

# Seabrook 1

## 4Q/2014 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  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:**  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*)

## **Barrier Integrity**

**Significance:**  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify and Evaluate Class 1 Structural Conditions Adverse to Quality**

The inspectors identified an NCV of 10 CFR 50 Appendix B Criterion XVI, Corrective Actions, of very low safety significance because NextEra staff did not promptly identify nine visual indications of structural problems representing conditions adverse to quality. These problems were observed by NextEra staff during a maintenance rule (MR) walkdown of the Fuel Storage Building (FSB) on November 20, 2014, and documented in walkdown notes as conditions warranting entry into the corrective action program (CAP). However these problems were not entered into the CAP to identify them as conditions adverse to quality until questioned by the inspectors. NextEra staff took corrective actions to enter the issues into their CAP in AR10206192, AR02016238, AR02016225 and AR020168863 and initiated AR02014116 for not promptly identifying these problems.

This performance deficiency was considered to be more than minor because it is associated with the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events, and affected the attribute of design control – structural integrity. Specifically, the inspectors determined the finding was more than minor because four of the conditions exceeded "Tier II structural criteria," which indicated they require further technical evaluation and analysis to validate the existing conditions or repair to preserve structural function. This issue 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 observed FSB degradation did not adversely impact structural or radiological barrier functions of the building. This finding is related to the cross-cutting area of Human Performance - Procedure Adherence because individuals did not follow CAP process, procedures, and work instructions.

Inspection Report# : [2014005](#) (*pdf*)

**Significance:**  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify and Evaluate FSB Settlement Data and the Design Basis**

The inspectors identified a violation of 10 CFR 50 Appendix B Criterion XVI, Corrective Actions, of very low safety significance because NextEra did not promptly identify a condition adverse to quality in December 2013 that involved a deviation from expected settling assumptions in the Seabrook Station design basis for the FSB. FSB elevation measurements were received by NextEra staff in December 2010 and in December 2013 indicating that settling at some locations of the FSB was occurring. NextEra staff did not enter this condition, a condition adverse to quality, into their CAP until December 8, 2014, in response to questions from the inspectors. NextEra initiated AR02011698 to enter this issue in the CAP and AR02014116 to address their staff not entering this issue previously into the CAP.

This performance deficiency was considered to be more than minor because it is associated with the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events, and adversely affected the attribute of design control – structural integrity. Specifically, the inspectors concluded that the structural integrity of the FSB was potentially adversely affected because measured settling of the structure deviated from assumed design basis values. Also, this condition exceeded the "Tier II structural criteria" of the Structures Monitoring Program and requires a structural evaluation. This issue 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 observed degradation was evaluated and does not adversely impact structural or radiological barrier functions for the FSB. This finding is related to the cross-cutting area of Human Performance - Design Margins. The organization did not maintain the FSB within design margins through a systematic and rigorous process.

Inspection Report# : [2014005](#) (*pdf*)

## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Periodically Calibrate REM-500 Neutron Survey Instruments**

The inspectors identified a Green NCV of TS 6.7.1.a, "Procedures and Programs" because NextEra failed to conduct appropriate periodic calibration of neutron survey instruments. Specifically, since 1996, NextEra assumed that an operability check of certain neutron survey instruments using an internal alpha check source would provide a calibration equivalent to that performed to a traceable neutron source of a known neutron flux, contrary to the periodic calibration frequency requirements specified in the Seabrook Station Radiation Protection Manual. NextEra's immediate corrective actions included capturing this issue in its CAP (AR 01969397), calibrating all of the neutron survey instruments in question, and revising the neutron survey instrument operating procedure to require annual calibrations.

This performance deficiency was determined to be more than minor because it adversely affected the Occupational Radiation Safety Cornerstone to ensure the adequate protection of the worker from radiation exposure. Additionally, it was similar to example 6.b in IMC 0612, Appendix E, "Examples of Minor Issues," which states that the performance deficiency is more than minor if a radiation protection instrument was not calibrated properly, and when recalibrated the as-found condition of the instrument was not within acceptance criteria for calibration and the accuracy was non-conservative. The issue was evaluated in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," and determined to be of very low safety significance (Green) since it was not an as low as is reasonably achievable (ALARA) issue and did not involve an overexposure or a potential overexposure and it did not affect any significant neutron exposures of plant personnel. In accordance with IMC 0612, this finding was not assigned a cross-cutting area as it is not indicative of licensee performance over the last three years.

Inspection Report# : [2014005](#) (*pdf*)

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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.

## Miscellaneous

**Significance:** N/A Nov 17, 2014

Identified By: NRC

Item Type: FIN Finding

### **Biennial PI&R Overall Assessment**

The inspectors concluded that NextEra was generally effective in identifying, evaluating, and resolving problems. NextEra personnel identified problems, entered them into the corrective action program at a low threshold, and prioritized issues commensurate with their safety significance. In most cases, NextEra appropriately screened issues for operability and reportability, and performed causal analyses that appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors also determined that NextEra typically implemented corrective actions to address the problems identified in the corrective action program in a timely manner.

The inspectors concluded that, in general, NextEra adequately identified, reviewed, and applied relevant industry operating experience to Seabrook operations. In addition, based on those items selected for review, the inspectors determined that NextEra's self-assessments and audits were thorough.

Based on the interviews the inspectors conducted over the course of the inspection, observations of plant activities, and reviews of individual corrective action program and employee concerns program issues, the inspectors did not identify any indications that site personnel were unwilling to raise safety issues nor did they identify any conditions that could have had a negative impact on the site's safety conscious work environment.

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

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