

## Seabrook 1 3Q/2014 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** G Jul 10, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Alternate Safe Shutdown Areas Affected by Smoke from Cable Spreading Room Fire**

The team identified a finding of very low safety significance, involving a non-cited violation of Seabrook Unit 1 Operating License Condition 2.F for failure to implement and maintain all aspects of the approved Fire Protection Program. Specifically, NextEra failed to ensure that intake air to the A and B remote shutdown panel areas was not contaminated from products of combustion resulting from a cable spreading room fire. NextEra promptly entered this issue into its corrective action program as condition reports AR 01977233 and AR 01982946. NextEra initiated compensatory measures in the form of four-hour roving fire watches. Long term corrective actions include determining options to eliminate the potential for smoke migration from a cable spreading room fire to the A and B essential switchgear rooms.

This finding was more than minor because it was associated with the Protection Against External Factors (e.g., fire) attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix F, Fire Protection Significance Determination Process, Attachment 1, Step 1.6, a Senior Reactor Analyst examined NextEra's probabilistic risk analysis based risk evaluation for the issue and determined this finding resulted in an increase in core damage frequency in the mid E-7 range (Green) or very low safety significance. This finding did not have a cross-cutting aspect because it was determined to be a legacy issue and was considered to be not indicative of current licensee performance.

Inspection Report# : [2014007](#) (*pdf*)

**Significance:** G Jul 10, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Alternative Shutdown Procedures**

The team identified a finding of very low safety significance, involving a non-cited violation of Seabrook Unit 1 Operating License Condition 2.F for failure to implement and maintain all aspects of the approved Fire Protection Program. Specifically, NextEra's alternative safe shutdown operating procedures did not adequately establish decay heat removal and could have challenged the performance goals of alternative shutdown, as required by NextEra's safe shutdown analysis and regulatory requirements. NextEra promptly entered this issue into its corrective action program as condition report AR 01976944 and initiated an operating standing order as a compensatory measure.

This finding was more than minor because it was associated with the Protection Against External Factors (e.g., fire) attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the

availability and reliability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix F, Fire Protection Significance Determination Process, a Phase 1 evaluation screened this finding as very low safety significance (Green) because it was assigned a low degradation rating. The team determined this issue had a low degradation rating because the procedural deficiencies could be compensated by operator experience and system familiarity. This finding did not have a cross cutting aspect because it was determined to be a legacy issue and was considered to be not indicative of current licensee performance.

Inspection Report# : [2014007](#) (*pdf*)

**Significance:**  Jun 30, 2014

Identified By: NRC

Item Type: FIN Finding

### **Inadequate Technical Evaluation of Safety-Related Structures**

The inspectors identified a finding of very low safety significance (Green) because NextEra did not perform adequate evaluations of safety-related plant structures. Specifically, additional technical evaluation and analysis was not adequately conducted on the safety-related 'A' and 'B' RHR concrete vaults when it was determined that they exceeded the quantitative limits specified in NextEra procedures. NextEra entered the failure to perform adequate technical evaluations on concrete structures exceeding Tier II quantitative requirements into the CAP (AR 01929460), and committed to performing a formal, independent technical evaluation of the 'A' and 'B' RHR vault conditions in accordance with their structural monitoring program procedure and the ACI 349.3R-96 standard.

The performance deficiency was considered to be 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, the inspectors concluded that the reliability of the structure was affected in that it exceeded the specified Tier II limits without the performance of further technical evaluation. The issue was evaluated in accordance with IMC 0609, Appendix A, 'The Significance Determination Process (SDP) for Findings At-Power,' and determined to be of very low safety significance (Green) because it did not represent an actual loss of function of at least a single train for greater than its Tech Spec Allowed Outage Time or two separate safety systems out-of-service for greater than its Tech Spec Allowed Outage Time. This finding is related to the cross-cutting area of Human Performance – Procedure Adherence, because NextEra did not follow processes, procedures, and work instructions (H.8). Specifically, NextEra personnel did not perform an adequate technical evaluation of two safety-related concrete structures that exceeded the quantitative criteria requiring such an evaluation.

Inspection Report# : [2014003](#) (*pdf*)

**Significance:**  Jun 30, 2014

Identified By: Self-Revealing

Item Type: FIN Finding

### **Unexpected Main Generator Breaker Pole Closure Results in Reactor Trip**

The inspectors identified a self-revealing finding of very low safety significance (Green), because NextEra did not ensure that adequate procedural guidance existed in ON1046.12, 'Operation of the Main Generator Breaker' to limit the likelihood of events that upset plant stability. Specifically, Seabrook station experienced an automatic reactor trip from approximately 17% reactor power on April 1, 2014 when two of four reactor coolant pumps (RCPs) tripped on low bus voltage. The cause of the reactor trip was directly attributable to the main generator breaker inadvertently closing and actuating the main generator multi-function protective relay. NextEra entered the event into their CAP, and conducted a root cause evaluation to determine the root and contributing causes, extent of condition and extent of cause, and to identify corrective actions to prevent recurrence. NextEra initiated actions to revise ON1046.12 to add controls to communicate the potential risk associated with placing the main generator breaker control in LOCAL, conducted briefings with Maintenance groups involved in the event, and evaluated the adequacy of other Operations procedures that place equipment in a configuration where protective features are bypassed or defeated.

The performance deficiency was more than minor because it was associated with the procedure quality 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 during shutdown as well as power operations. The finding was evaluated under IMC 0609, Attachment 4, "Phase 1 – Initial Characterization of Findings." The inspectors determined that the finding is of very low safety significance (Green) because it did not result in a reactor trip AND the loss of mitigating equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The finding has a cross-cutting aspect in the area of Human Performance - Work Management because NextEra did not ensure that a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority was implemented (H.5). Specifically, ON1046.12, 'Operation of the Main Generator Breaker' did not contain adequate procedural guidance to communicate the impacts of positioning the Main Generator Selector Switch to LOCAL, take mitigating actions, and minimize time spent at increased risk configurations.

Inspection Report# : [2014003](#) (*pdf*)

**Significance:**  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Scaffolding Installed with Insufficient Separation to Safety Related Equipment**

The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Procedures," because NextEra did not ensure adequate separation was maintained between temporary scaffolding and safety-related equipment. Specifically, six instances of scaffolding installed in the plant were identified with less than the minimum standoff distance to safety-related equipment specified in NextEra procedures and no corresponding engineering evaluation to support these deviations. NextEra entered this NCV into their CAP as AR 01933827 and assessed the six deviations for any impact on the associated safety-related systems.

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 did not evaluate scaffolding installations when insufficient separation to safety-related equipment existed after procedural requirements were revised to a more restrictive value. 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), because it did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic event. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Evaluation, because NextEra personnel did not perform an adequate extent of condition review after revision of their erection of scaffold procedure. This performance deficiency directly contributed to multiple instances of scaffold members erected within two inches of safety-related equipment without an engineering evaluation [P.2].

Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Oct 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Operability Determination Regarding Service Water Leakage and Associated TS Violation**

The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and an associated violation of technical specification (TS) 3.7.4, because NextEra did not follow the requirements of station procedure EN-AA-203-1001, "Operability Determinations/ Functionality Assessments." Specifically, NextEra did not properly evaluate and document an

adequate basis for operability, when relevant information was available that would have challenged the “reasonable expectation of operability” threshold for a service water (SW) through-wall leak that degraded incrementally from weepage on August 7, 2013, to a significantly larger leak on August 28, 2013. NextEra completed a temporary non-code repair of the flaw with the installation of a weldolet on September 1, 2013, following NRC review and approval of a relief request. Additionally, under the corrective action process, NextEra completed apparent cause evaluations for the piping flaw, as well as engineering decision-making during the non-destructive examinations and evaluations, and are currently evaluating the fundamental issue of decision-making regarding TS operability and TS compliance.

This performance deficiency is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the prompt operability determination incorrectly concluded the “B” cooling tower (CT) SW header and the “B” SW (ocean) pumps were operable, but degraded, versus inoperable. IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” and Exhibit 4, “External Events Screening Questions,” were used to assess this issue and a detailed risk evaluation was completed. The inspectors assumed that functionality of the SW system, based upon the as-found wall thinning, would only be challenged when aligned to the cooling tower basin when the SW piping is subjected to a higher overall system pressure. This system configuration is used to mitigate a seismic event following the loss of the normal SW intake structure. Based on low probability of SW piping system failure due to a seismic event and the overall low likelihood of a seismic event of a magnitude sufficient to cause structure, system, and component (SSC) damage, this finding was determined to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of human performance associated with the decision making component because NextEra failed to 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 it is unsafe in order to disapprove the action. Specifically, NextEra personnel had not considered relevant information in the form of UT data and actual leak propagation to conclude that they no longer had “reasonable assurance of operability” and did not declare the “B” header of ocean and CT SW systems inoperable [H.1(b)].

Inspection Report# : [2013004](#) (*pdf*)

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## **Barrier Integrity**

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **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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