

Seabrook 1

4Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Sep 02, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Corrective Actions to Preclude Repetition of a Significant Condition Adverse to Quality

The team identified a finding of very low safety significance, involving a non-cited violation of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," for not performing corrective actions to preclude repetition of a significant condition adverse to quality. Specifically, in 2008, two of four primary component cooling water (PCCW) pump motors failed within a four month period due to a manufacturing defect. NextEra established but did not perform a corrective action to replace all four motors with re-wound motors, free of the identified manufacturing defect. Subsequently, in 2015, a third motor failure occurred due to the same manufacturing defect. NextEra's immediate corrective actions included entering this issue into their corrective action program (AR 2153536), implementing an electrical testing program that would provide an early indication of further degradation of the manufacturing defect until motor replacement, and completing a prompt operability determination to assess current PCCW system operability.

This finding was more than minor because it was associated with the Equipment Performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during power operations. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the team screened the finding for safety significance and determined that a detailed risk evaluation (DRE) was required because the finding involved a partial loss of a support system (PCCW pump 'B') that would increase the likelihood of an initiating event and impacted mitigating equipment (Item C - Support System Initiators of Exhibit 1). The DRE, performed by a Region I senior reactor analyst (SRA), concluded that the performance deficiency resulted in a change in core damage frequency of high E-7/yr, or very low safety significance (Green).

The finding had a cross-cutting aspect in Problem Identification and Resolution (Resolution), because NextEra did not take effective corrective actions to address this issue in a timely manner commensurate with its safety significance. Specifically, NextEra did not perform motor replacements for susceptible installed PCCW motors within a reasonable due date as specified by the 2009 corrective action to preclude repetition (CAPR); and plant procedures, programs and resources were available for the decision-making process to schedule the motor replacement.

Inspection Report# : [2016007](#) (*pdf*)

Significance: G Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Automatic Initiation of Emergency Feedwater Resulting from Performance of Procedural Steps in a Manner Prohibited by Documented Instructions

A self-revealing Green NCV of 10 CFR, Appendix B, Criterion V, "Instructions Procedures, and Drawings," was identified, because NextEra did not ensure that activities affecting quality were accomplished in accordance with

documented instructions. Specifically, while implementing a procedure following a plant trip that occurred on March 2, 2016, NextEra staff performed steps of a procedure in a manner that was prohibited by a departmental instruction, leading to an automatic initiation of emergency feedwater (EFW) to maintain adequate steam generator (SG) level. NextEra entered this issue into their corrective action program (CAP) and subsequently initiated a root cause evaluation to determine the factors which contributed to the event. Additionally, NextEra took corrective actions (C/As) to provide additional training and guidance for their staff and to resolve issues with existing procedures, which were determined to have been contributing factors during the event.

The inspectors determined that this performance deficiency was more than minor because it was associated with the Human Performance attribute of the Initiating Events cornerstone, and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability (loss of FW) and challenge critical safety functions during shutdown as well as power operations. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency did not cause the loss of mitigation equipment relied upon to transition the plant from the onset of a trip to a stable shutdown condition. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because NextEra did not ensure that individuals stopped when faced with uncertain conditions. Specifically, the individuals involved did not adequately challenge the basis for a decision to disregard a department instruction.

Inspection Report# : [2016002](#) (*pdf*)

Significance: G Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Multiple Letdown Isolations Resulting from an Inadequate Procedure and the Performance of Steps Not Prescribed by Established Procedures

A self revealing Green NCV of 10 CFR, Appendix B, Criterion V, "Instructions Procedures, and Drawings," was identified because NextEra did not ensure that activities affecting quality were prescribed by documented procedures of a type appropriate to the circumstances and that these activities were accomplished in accordance with these procedures. Specifically, a procedure associated with the testing of safety-related containment isolation functions did not contain sufficient instruction to ensure proper control of plant configuration; thus implementation of this procedure resulted in an inadvertent letdown isolation. Additionally, while attempting to perform this test on a subsequent occasion, individuals performed additional steps not prescribed in the associated procedure; the execution of these additional steps resulted in an additional inadvertent letdown isolation. NextEra entered these issues into their CAP and subsequently performed apparent cause evaluations for the two events, made necessary changes to the associated procedure, and provided coaching to NextEra staff.

The inspectors determined that this performance deficiency was more than minor because it was associated with the Procedure Quality and Human Performance attributes of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability (letdown isolation) during power operations. In accordance with IMC 0609, Attachment 4, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of a trip to a stable shutdown condition. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, Procedural Adherence, because NextEra failed to ensure that individuals followed processes and procedures appropriately.

Inspection Report# : [2016002](#) (*pdf*)

Mitigating Systems

Significance:  Mar 25, 2016

Identified By: NRC

Item Type: VIO Violation

Failure to complete operability determination for ASR affected structures

The team identified a violation of Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” and NextEra Nuclear Fleet Administrative Procedure, EN-AA-203-1001, “Operability Determinations/Functionality Assessments,” involving Seabrook Station staff failing to perform operability evaluations for identified non-conforming conditions. Specifically, the team identified that following receipt of a vendor’s structural assessment of the RHR/CS Vault on March 17, 2015, the Seabrook staff failed to complete an appropriate immediate operability evaluation or initiate a Prompt Operability Determination (POD) for an identified structural load (ASR induced) not considered by ACI 318-1971, the design and construction code of record. The team also identified that following receipt of another vendor’s report, “Structural Evaluation and Design Confirmation of the CEB,” on December 2, 2015, that the Seabrook staff failed to complete an immediate and follow-on POD to address ASR induced loads (due to internal expansion and externally applied by ASR-affected concrete backfill) that are causing CEB structural deformation.

The team determined that the two examples of failure to identify structural loading due to ASR expansion as a non-conforming condition and to then promptly evaluate the impact of this condition on the operability of the affected structures is a performance deficiency. This performance deficiency is considered to be more than minor because the non-conforming condition adversely impacts the structural integrity design attribute of the reactor safety barrier integrity and mitigating systems objectives. In addition, the finding is similar to more than minor Example 3.i of Appendix E of IMC 0612. The finding was evaluated in accordance with IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” Exhibit 3, “Barrier integrity Screening Questions,” and screened as very low safety significance (Green) because the finding only represents a degradation in design margin and did not impact the radiological barrier function of the affected structures. The finding had a cross cutting aspect in the area of problem identification and resolution, P3, timely resolution of issues. Specifically, NextEra did not fully evaluate conditions adverse to quality, including evaluating the effects of the ASR expansion-induced loads on operability of certain structures, in a timely manner following identification by an engineering analysis.

Inspection Report# : [2016008](#) (*pdf*)

Barrier Integrity

Significance:  Sep 02, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform Required ASME In-Service Testing of Manual Isolation Valves for the Atmospheric Steam Dump Valve Block Valves

The team identified a finding of very low safety significance, involving a non-cited violation of Seabrook Technical Specification Surveillance Requirement 4.0.5, “Surveillance Requirements for In-Service Inspection and Testing of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 Components.” Specifically, the manual isolation valves for the atmospheric steam dump valves had an active safety function to close, in order to mitigate the radiological consequences of a steam generator tube rupture (SGTR) accident, but had not been placed in the Seabrook In-Service Test Program and tested, as required by the Technical Specifications and ASME Code. As a result, degraded valve performance could go uncorrected without adequate acceptance criteria to ensure that a SGTR would not result in an unacceptable increase in the consequences of that accident (e.g., a more than minor reduction in

the margin between the postulated licensing basis radiological release and the regulatory limits). In response, NextEra entered the issue into their corrective action program (AR 2153195) and performed a preliminary assessment of the valves, which concluded that they were fully operable.

This finding was more than minor because it was associated with the System, Structure, or Component (SSC), and Barrier Performance attribute of the Containment Barrier Cornerstone and adversely affected the cornerstone objective of ensuring the reliability of associated risk-important SSCs. The team determined that the finding was of very low safety significance (Green) because it was a deficiency confirmed not to represent an actual open pathway in the physical integrity of reactor containment and did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The finding did not have a cross-cutting aspect because it was not considered indicative of current licensee performance.

Inspection Report# : [2016007](#) (*pdf*)

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.

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Miscellaneous

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