maintenance (PM) on supplemental emergency power system (SEPS) components as required by the approved engineering design modification for SEPS. As a result, the system's reliability to respond to a loss of off-site power event had not been maintained at a high confidence level, as assumed in NextEra's design and probabilistic risk analyses. In response, NextEra entered the issue into their corrective action program, evaluated the effect on equipment reliability for the never performed PMs, and implemented an accelerated schedule to complete the missed PM tasks.

The finding was more than minor because, if left uncorrected, it had the potential to lead to a more significant safety concern. In addition, the finding was associated with the Procedure Quality and Equipment Performance attributes of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. The team determined the finding was of very low safety significance because it was a qualification deficiency that was determined not to affect availability at the time of discovery.

This finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the quarterly system health report stated the failure to complete long term SEPS PMs was a serious threat to equipment reliability.
Inspection Report# : 2013008 *(pdf)*

Significance: G Apr 26, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Primary Component Cooling Water System Unavailable Following a Seismic Event
The team identified a finding of very low safety significance involving a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, “Design Control”, in that NextEra did not verify the design basis for the primary component cooling water (PCCW) had been translated into specifications and procedures. Specifically, the team found that NextEra had produced engineering evaluations and maintenance procedures that allowed a limited amount of leakage past the “B” train PCCW isolation valves. The team noted NextEra used these documents to conclude that a 2.5 gpm leak rate identified in April 2011 and a 4 gpm leak identified in October 2012 on “B” train valves were acceptable. The team reviewed the design and licensing basis of the “B” train and determined the system did not have a safety related refill capability and, therefore, was required to be leak tight. The team determined that, with leakage past the valves, water would need to be added to the system every few hours in order to ensure the system would be available. The team concluded that following certain design basis events a safety related refill system would not be available resulting in loss of the PCCW system. Following identification of the issue NextEra entered it into their corrective action program and evaluated the operability of systems- concluding it was operable. The team review of the evaluation determined it to be reasonable.
The finding is more than minor because it is associated with the protection against external factors (seismic event)

attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding involved the loss or degradation of equipment designed to mitigate a seismic initiating event and triggered the use of Exhibit 4 which resulted so a DRE was performed. Based upon the DRE, the finding was determined to be of very low safety significance.

The team determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, because NextEra did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety. Specifically, those necessary for: complete, accurate and up-to-date design documentation, procedures, and work packages.
Inspection Report# : 2013008 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Service Water Cooling Tower Level
A self-revealing NCV of technical specification (TS) 3.7.4 "Service Water System/Ultimate Heat Sink," resulted from operators' failure to follow procedures to evaluate a faulty SW cooling tower basin level instrument. Specifically, because NextEra personnel did not properly follow their Conduct of Operations procedure and the Operations Management Manual, an inaccurate level gage was used to determine SW cooling tower basin level. This resulted in the SW cooling tower basin level dropping and remaining below its TS minimum value for approximately 17 days. NextEra's immediate corrective actions included conducting a fast fill of the cooling tower basin via the fire protection system to restore operability on December 7, 2012, and entering the issue into their CAP as CR 1830734. Planned corrective actions included implementing a process for operations department oral boards to focus on standards applications, fundamentals, and use of situational questions.

This performance deficiency is more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone, and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the SW cooling tower basin level was below its TS minimum level of 42.15 feet for 17 days. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations" (IMC 0609A). The inspectors determined that the finding was of very low safety significance (Green) because the deficiency did not affect the design or qualification of the SW system and it did not represent a loss of system safety function. Although the finding did involve the degradation of equipment specifically designed to mitigate a seismic initiating event, the SW cooling tower had sufficient margin available to satisfy its design basis requirements and safety function. This finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because NextEra did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action is safe in order to proceed, rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. Specifically, NextEra failed to properly evaluate which SW cooling tower level gage was inoperable and thus relied on an inoperable indication for SW cooling tower level. (H.1(b))
Inspection Report# : 2013002 *(pdf)*

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Scaffold Installed with Insufficient Separation to Safety-Related Equipment
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, "Procedures," because NextEra did not ensure that adequate separation was maintained between temporary scaffolding and safety-related equipment.

Specifically, the inspectors identified numerous scaffolds installed in the plant with less than the minimum standoff distance to safety-related equipment specified in NextEra procedures and no engineering evaluation to support the deviation. NextEra entered this NCV into their CAP as CR 1804255.

This performance deficiency was considered more than minor because it affected the protection against external factors attribute of the Mitigating Systems cornerstone and its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, NextEra routinely did not evaluate scaffold installations when insufficient separation to safety-related equipment was provided. Additionally, it was similar to example 4.a in IMC 0612, Appendix E, "Examples of Minor Issues," which states that the issue of failing to appropriately evaluate scaffold installation as required by procedures is more than minor if the licensee routinely failed to perform engineering evaluations. The issue was evaluated in accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power" and determined to be of very low safety significance (Green) since it did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic event. This finding is related to the cross-cutting area of Human Performance - Work Practices because NextEra personnel did not follow scaffold installation procedures when they routinely installed scaffold within one-half inch of safety-related equipment without an engineering evaluation.
Inspection Report# : 2012004 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: G Sep 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Process Necessary for Notification of OROs during an Emergency Declaration
A self-revealing NCV of 10 CFR 50.47(b)(5) and the requirements of Section lV.D.3 of Appendix E to 10 CFR 50 was identified on June 13, 2012, because NextEra did not notify the state of Massachusetts within 15 minutes of declaring an emergency at the Seabrook Station. Specifically, the inspectors determined that NextEra did not maintain the site's off-site notification process in a manner that ensured that the RSPS function described by 10 CFR 50.47(b)(5) could be met with the multiple equipment malfunctions that occurred between June 12 and June 14, 2012. The issue was entered into NextEra's corrective action program as CR 1775909.

The performance deficiency was considered more than minor because it was associated with the Emergency Preparedness (EP) cornerstone attributes of Procedure Quality and Facilities and Equipment, and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, EP equipment was not treated as equipment important to safety and thus marginal equipment performance with regard to the NAS was tolerated, and the notification process implementing procedure was cumbersome such that it did ensure timely notification when presented with equipment failures. The inspectors assessed the issue, related to the notification process, using the Emergency Preparedness Significance Determination Process (Appendix B to IMC 0609) and determined the finding to be of very low safety significance (Green). This finding is related to the cross-cutting area of Problem Identification and Resolution - CAP because NextEra did not consistently enter issues with communications equipment necessary for EP purposes into the station's CAP such that immediate corrective actions could be taken to ensure the RSPS function was met.

Inspection Report# : 2012004 *(pdf)*

Occupational Radiation Safety

Significance: G Sep 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Calibration of Respirator Fit Test Equipment
Inspectors identified an NCV of Technical Specification (TS) 6.7.1.a, "Procedures and Programs," which requires that written procedures be established and implemented, to include administrative procedures, which includes radiation protection procedures. Specifically, procedure HD 0965.10, "Respirator Fit Testing Using TSI Portacount Plus," Revision 10, did not specify a calibration frequency requirement for the respirator fit test equipment. The equipment vendor recommended annual calibration frequency, which was exceeded by over two years, and the current as-found condition of the specified equipment when tested was found out of calibration. This issue was entered into NextEra's CAP as CR 1785134.

This performance deficiency was determined to be more than minor, because it was associated with program and process attribute of the Occupational Radiation Safety cornerstone and affected its objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Specifically, the respirator fit testing was being used to certify respirator protection factors of workers which were relied upon to provide protection of workers due to airborne radioactivity during the previous refueling outage. Additionally, it was similar to example 6.b in IMC 0612, Appendix E, "Examples of Minor Issues," which states that failing to calibrate radiation instruments was more than minor if the as-found condition was not within the acceptance criteria for the calibration and did not provide a conservative measurement. The issue was evaluated using IMC 0609, "Significance Determination Process" (SDP), and was determined to be of very low safety significance. Specifically, when evaluated with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the performance deficiency was not an ALARA issue, did not involve an overexposure or a potential overexposure, and did not impact NextEra's ability to assess dose. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution - CAP because NextEra did not identify that vendor recommended calibration requirements had not been met or evaluated when this equipment was returned by the vendor for routine cleaning.
Inspection Report# : 2012004 *(pdf)*

Significance: N/A Apr 06, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Tech Spec 6.10.0 Violation - contractor electrician entered high radiation area without receiving health physics briefing
NRC Letter, dated June 1, 2012 (ML12153A155), documented an NRC Office of Investigation review to determine whether a contractor electrician deliberately entered a high radiation area without first receiving a health physics briefing on the current radiological conditions in accordance with site procedures required by NextEra's operating license (NRC Investigation Report Number 1-2011-038). The NRC concluded that the contractor electrician, who had been assigned to conduct work within an HRA, deliberately entered the HRA without first receiving the HP briefing on the current radiological conditions. That issue was being treated as an NCV.
Inspection Report# : 2013003 *(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

Last modified : September 03, 2013