UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

November 4, 2011

Mr. Paul Freeman
Site Vice President
Seabrook Nuclear Power Plant
NextEra Energy Seabrook, LLC
c/o Mr. Michael O'Keefe
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - NRC INTEGRATED INSPECTION REPORT 05000443/2011004

Dear Mr. Freeman:

On September 30, 2011, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at Seabrook Station, Unit No. 1. The enclosed inspection report documents the inspection results, which were discussed on October 10, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The report documents one NRC-identified finding of very low significance (Green) that was determined to involve a violation of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance, and because they are entered into your corrective action program, the NRC is treating these findings as NCVs, consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCVs in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at (Site Name). In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspector at Seabrook.

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Sincerely,

Arthur L. Burritt, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No. 50-443
License No: NPF-86

Enclosure: Inspection Report No. 05000443/2011004
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Sincerely,

/RA/

Arthur L. Burritt, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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REGION I

Docket No.:	50-443
License No.:	NPF-86
Report No.:	05000443/2011004
Licensee:	NextEra Energy Seabrook, LLC
Facility:	Seabrook Station, Unit No.1
Location:	Seabrook, New Hampshire 03874
Dates:	July 1, 2011 through September 30, 2011
Inspectors:	W. Raymond, Senior Resident Inspector J. Johnson, Resident Inspector J. Richmond, Senior Reactor Engineer J. DeBoer, Reactor Inspector E. Keighley, Reactor Inspector T. Moslak, Health Physicist B. Dionne, Regional Inspector
Approved by:	Arthur L. Burritt, Chief Reactor Projects Branch 3 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000443/2011004; 07/01/2011-09/30/2011; Seabrook Station, Unit No. 1; Routine Integrated Report; Fire Protection; Operability Evaluations.

This report covered a three-month period of inspection by resident and regional specialist inspectors. One Green finding was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross cutting aspects for the findings were determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Mitigating Systems

Green. The inspectors identified a non-cited violation (NCV) of Technical Specification (TS) 6.7.1.a that requires that written procedures be established and implemented, including administrative procedures that define authorities and responsibilities for safe operation. Specifically, NextEra identified a degraded condition in the fire protection system on July 15, 2011, but did not properly or thoroughly evaluate the fire protection system performance as required by NextEra procedure EN-AA-203-1001. As corrective action, NextEra completed an operability evaluation that identified degraded fire protection system performance under certain operating conditions for which NextEra implemented administrative controls that would prevent the degraded performance.

The performance deficiency was more than minor because a reasonable doubt of operability existed until further engineering evaluations were completed to demonstrate adequate fire system performance under design basis conditions. The finding affected the Mitigating Systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events in order to prevent core damage. The issue was evaluated using Appendix F of IMC 0609, "Significance Determination Process" (SDP), and was determined to be of very low safety significance (Green) because the finding had minimal impact on fire system performance. The finding had a cross cutting aspect in the area of problem identification and resolution, P.1(c), because NextEra personnel did not adequately implement the operability determination process to ensure that fire system performance was thoroughly evaluated for operability to assure timely and appropriate corrective actions were completed. (Section 1R15)

Other Findings

A violation of very low safety significance identified by NextEra was reviewed by the inspectors. Corrective actions taken or planned by NextEra have been entered into NextEra's corrective action program. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Seabrook Station operated at full power during the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 External Flooding

a. Inspection Scope

During the period August 15-23, 2011, the inspectors performed an inspection of the external flood protection measures for Seabrook Station. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Chapter 2.4.2.2, which depicted the design flood levels and protection areas containing safety-related equipment, to identify areas that may be affected by external flooding. The inspectors conducted a general site walkdown of the fuel storage building, the essential switchgear building, and the emergency diesel generator (EDG) building to ensure that NextEra erected flood protection measures in accordance with design specifications. The inspectors also reviewed operating procedures for mitigating external flooding during severe weather to determine if NextEra planned or established adequate measures to protect against external flooding events. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

During the period August 24-27, 2011, inspectors reviewed NextEra's readiness to protect risk significant systems during the period when Hurricane Irene was projected to impact the site area. The inspectors verified that NextEra prepared and responded to the severe weather conditions in accordance with procedure OS1200.03, "Severe Weather Conditions." The inspectors also reviewed corrective actions for problems identified during the inspection. The inspection included walk downs of plant areas including the normal and emergency AC electrical distribution systems including the supplemental emergency power supplies (SEPS), the service water and screen wash systems, and emergency feedwater systems.

The inspectors reviewed the UFSAR regarding design features, and verified the adequacy of the station procedures for severe weather protection. The inspectors reviewed previously identified deficiencies related to extreme weather preparation and

verified that the issues were appropriately dispositioned through the corrective action program.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04Q - 3 samples)

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial walkdowns of the systems listed below. The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, technical specifications, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether NextEra staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

- B emergency diesel generator (EDG) during inspection and test of the A EDG on August 15, 2011
- B train emergency feedwater (EFW) system during inoperability of the A EFW system on August 25, 2011
- B EDG during inoperability of the A EDG on September 19 and 20, 2011

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05Q - 2 samples)

.1 Resident Inspector Quarterly Walkdowns

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that NextEra controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Primary Auxiliary Building (-)26' elevation on August 8, 2011
- Primary Auxiliary Building (-)6' elevation on August 8, 2011

b. Findings

No findings were identified. An issue related to fire protection system performance is discussed in Section 1R15 below.

1R06 Flood Protection Measures (71111.06 - 1 sample)

.1 Internal Flooding Review

a. Inspection Scope

The inspectors reviewed the flood protection measures designed to protect the control building-cable spreading room 50 ft elevation and other safety-related equipment from the effects of internal flooding. The inspectors reviewed NextEra's flooding evaluation for the selected areas, the design basis documents and flood response procedures. The inspectors performed a walkdown of the selected areas to verify that as-found equipment and conditions were consistent with the design basis documents. The inspectors reviewed the condition of seals, level alarms and other equipment credited in the flood analysis.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07 - 1 sample)

a. Inspection Scope

The inspectors reviewed the 2011 testing of the B diesel generator jacket water heat exchanger E42B to verify that the heat exchanger could fulfill its design function. The inspectors reviewed thermal performance monitoring trending data for heat exchanger temperatures and fouling factors, and ES1850.017, "SW Heat Exchanger Program". The inspectors interviewed chemistry personnel and the system engineer to evaluate the process used to monitor the heat exchanger and commitments in Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The inspectors conducted system walkdowns and reviewed condition reports to verify that issues associated with the heat exchanger were identified and corrected.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q - 1 sample)

a. Inspection Scope

The inspectors reviewed operator implementation of the abnormal and emergency operating procedures on August 9, 2011. The inspectors evaluated operator performance during the simulator training, which included a reactor shutdown with loss of cooling and the failure of select components to operate as required. The inspectors verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the technical specification action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 1 sample)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on SSC performance and reliability. The inspectors reviewed system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure that NextEra was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by NextEra staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that NextEra staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Cooling water system with focus on emergency diesel generator heat exchanger performance and fouling.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that NextEra performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that NextEra personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When NextEra performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- A emergency diesel generator routine surveillance during emergent adverse grid conditions on July 11, 2011 (CR1668211)
- Planned maintenance for the emergency feedwater and enclosure air handling systems resulting in orange risk combinations on August 23-25, 2011 (WO 01382686)
- Planned maintenance for the A emergency diesel generator, emergency feedwater and reserve auxiliary transformer that resulted in the orange risk combinations on September 19-20, 2011 (WO 40077891 and 01207794)
- Planned maintenance for the emergency feedwater and 345 KV offsite power line 369 supplying that result the in orange risk combinations on September 21-22, 2011 (WO 40073287 and 01186862)
- Planned maintenance affecting the 345 kV offsite power line 369 and the 480 V unit substation 61 power supply on September 26-28, 2011 (WO 01197008)

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- AR1668013, reduced cooling water flow to the emergency diesel generators caused by marine fouling in the emergency diesel generator jacket cooling water heat exchangers service water supply on July 9, 2011
- AR1671288, high plant area temperatures caused by extreme environmental ambient temperatures on July 21, 2011

- AR1676974, removal of the pressure reducing valves from the fire protection system fire hose reels on August 22, 2011
- AR1662416, pressurizer code safety valve (1-RC-V117) seat leakage on June 20, 2011

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to NextEra's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by NextEra. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

Inadequate Operability Determination – AR 1668219, 1676974

Introduction. The inspectors identified a Green non-cited violation (NCV) of Technical Specification (TS) 6.7.1.a that requires that written procedures be established and implemented, including administrative procedures, as described in Regulatory Guide 1.33, that define authorities and responsibilities for safe operation. Specifically, NextEra identified nonconforming and degraded conditions in the fire protection system on July 15, 2011, (AR1668219), but did not properly evaluate fire protection system functional performance as required by NextEra procedure EN-AA-203-1001 (AR1676974).

Description. The Seabrook fire protection (FP) system is described in UFSAR Section 9.5.1, the UFSAR Appendix A Fire Hazards Analysis, UFSAR Appendix R Fire Protection of Safe Shutdown Capability, and in the technical requirements manual (TRM). The FP water supply system was designed to provide sufficient flow for a period of two hours to the largest standpipe/sprinkler header serving a safety related area (i.e., an emergency diesel generator) concurrent with operation of 2 fire hose stations flowing at 500 gpm [Sections F.3.E.b(b) and F.3.E.2(e)]. Service water booster pump, SW-P374, provides a backup water supply to standpipes in Category I Buildings in the event that a seismic event damages the main fire protection water supply.

On July 11, 2011, NextEra issued AR1668219 to document two instances of past changes made to the fire protection system that were not adequately documented and/or evaluated. Design change 99DCR013 removed pressure reducing valves and vent/drain valves from standpipes that supply station hose reels, but failed to evaluate the impact of higher fire hose flows on the fire system performance under design conditions. Further, the Seabrook fire fighters (Fire Brigade) had obtained higher capacity nozzles for use at the hose stations, but did not identify these changes to Engineering and did not evaluate the impact of these changes on FP system performance. Specifically, the changes were not evaluated for the impact on the performance of service water booster pump SW-P374, the fire water storage tank capacity, and the performance of the main fire pumps to provide design flows.

The deficiencies described in AR1668219 were presented to the Operation Shift Manager on July 15, 2011, to provide an operability assessment. The SM concluded that there was "no operability impact because there would be increased flow margin relative to the original design". Actions were assigned to Engineering to evaluate the current configurations and incorporate the changes into the design basis. Upon review of the AR1668219 on August 11, 2011, the NRC inspectors determined that the operability assessment lacked sufficient technical basis to conclude there was no impact on FP system performance. Although NextEra adequately assessed the impact of the changes relative to the increased flow at the hose stations, the assessment did not consider how the increased flows at the hose reels would impact flows to the rest of the FP system, or other potential impacts on the fire water supply. The assessment did not consider whether the fire system could provide adequate flow at required pressure for a period of two hours assuming concurrent operation of 2 fire hose stations with the largest demand standpipe/sprinkler header serving a safety related area in operation.

Procedure EN-AA-203-1001, "Operability Determinations/Functional Assessments," provides requirements for evaluation of nonconforming and degraded conditions and requires in Section 2.0.2 that functional assessments (FAs) be performed for systems and components (SSCs) that perform specified functions in the TRM. The Seabrook fire protection system is described in technical requirements (TR) 7, 8, 9, 10, 11 and 12. The procedure further requires in Section 4.2.2.B that the Shift Manager evaluate the degraded SSC per EN-AA-203-1001, Section 4.5, Functionality Assessments (FA). Section 4.5.1 requires that, if an SSC is determined to remain operable based on the Shift Manager's assessment, the Shift Manager shall assign a responsible group (engineering) to complete a functional assessment that is to be documented per Attachment 8, Guidance for Completion of FA. The inspectors determined that the evaluations NextEra performed on July 15, 2011, for the indentified fire protection system deficiencies did not perform the functionality assessment required by NextEra procedure EN-AA-203-1001.

After the NRC concerns regarding the July 15, 2011, fire protection operability assessment were discussed with NextEra on August 11, NextEra issued AR 1676974 that requested Engineering complete a functionality assessment in accordance with EN-AA-203-1001 to assess the impact of the FP system changes on FP system performance.

Based on the results of a functionality assessment subsequently completed on August 22, 2011, NextEra concluded that the fire protection system remained functional when plant installed equipment was used to respond to the FP system design basis condition. However, concerns were identified regarding the use of the higher capacity replacement nozzles in place of the originally installed plant equipment. Engineering's evaluation for the replacement nozzles determined that the nozzles caused higher system flows that would adversely impact the fire tank capacity in a design basis fire. Specifically, the main fire tanks would be drained sooner than the 2 hours assumed in the licensing basis under design basis conditions.

Further, NextEra identified concerns with potential run-out of P374 under certain conditions if NextEra used that pump to respond to a beyond design basis fire. Specifically, the Engineering evaluation determined that P374 did not have sufficient capacity to support the two 2.5 inch hoses/nozzles that would be used when offsite fire

fighters (Town of Seabrook) respond to the site during a beyond design bases fire. NextEra also identified a concern that the capacity of the main fire water pumps may be exceeded if two 2.5 inch hoses/nozzles were connected to the FP system during a beyond design bases fire response using offsite personnel. NextEra determined that the use of higher capacity equipment would be acceptable as long as the system capacity was considered by the station fire brigade and FP system parameters were controlled within the limits established by plant procedures. NextEra documented the fire system conditions/limitations in the station log on August 22, 2011 (OD/FA 11-0007), and initiated a "read and sign" training plan to inform all operator and fire brigade member of the limitations. NextEra plans further analyses of the FP system using a hydraulics model to better evaluate the impacts of using higher flow equipment. The inspectors reviewed the licensee's administrative controls to assure the functionality of the FP system and determined they were adequate.

Analysis. The inspectors determined that not properly implementing procedure EN-AA-203-1001 for the degraded condition discussed above was a performance deficiency. This performance deficiency was considered more than minor based on a comparison with Examples 3.j and 3.k of Appendix E of IMC 0612. Specifically, the performance deficiency was more than minor because a reasonable doubt of operability existed until further engineering evaluations were completed to demonstrate adequate performance of the fire protection system under design basis conditions. As such, the finding affected the Mitigating Systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events in order to prevent core damage. The issue was evaluated using IMC 0609, "Significance Determination Process" (SDP), and was determined to be of very low safety significance. Specifically, when evaluated under IMC 0609, Appendix F, the performance deficiency (failure to properly review undocumented/unevaluated changes that impact FP system hydraulic performance) affects the "Fixed Fire Protection System Category." A low degradation rating is assigned since the reduction in suppression flow rate for a design basis safe shutdown fire was expected to be less than 10% below the design rated value for the largest hydraulic demand, including an allowance for manual hose stream. This issue did not affect the likelihood that a fire might occur. The finding screens to Green with no further analysis. The finding had a cross cutting aspect in the area of problem identification and resolution, corrective action program, because NextEra personnel did not thoroughly evaluate problems such that resolutions address causes, including properly classifying, prioritizing and evaluating affected systems for operability (P.1(c)). Specifically, NextEra did not adequately evaluate the operability of the fire protection system considering the unevaluated system changes identified on July 11. 2011, nor did NextEra , ensure corrective actions to support functionality were completed in a timely manner.

Enforcement. Technical Specification 6.7.1.a, Procedures and Programs, requires written procedures be established and implemented, including administrative procedures as described in Regulatory Guide 1.33, that define authorities and responsibilities for safe operation. Procedure EN-AA-203-1001 defines responsibilities and requirements for completing functionality assessments to establish the acceptability of continued plant operation when SSCs are found to be degraded. Contrary to the above, NextEra did not adhere to the NextEra Procedure EN-AA-203-1001 requirements for completing functionality assessments when the fire protection system was identified as potential degraded on July 15, 2011. Specifically, NextEra did not complete and document a functionality assessment in accordance with EN-AA-203-1001 Section 4.5 after the shift manager made the call that the system remained functional on July 15, 2011. This

resulted in the delayed identification, assessment and correction of a condition that impacted fire system performance under certain conditions. Because the finding is of very low safety significance and was entered into NextEra's corrective action program (CR1676974), this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000443 / 2011004-01, Inadequate Functionality Assessment for Fire Protection System).**

1R18 Plant Modifications (71111.18 - 1 sample)

.1 Temporary Modifications

a. Inspection Scope

The inspectors reviewed the modification to the B Train Control Building Chilled Air system per EC273806 to determine whether the modifications affected the functions of systems that are important to safety. The inspectors reviewed the engineering change documentation and post-modification testing results, and conducted field walkdowns of the modification. The inspector reviewed implementation of the changes through work package WO 40108305. The inspector verified that the temporary modification did not degrade the design bases, licensing bases, and performance capability of the Control Building Chilled Air (CBA) system.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 7 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Service water pump 41A motor breaker electrical inspections and calibrations per WO 40067707 and WO 01210426 on August 18, 2011
- Supplemental emergency power system (SEPS) maintenance and inspections per WO 40068106 on August 25, 2011
- Component cooling water system thermal barrier pump maintenance per WO 01189142 on September 7, 2011
- Component cooling water system thermal barrier heat exchanger isolation valve CC-V1095 maintenance per WO01202145 on September 7, 2011
- A emergency diesel generator maintenance per WO 40111423 on September 21, 2011

- Enclosure building air handling fan EAH-F31B power supply maintenance per WOs 40074302 and 01197008 on September 27, 2011
- Service water pump P41D discharge isolation valve maintenance per WO 40113004 and 01172578 on September 30, 2011

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 5 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied technical specifications, the UFSAR, and NextEra procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- OX1416.05, Service Water Cooling Tower Pumps Quarterly and 2 Year Comprehensive Test on July 15, 2011
- IX 1680.931, SSPS Train A Mode 1 Actuation Logic Test on August 25, 2011
- CS0910.01, Primary System Sampling at CP-166A on August 23, 2011
- OX1401.02, RCS Leak Rate Calculations in August 22-26, 2011
- EX1803.003, Reactor Containment Type B and C Leakage Rate Tests on August 9, 2011

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 - 2 samples)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine NextEra emergency drill on September 14, 2011 to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The inspectors observed portions of emergency preparedness drill 11-03 to evaluate the performance of the emergency response organization and the adequacy of NextEra's post-drill critique. The inspectors observed emergency response operations in the technical support center and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by NextEra staff in order to evaluate NextEra's critique and to verify whether the NextEra staff was properly identifying weaknesses and entering them into the corrective action program.

b. Findings

No findings were identified.

.2 Training Observations

a. Inspection Scope

The inspectors observed a drill from the control room simulator during licensed operator requalification training on August 8, 2011, which required emergency plan implementation by an operations crew. NextEra planned for this evolution to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that NextEra evaluators noted the same issues and entered them into the corrective action program.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

During the period September 12-15, 2011, the inspector conducted the following activities to verify that NextEra was evaluating, monitoring, and controlling radiological hazards for work performed in the on-site calibration facility, a high radiation area (HRA). Implementation of these controls was reviewed against the criteria contained in 10 CFR Part 20, technical specifications, and the NextEra procedures.

Radiological Hazards Control and Work Coverage

The licensee uses a dedicated on-site facility for calibrating radiation monitoring instruments. Housed in the facility is a Shepherd Model 81 beam irradiator. The irradiator contains four (4) Cs-137 sources, having 12mCi, 240 mCi, 12 Ci, and 400 Ci activities.

The inspector observed the technician implement access controls and pre-operational checks for using the irradiator. These controls included:

- Obtaining two keys, one to enter the locked, stand-alone, facility (located onsite in the protected area, in a dedicated, locked fenced area, away from the main buildings) and another to operate the irradiator. The facility has two separated areas, the remote operating area and the area where the source is located. The building is classified, and posted, as a "radiological controlled area," thereby requiring the associated radiation work permit (RWP) administrative controls, dosimetry, entry through a turnstile, and frisking for contamination prior to exiting the building.
- Implementing the HRA controls for entering the facility. These included being on the correct RWP, having the required dosimetry (alarming and thermoluminescent dosimeter (TLD)), obtaining a pre-entry briefing, and filling out the necessary paperwork.
- Performing daily (and prior to use) safety checks on the irradiator. These checks included:
    - Ensure the tower assembly cover is locked closed
    - Verify that the air compressor is operating properly
    - Verify that the irradiator operating light is lit when a source is exposed
    - Ensure that the yellow alert light is lit when the 12 Ci source is exposed
    - Ensure that the red high level light is lit when the 400 Ci source is exposed
    - Ensure that the source operating light, outside the chamber door (in the separate, operating room) illuminates when any source is exposed
    - Verify that the 12 mCi source drops back into its shielded container and an alarm sounds when the photoelectric beam is broken, located at the entrance to the source room, by an object passing through it
    - Verify that individuals frisk before exiting the building

- Additionally, the inspector verified that semi-annual safety and maintenance checks have been performed as required by procedure HD0955.19, entitled "Use of the Model 81 Shepherd Beam Irradiator" and reviewed Condition Reports related to irradiator operation/maintenance issues.

b. Findings

No findings were identified.

Cornerstone: Public Radiation Safety

2RS07 Radiological Environmental Monitoring Program (REMP) (71124.07 – 1 sample)

a. Inspection Scope

During the period September 12-15, 2011, the inspector conducted the following activities to verify that NextEra implemented the REMP consistent with the technical specifications and the off-site dose calculation manual (ODCM) to validate that radioactive effluent releases met the design objectives of Appendix I to 10 CFR Part 50.

This inspection activity represents completion of one sample relative to this inspection procedure, completing the associated biennial requirement.

The inspector reviewed the 2009 and 2010 Annual Radiological Environmental Operating Reports and the 2010 Annual Land Use Census Report and associated census analysis to verify that the environmental monitoring programs were implemented as required by the ODCM.

The inspector walked down four (of eight) air sampling stations (Nos. AP-02, AP-03, AP-04 and AP-09), two (of three) seawater sampling stations (No. WS-01 and WS-51), two (of two) fish sampling stations (FH-03 and FH-53), one (of one) milk station (Nos. TM-15), one (of seven) vegetation sampling station (TG-10), 22 (of 27) on-site monitoring wells (Nos. BD-1, BD-2, BD-3, BD-4, BD-6, SC-1, SD-1, SD-2, SD-3, SD-5, SW-5, SW-6, SW-10, BU-10, SU-11, BU-11, TW-1, TW-2, TW-3 SW-1, SW-2, and SW-3), two (of three) off-site wells (Nos. WG-13 and WG-14) and 14 (of 69) TLD monitoring stations (Nos. TL-1, TL-2, TL-4, TL-5, TL-6, TL-7, TL-8, TL-9, TL-12, TL-13, TL-14, TL-15, TL-16, and TL-32). The inspector determined that sampling was conducted as described in the ODCM and related procedures. The inspector evaluated the sampling equipment material conditions and calibration records, when applicable. The inspector confirmed that the air sampling locations were in areas having high X/Q and D/Q wind sectors, and the TLDs were located in areas with the highest potential for public radiation exposure.

As part of the walk down, the inspector observed the technician collect and prepare for analysis air particulate/iodine filter samples, milk, vegetation and water samples, and verified that environmental sampling was representative of the release pathways, as specified in the ODCM, and that sampling techniques and sample submittal for analysis were in accordance with procedures.

The inspector reviewed the calibration/maintenance records for eight air samplers and verified that the air flow calibration equipment was currently calibrated.

Based on direct observation and review of records, the inspector verified that the meteorological instrumentation was operable, calibrated, and maintained in accordance with the guidance contained in the updated final safety analysis report (UFSAR) section 2.3.3.3, Seabrook Station Technical Requirement 22 - Meteorological Instrumentation, NRC Regulatory Guides 1.23 Rev. 0 and Regulatory Guide 1.97 Rev. 3, and the associated NextEra procedures. The inspector verified that the meteorological data readout and recording instruments in the control room and at the tower were operable for wind direction, wind speed, air temperature, and delta temperature. The inspector confirmed that redundant instrumentation was available and that the annualized recovery rate for meteorological data was greater than 90 percent.

The inspector reviewed condition reports and Nuclear Oversight field observation reports and audits relevant to the REMP requirements, to evaluate the threshold for which issues are entered into the corrective action program, the adequacy of subsequent evaluations, and the effectiveness of the resolution. The inspector also reviewed monthly radiological effluents technical specification (RETS)/ODCM effluent occurrence reports to evaluate the adequacy and timeliness of performance indicator information.

The inspector reviewed the quarterly results of NextEra's inter-laboratory comparison program to verify the accuracy of NextEra's environmental air filter, charcoal cartridge, water, biota, and milk sample analyses. Additionally, the inspector reviewed the annual quality assurance audit of NexEra's vendor providing environmental analytical services.

The inspector reviewed changes made by NextEra to the ODCM as a result of changes to the land use census or sampler station modifications since the last inspection. The inspector also reviewed technical justifications for any change in sampling location (or frequency) and verified NextEra performed the reviews required to ensure that the changes did not affect its ability to monitor the radiological condition of the environment.

The inspector confirmed that NextEra is implementing an onsite groundwater sampling and monitoring program sufficient to detect leakage from plant systems, structures and components. Included in this review was an evaluation of potential leakage from the storm drain system, spent fuel leak detection, plant drainage system and Waste Liquid Drain and associated leak detection methods.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (8 samples) (71151)

.1 Barrier Integrity Cornerstone

a. Inspection Scope

The inspectors reviewed NextEra's data for the Barrier integrity cornerstone performance indicators (PI) listed below to verify the accuracy of the information reported to the NRC for the period covering the fourth quarter of 2010 through the third quarter 2011. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, were used to verify the basis for each reported element. The inspectors reviewed licensee event reports (LERs), operating logs, procedures, and interviewed applicable personnel to verify the accuracy and completeness of the reported data. The inspectors also reviewed the accuracy of the number of critical hours reported.

- RCS Leakage
- RCS Activity

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index

a. Inspection Scope

The inspectors reviewed NextEra data for the Mitigating systems performance index PIs listed below to verify the accuracy of the information reported to the NRC for the period covering the fourth quarter of 2010 through the third quarter 2011. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, were used to verify the basis for reporting each data element. The inspectors reviewed licensee event reports (LERs), operating logs, procedures, and interviewed applicable personnel to verify the accuracy and completeness of the reported data for the following PIs.

- High Pressure Injection System MSPI
- Emergency AC System MSPI
- Heat Removal System MSPI
- Residual Heat Removal System MSPI
- Cooling Water System MSPI

b. Findings

No findings were identified.

.3 RETS/ODCM Radiological Effluent Occurrences

a. Inspection Scope

The inspector reviewed relevant effluent release reports for the period August 2010 through August 2011, for issues related to the RETS/ODCM radiological effluent occurrences performance indicator as specified in NEI 99-02. The NEI criteria for reporting data related to this performance indicator includes radiological effluent release occurrences that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152 – 2samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that NextEra entered issues into the corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended condition report screening meetings.

b. Findings

No findings were identified.

.2 Annual Sample: Review of the Operator Workaround Program

a. Inspection Scope

The inspectors reviewed the cumulative effects of the existing operator workarounds, operator burdens, existing operator aids, disabled alarms, and open main control room deficiencies to identify impacts on emergency operating procedure operator actions, and any impact on mitigating systems performance or iniitiating event frequency. The inspectors evaluated whether station personnel had identified, assessed, and reviewed operator workarounds as specified in Seabrook procedure OP-AA-108, "Oversight and Control of Operator Burdens."

The inspectors reviewed NextEra's process for identifying, prioritizing and resolving main control room distractions to minimize operator burdens. The inspectors also reviewed the system used to track these issues and recent NextEra self assessments of the program. The inspectors toured the control room and discussed current operator

workarounds with operators to ensure the items were being addressed on a schedule consistent with their relative safety significance.

b. Findings and Observations

No findings were identified. The inspectors determined that the issues reviewed did not adversely affect the capability of the operators to implement abnormal or emergency operating procedures. The inspectors also determined that NextEra entered operator workarounds and burdens into the corrective action program at an appropriate threshold and planned or implemented corrective actions commensurate with their safety significance.

.3 Annual Sample: Spent Fuel Pool Licensing Basis Updates

a. Inspection Scope

The inspectors reviewed the identification, evaluation, and corrective actions related to NextEra's discovery of degradation in SFP material that affected SFP reactivity and to changes NextEra made to the analytical methods it used to analyze reactivity conditions in the SFP. NextEra's actions for these issues were initiated as a result of a fleet self-assessment documented in AR 222265.

b. Assessment and Observations

No findings were identified. The inspectors' assessment of NextEra performance relative to identification, evaluation and corrective actions for this issue are discussed below. No immediate criticality safety issues were identified based on the conservative assumptions used in the design analysis and actual degradation observed less than that assumed in the analyses.

Effectiveness of Problem Identification

NextEra provided administrative control for the storage of spent fuel that was consistent with the design analyses of record and that fuel was configured in the spent fuel and new fuel vaults in configuration consistent with the established controls. The administrative controls were based on analytical methods to assure a rack design for criticality control that limits the effective multiplication factor, k_{eff}, to ≤ 0.95 without credit for soluble boron. NextEra has generated condition reports at a conservative threshold to assure that rack degradation conditions were addressed by the corrective action program. In response to a fleet self-assessment, NextEra identified the need to update the Seabrook license and design bases for spent fuel storage and took actions to revise UFSAR 9.1 and Figure 9.1-22 to better reflect the analytical methods used to address boral and boraflex degradation, and the administrative controls on fuel placement.

Effectiveness of Prioritization and Evaluation of Issues

NextEra completed thorough evaluations of rack degradation mechanisms. NextEra evaluated operating experiences at other facilities to identify the potential for further rack degradation at Seabrook. NextEra used contracted specialists to monitor rack degradation and to analyze rack reactivity to assure the criticality analyses bounded the actual condition in the pool. NextEra developed analytical strategies to account for further degradation. In response to the fleet self-assessment related to the license and design basis for spent fuel storage, NextEra considered the extent of condition and

determined there the SFP issue was unique and that were no other issues involving a nonconservative technical specification or licensing basis.

Effectiveness of Corrective Actions

NextEra implemented effective corrective actions for monitoring degradation mechanisms in spent fuel racks. NextEra actions continued under the Boral Monitoring program to trend the boral conditions in the spent fuel pool. The results reported in the June 2011 Boral Monitoring Report show that boral conditions remain bounded by the assumption used in the criticality analysis. In response to a fleet self-assessment, NextEra issued UFSAR Change Request UFCR 10-026 to revise UFSAR 9.1 and Figure 9.1-22 to better reflect the analytical methods used to address boral and boraflex degradation; and, (ii) NextEra initiated a criticality analysis in 2011 to support a new license amendment request.

However, prior to the initiatives in 2010, NextEra had not taken timely actions to assure the licensing basis remained current with the design basis. Although NextEra made changes to the SFP design basis in 1998, the UFSAR had not been revised prior to UFCR 10-026 to address the new administrative controls or reflect the analytical assumptions used related to boraflex neutron absorbtion. Similarly, the fuel placement curves in TS 3.9.13 in effect on September 30, 2011, reflects the design basis issued as Amendment 6 in 1991. TS 3.9.13 had not been updated to reflect the changes made to the design basis analysis made in 1998 and 2002 due to rack degradation, and is nonconservative with respect to those analyses. Although NextEra initiated actions to revise the SFP licensing basis via LARs 01-12 and 04-05, NextEra should have taken more timely action per the guidance in NRC Administrative Letter 98-10 to address a nonconservative Technical Specification. NextEra is addressing this issue by a license amendment request planned for submittal in late 2011. The inspectors determined that the failure to update the UFSAR and TS to account for the SFP degradation was not more than minor performance deficiency because, as discussed above, NextEra had initiated administrative controls that ensured that the spent fuel rack condition did not violate technical specification requirements and as such the performance deficiency was not a precursor to a significant event, would not become more significant if left uncorrected and did not adversely affect a reactor safety cornerstone objective.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153 - 2 sample)

.1 (Closed) LER 05000443/2011-001, Noncompliance with Technical Specification for Leakage detection Instruments

Licensee Event Report 2011-01 dated May 20, 2011 reported a determination per 10 CFR 50.73(a)(2)(i)(B) that Seabrook had operated in a condition prohibited by Technical Specifications (TSs). NextEra determined in March 2011 that the containment backup gaseous radiation monitor RM-6548 did not meet the seismic requirements and thus was not qualified for monitoring reactor coolant system pressure boundary leakage per TS limiting condition for operation (LCO) 3.6.4.1. On several occasions prior to the discovery of the deficiency, NextEra relied on RM-6548 to satisfy the TS 3.6.4.1 requirements while the primary radiation monitor was out of service. RM-6548 was installed as plant design change 89DCR046 on February 2, 1990. The radiation monitor design lacked full seismic qualification because RM-6548 readouts did not have signal isolators to assure the indications remained functional following operational basis earthquakes. In the configuration installed per 89DCR046, RM-6548 readouts were

susceptible to failures within other monitors or faults on the data loop common to the monitor. Design change EC27187 0 was implemented on May 1, 2011, to upgrade RM-6548 by installing electrical signal isolation devices and a seismically qualified RM-23 indicator to control room panel RM-CP-180A.

The inspectors reviewed the accuracy of the LER and verified compliance with the reportability requirements in 10 CFR 50.73. This issue was a violation of Seabrook TS LCO 3.4.6.1. The violation was caused by the failure to provide a leakage detection monitor capable of performing its function following an operating basis seismic event. The failure to comply with the TS requirements constitutes a violation of NRC requirements that is discussed further in Section 4OA7 of this report. This LER is closed.

.2 Response to Events - Hurricane Irene

The inspectors provided site coverage during one adverse weather event. The inspectors reviewed NextEra's actions to protect risk significant systems from Hurricane Irene on August 27-29, 2011. The inspection included a review of the status of plant safety and electrical systems, monitoring of site environmental conditions and walk downs of plant areas. The inspectors verified that NextEra responded to the severe weather conditions in accordance with procedure OS1200.03, "Severe Weather Conditions." The inspectors reviewed site conditions and hazards against the emergency plan criteria for classifying events. The storm had no significant impact on the plant or site. The inspectors reviewed corrective actions for problems identified during the inspection and examined Next Era's extent of condition review for these issues.

4OA5 Other Activities (60855.1 – 1 sample)

.1 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Controls

a. Inspection Scope

The inspectors reviewed routine operations and monitoring of the ISFSI. The inspectors walked down the ISFSI to evaluate its material condition, performed independent dose rate measurements of the storage modules, and confirmed module temperatures were within the required limits. The inspectors also reviewed plant equipment operator logs for ISFSI surveillances and environmental (ISFSI) dosimetry records. Radiological control activities for the ISFSI were evaluated against 10 CFR Part 20, ISFSI Technical Specifications, and NextEra's procedures.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On October 10, 2011, the inspectors presented the results of the third quarter integrated inspections to Mr. P. Freeman and Seabrook Station staff. The inspectors also confirmed with NextEra that no proprietary information was reviewed by inspectors during the course of the inspection.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by NextEra and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as a NCV.

TS LCO 3.4.6.1, "RCS Leakage Detection Systems," requires three leakage detection systems be operable, including a containment sump level monitoring system, a containment atmosphere particulate radiation monitoring system and a containment atmosphere gaseous radiation monitoring system. The TS allow plant operation for up to thirty days with one leakage detection system inoperable, and requires a plant shutdown in 6 hours if more than one leakage detection system is inoperable. Contrary to the above, Seabrook operated for greater than 6 hours on October 5, 2010, December 15, 2010, January 4, 2011 and March 10, 2011, with both particulate and gaseous radiation monitors inoperable. On each occasion, RM6548 was credited for RCS leakage detection for more than 6 but less than 24 hours. The finding affected the Initiating Events cornerstone in that a system used to identify reactor coolant system leakage might not have been functional following a operational basis earthquake. The backup gas monitor remained functional but lacked full qualification, as described in Section 4OA3 above. This finding is of very low safety significance (Green) per IMC 0609 because the issue did not result in a total loss of safety function and did not contribute to both a transient initiator and the likelihood that mitigating functions would be unavailable. Since the issue is of very low safety significance and was entered into the corrective action program as AR 1633042, the issue is considered a licensee-identified, non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

ATTACHMENTS: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Brown, Supervisor, Civil Engineering
V. Brown, Senior Licensing Analyst
K. Browne, Plant General Manager
J. Esteves, Plant Engineering
P. Freeman, Site Vice President
P. Gurney, Reactor Engineering Supervisor
M. Collins, Manager, Design Engineering
L. Hansen, Plant Engineering
P. Harvey, REMP Manager
N. Levesque, Plant Engineering
A. Merrill, Reactor Engineer
M. Nadeau, System Engineer, Control Building Air Handling
M. O'Keefe, Licensing Manager
D. Perkins, Radiological Engineer
K. Randall, Reactor Engineer
D. Robinson, Chemistry Manager
M. Scannel, Radiological Engineer
G. Sessler, Plant Engineering
R. Thurlow, Health Physics Supervisor - NU
J. Walsh, Nuclear Steam Supply System, Supervisor
T. Waechter, Assistant Operations Manager
B. Woodland, Plant Engineering Supervisor

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened/Closed

05000443 /2011004-01	NCV	Inadequate Functionality Assessment for Fire Protection System

Closed

05000443/2011001	LER	Noncompliance with Technical Specification for Leakage Detection Instruments (Section 4OA3.1)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection
UFSAR Section 2.0, 3.0, 9.0
NM11800
OS1200.03, Severe Weather Conditions, Revision 18
Plant Barrier DBD-PB-01
Seabrook Flood Protection Manual

Section 1R04: Equipment Alignment
UFSAR 8.3.1.1.e, Standby Power Supply (Diesel Generator Units)
Drawings B20465, B20459, B20460, B20458
OX1426.19, Aligning DG 1B Controls for Auto Start

Section 1R05: Fire Protection
Fire Protection Pre Fire Strategies
Fire Impairment List
Technical Requirement 11 Fire Rated Assemblies
Technical Requirement 12 Fire Detection Instrumentation
UFSAR Section 9.5.1 Fire Protection Systems
OS1200.00A, Fire Hazards Analysis for Affected Area / Zone – Appendix A
OS1200.00, Response to Fire or Fire Alarm Actuation, Revision 15

Section 1R06: Flood Protection Measures
Condition Report 06-02443
UE&C Moderate Energy Line Break Study, Revision 5
Drawing 1-NHY-BD-2006, Control Building – Cable Spreading Room

Section 1R07: Heat Sink Performance
Condition Report 1667857, 1668211, 1673445, 1689296, 1694951
Heat Exchanger E42B Thermal Performance Data, 2011

Section 1R11: Licensed Operator Requalification Program
Procedure OS1231.03 Revision 15
Licensed Operator Requalification Training Simulator Demonstration Examination, 8/8/11
Emergency Operating Procedures E-0, FR-S.1, FR-H.1
NT-5701-5, Crew Simulator Evaluation, 8/8/11

Section 1R12: Maintenance Effectiveness
AR 1668211, 1664708, 1674154, 1674161
Heat Exchanger E42A/B Performance, January - September 2011
Plant Engineering Action Register
System Health Reports
Condition Reports - 2011
Work Orders - 2011
Station Operating Logs - various

Section 1R15: Operability Determinations and Functional Assessments

AR222265
UE&C Calculation 6.05.52.05
Technical Requirement 24, Area Temperature Monitoring
POD for AR1671288, Area High Temperature Conditions
POD for AR1688487, D4317 High Temperature Alarm PZR Safety Valve Simmering
Crosby valve Style HB and HB-BP Instruction I-1105-2
Boric Acid Corrosion Control ASME Bolting Evaluation SI-V82
OS0043.15, Fire Protection Booster Pump FP-F-374

Section 1R18: Plant Modifications

UFSAR 9.4.1, Control Room Complex HVAC System
EC273806, CBA Train B (1-CBA-E-230-B) CKT#2 Condenser Coil Repair, Revision 0
WO 40108305, 9/6/11

Section 1R19: Post Maintenance Testing

Work Orders (WO) 01210426, 01210425, 40067707, 01189142, 00620240, 01202144, 01202145, 0508455
Condition Report 191401
OX1416.04, Service Water Quarterly Pump and Discharge Valve Test and Comprehensive Pump Test, Revision 14
OX1456.81, Operability Testing of IST Valves, Revision 14
Fairbanks Morse Owner's Group, Recommended Maintenance for Pielstick Diesel Engines in Nuclear Standby Service, Revision 0
Fairbanks Morse Owner's Group, Pielstick Engine Maintenance Guidelines, Revision 1
FP22574, EDG Vender Technical Manual

Section 1R22: Surveillance Testing

Technical Specifications 4.3.1.1, 4.3.2.1, 3.4.8, 3.4.6.2
UFSAR 7.2.2.2.c
CS0910.01, Primary Systems Sampling at SS-CP-166A, Revision 11
CS0910.02, Gaseous Waste system Sampling, Revision 9
CX0901.02, Determination of Dose Equivalent I-131, Revision 11
EX1803.003, Reactor Containment Type B and C Leakage Rate Tests, Revision 10
Chemistry Management Data System: RCS Data trends for 2011
Gamma Spectrum Analysis Report, Sample 162412 LTDN DEI, 8/23/11
IX 1680.931, SSPS Train A Mode 1 Actuation Logic Test, Revision 0
Work Orders 40059622, 01173458, 0706560, 40073950, 40099691
Condition Report 1669480
Plant Engineering Action Register

Section 1EP6: Drill Evaluation

Form ER 2.0B, Seabrook Station State Notification Fact Sheet, 8/8/11
Form EPDP-03A, EP Cornerstone Reporting and Information Form, 8/8/11
Combined Functional Drill #11-03 Scenario and Evaluation

Section 2RS01: Radiological Hazard Assessment and Exposure Controls
Section 2RS07: Radiological Environmental Monitoring Program (REMP)

Procedures
HD0955.19, Use of the Model 81 Shepherd Beam Irradiator, Revision 10
HX0956.01, Radiological Environmental Sampling of Air Particulates and Radioiodine, Revision 9
HD0957.04, Maintenance of Environmental Air Sampling Motor/Pump, Revision 9
HD0957.01, Calibration of Environmental Air Samplers, Revision 7
HD0958.41, Blind Spiking of TLDs, Revision 2
IX0654.50, MET System Calibration, Revision 8
RP 17.2, Historical Site Radiological Assessment, Revision 5
SM 7.12, Radiological Effluent Quality Assurance Program, Revision 3
HD0956.03, Radiological Environmental Sampling of Ground Water, Revision 6
EV-AA-01, Fleet Groundwater Protection Program, Revision 0
EV-AA-100-1001, Fleet Ground Water Protection Program Implementing Guideline, Revision 0
JX0999.400, Environmental Monitoring of Direct Radiation, Revision 2
HX0956.04, Radiological Environmental Sampling of Food Crops and Vegetation, Revision 10
HX0956.05, Radiological Environmental Sampling of Milk, Revision10
JS0999.001, Radiochemistry Control Charts, Revision 3
CP 4.1, Effluent Surveillance Program, Revision 23
JX0999.401, Land Use Census Performance, Revision 00
Seabrook Environmental Studies Quality Program and Standard Operating Procedures, Revision 10 (Normandeau Associates Inc.)

Condition Reports
01678178, 01683065, 00574599, 01634664, 01682615, 00204909, 00205717, 0210183, 00218027, 00218645, 00218662, 00219012, 00220837, 00567160, 00567537, 00573816, 01679782, 01681682, 01673467, 01673121, 01686302, 01666198

Instrument Calibration Records
Air Sampler Nos. 8205053, 13528043, 14779957, 13014902, 8205055, 8205052, 13181304, and 13528044
Meteorological Instrumentation (Primary Tower W.O. 40040440 dated 3/15/2011 & Backup Tower W.O. 40040442 dated 3/14/11)

Sampling Sites
Air Particulate/Iodine: AP-02, AP-03, AP-04 and AP-09
Milk: TM-15

Vegetation:	TG-10
Sea Water:	WG-1 and WG-51
Fish Sampling:	FH-03 and FH-53
Thermolumeniscent Dosimeters:	TL-1, TL-2, TL-4, TL-5, TL-6, TL-7, TL-8, TL-9, TL-12, TL-13, TL-14, TL-15, TL-16 and TL-32
Offsite Monitoring Wells:	WG-13 and WG-14
On-site Monitoring Wells:	BD-1, BD-2, BD-3, BD-4, BD-6, SC-1, SD-1, SD-2, SD-3, SD-5, SW-5, SW-6, SW-10, BU-10, SU-11, BU-11, TW-1, TW-2, TW-3 SW-1, SW-2 and SW-3

Nuclear Oversight (NO)/Self-Assessment Reports
SBK 10-029, Radiological Environmental Monitoring/ Environmental Protection dated 09/01/10.
SBK 10-040, Chemistry Control Program and Effluent Control Program dated 11/15/10.

SBK 11-027, Seabrook Radiological Environmental Monitoring Program dated 8/25/11.

Miscellaneous
Seabrook Station Updated Final Safety Analysis Report, Section 2.3 Meteorology
Seabrook Station Offsite Dose Calculation Manual, Rev. 35
Seabrook Station Technical Specifications Section 6.7.6.h Radiological Environmental Monitoring Program
Seabrook Station Technical Requirements Manual, Technical Requirement 22 Meteorological Instrumentation
2009 and 2010 Annual Radiological Environmental Operating Reports
Quality Assurance Results for AREVA Environmental Laboratory 1st , 2nd, 3rd QTRs 2010 (2010 AREOR Tables 6-1 and 6-2)
Quality Assurance Results for General Engineering Laboratory 4th QTR 2010 (2010 AREOR Tables 6-3, 6-4 and 6-5)
2010 Annual Quality Assurance Report for the Radiological Environmental Monitoring Program January 2010 – December 2010
HPSTID-11-007 Historical Site Radiological Assessment 2010 and 50.75 (g) Decommissioning Records
HPSTID-10-005, Environmental TLD Results for the Dry Fuel Storage Facility
HPSTID-11-008, Storm Catch Basin Clean Out - 2011
RETS/ODCM Performance Indicator Data for June 2010 through July 2011
ISFSI TLD Monitoring Data
NUPIC Audit/Survey Number 20459 for Supplier General Engineering Laboratories, LLC Charleston, SC conducted March 23, 2009 to March 27, 2009
AREVA 32-9146313-000 SBC-1086: 2010 Land Use Census Analysis
AREVA 32-9159715-000 SBC-1091: Estimated Public Doses from Seabrook Station Effluents in 2010 (contains Offsite Direct Shine Dose Estimates for 2010 on pp. 46 – 55)
AREVA, Seabrook Station, Radiological Effluent Impact Assessment for 2010

Section 4OA1: Performance Indicator Verification
NEI 99-02 Regulatory Assessment Performance Indicators, 2010-2011
Chemistry Management Data System: Data for 2011
Station Logs

Section 4OA2: Identification and Resolution of Problems
Condition Reports 222265, 03-00134, 392996, 395717
SBK-L-11181, License Amendment Request Regarding Cold Leg Injection Permissive
OP-AA-108, Operator Burden Recovery Plan
SM 7.20
UFSAR Section 9.1, Fuel Storage and Handling
UFSAR Change Request No. 10-026 dated 9/15/10
Root Cause Analysis for Turkey Point CR2010-6254
Seabrook Review of Turkey Point SFP Root Cause
Engineering Memorandum RPSB95-027, Boraflex Management Assessment, October 6, 1995
Technical Clarification TS-023, Spent Fuel Assembly Storage, 11/3/95
DES-NFQA-98-02, Criticality Analysis of Seabrook Station's New and Spent Fuel Boral and Boraflex Storage Racks, September 1998
10CFR50.59 Evaluation for DCR 97-014, New Spent Fuel Storage Racks, 3/30/98
UFSAR Change Request 97-066 for DCR 97-014, 4/15/98
10CFR50.59 Evaluation, New Spent Fuel Storage Racks, 3/30/98
EE-11-009, Boral Monitoring Report Number 6 Cycle 14, 6/21/11

Calculation SBC-1005, Evaluation of SB Spent Fuel Pool Criticality with Boral Blistering, 9/4/03
Generic Letter (GL) 91-18, "Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions", Revision 1
NRC Administrative Letter 98-10, Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety, 12/29/98
RX0720.2, SFP/NFASV Criticality Surveillance, Revision 3
Station Operator and Chemistry Logs
WO 01192002, SFP criticality surveillance
SFP Map (MTF) 10-013) dated 7/23/10
YAEC-1778, Criticality Analysis of Seabrook Station New and Spent Fuel storage Racks, February 1991
License Amendment No 6 for NPF-86, 8/27/91
SORC Meeting 10-036
Form F, RS0720, New fuel Storage Vault ICA Map, Revision 7
NHY Letter NYN-91089, request for Amendment, 5/18/91
Draft Division of System Safety Interim Staff Guidance DSS-ISG-2010-01:Staff Guidance Regarding the Nuclear Criticality Safety Analysis for Spent Fuel Pools
SBK-L-11077, Core Operating Limits Report for Cycle 15
Calculation SBK-1FJF-11-226, Assessment of Holtec Criticality Analysis of Spent Fuel Pool Fuel Placement, 10/3/11

Section 4OA5: Other Activities

Condition Reports 1633042, 396420, 07-06828
Prompt Operability Determination for CR 396420
OS1252.04, Failure of RDMS Computer or Control Room Radiation Monitor Display, Revision 18
E0, Reactor Trip or Safety Injection
Leakage Detection system Evaluation
Design Changes EC271870 and 12704
Licensee Event Report 11-01

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CAP	corrective action program
CBA	control building chilled air
CR	condition report
DG	diesel generator
EDG	emergency diesel generator
EFW	emergency feedwater
HRA	high radiation area
IMC	Inspection Manual Chapter
ISFSI	independent spent fuel storage installation
IP	inspection Procedure
MR	maintenance rule
NO	nuclear oversight
NCV	non-cited violation
NRC	U.S. Nuclear Regulatory Commission
ODs	Operability Determinations
PAB	primary auxiliary building
PARS	Publicly Available Record
PMT	post-maintenance testing
RCS	reactor coolant system
REMP	radiological environmental monitoring program
RETS	radiological effluents technical specification
RHR	residual heat removal
RWP	radiation work permit
SDP	Significance Determination Process
SEPS	supplemental emergency power supplies
SFP	spent fuel pool
SM	shift manager
SSCs	structures, systems and somponents
SW	service water
SWP	service water pump
TLD	thermoluminescent dosimeter
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WO	work order
WR	work request