



April 26, 2013

Docket 50-443
SBK-L-13062

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Seabrook Station

10CFR50.59 Report, Revision 15 to the Seabrook Station Updated Final
Safety Analysis Report, Revision 12 to Appendix R, "Fire Protection Safe
Shutdown Capability," Revision 13 to Appendix A, "Evaluation and Comparison
to BTP APCSB 9.5-1," and Revision 135 to the Technical Requirements Manual

NextEra Energy Seabrook, LLC (NextEra) encloses the 10CFR50.59 Report, Revision 15 to the Seabrook Station Updated Final Safety Analysis Report (UFSAR), Revision 12 to Appendix R, "Fire Protection Safe Shutdown Capability," Revision 13 to Appendix A, "Evaluation and Comparison to BTP APCSB 9.5-1," and Revision 135 to the Technical Requirements Manual. The 10CFR50.59 Report and the UFSAR are submitted pursuant to the requirements of 10CFR50.59(d)(2) and 10CFR50.71(e). The 10CFR50.59 report and the UFSAR report cover the period from October 26, 2011 through March 12, 2013. UFSAR Revision 15 incorporates approved and implemented design changes and UFSAR changes identified through March 12, 2013. The incorporated changes to the UFSAR have been reviewed in accordance with 10CFR50.59. The reviews determined that these changes did not require prior NRC approval.

The UFSAR is provided in its entirety on CD-ROM in Portable Document Format (PDF). Changes from Revision 14 are indicated by a change in revision number and a vertical line (revision bar) in the margin next to the change. The List of Effective Pages contained within the UFSAR provides a listing of each page and its revision number with a revision bar indicating which pages contain changes. The controlled drawings referenced in the UFSAR are provided on a separate CD-ROM. Appendix R, Appendix A and the Technical Requirements Manual are also provided on CD-ROM.

The summaries of 10CFR50.59 evaluations for design changes incorporated in Revision 15 of the UFSAR are attached as Enclosure 1. No 10CFR50.59 evaluations were performed for other activities during the reporting period. Enclosure 2 provides a summary for changes to the UFSAR incorporated using the guidance of NEI 98-03, "Guidelines for Updating Final Safety Analysis Reports."

A006
IE47
A053

Enclosure 3 is a listing of UFSAR Change Requests (UFCRs) incorporated in UFSAR Revision 15 during the reporting period. The affected Sections, Tables and Figures are provided for each UFCR. Enclosure 4 contains UFCRs incorporated in Appendix R, Enclosure 5 provides the UFCRs incorporated in Appendix A and Enclosure 6 contains UFCRs incorporated in the Technical Requirements Manual.

One copy of the UFSAR revision on CD-ROM is being submitted to the Document Control Desk, Washington, DC, along with a copy to the Region I Regional Office and a copy to the Resident Inspector at Seabrook Station.

Should you have any questions regarding this matter, please contact Mr. Michael O'Keefe, Licensing Manager, at (603) 773-7745.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on

Sincerely,



Kevin T. Walsh
Site Vice President
NextEra Energy Seabrook, LLC

cc: NRC Region I Administrator
NRC Project Manager, Project Directorate I-2
NRC Senior Resident Inspector

Enclosed CD Listing:

CD 1 of 3, 39 files, 577,652,736 bytes
CD 2 of 3, 19 files, 290,220,032 bytes
CD 3 of 3, 3 files, 47,396,864 bytes

Enclosure 1 to SBK-L-13062

Summary Report of Facility Changes, Tests, and Experiments
Completed in Accordance with the Requirements of 10CFR50.59
for Revision 15 of the Updated Final Safety Analysis Report

Design Change Evaluations

Design changes documented in the following Engineering Changes (EC) were installed during the period covered by the 10CFR50.59 Report. A 10CFR50.59 evaluation was performed for each EC. For each of the evaluations performed, there were no activities requiring prior NRC approval identified.

10CFR50.59 Evaluation 11-003

EC 271263, MSO Resolution: EFW
Flow Control Valve Circuit (UFCR 11-021)

Summary Description and Purpose: EC271263 mitigates Multiple Spurious Operation (MSO) scenarios 28 and 51b that potentially have an impact on fire safe shutdown as identified by Seabrook's implementation of NEI 00-01, Guidance for Post-fire Safe Shutdown Circuit Analysis. MSO scenario 28 is spurious closure of the emergency feed water (EFW) flow control valves (FCV) from fire-induced cable damage in the essential switchgear rooms (SWGR) and electrical tunnels (ET). MSO scenario 51b is spurious closure of the discharge path for the EFW pump as well as spurious isolation of recirculation valve(s) due to fire-induced cable damage in the associated switchgear room and electrical tunnels. The EC used dedicated conduit, physical separation and protective sleeves to prevent a hot short from energizing the cables and internal wires capable of causing the valves to spuriously close and added additional relays to ensure required flow paths remain unaffected by MSO scenarios 28 and 51b

Evaluation Summary: A 10 CFR 50.59 evaluation was performed for this EC as the screening for the design change resulted in the "screening in" of changes regarding new components to be installed in the circuitry of the EFW flow control valves. The evaluation conducted for the installation of new components in the circuitry of the EFW flow control valves determined that the addition of new components, in itself, results in decreased reliability due to the increased likelihood of a malfunction (added active components, plus additional and passive cabling and terminal connections) whose malfunction would prevent a valve from closing upon demand. However, the increased probability of such a malfunction is minimal, based on the quality standards, surveillance testing, and the ability for detection of a failure of the new components and the associated system operation. The activity involves SSCs required for mitigation of feed water or main steam line break, and as such is not an initiator of any accident. Furthermore, the resulting design continues to meet single active failure criteria for the control of the valves for performance of design functions. The decrease of reliability of the individual EFW control valves is minimal such that the design function for faulted steam generator isolation is maintained, as the single failure criteria will continue to be met. The evaluation concluded that prior approval is not required.

10CFR50.59 Evaluation 11-004

EC 271265, MSO Resolution: PORV
and High Head Injection Valve Circuit
Changes (UFCR 11-002)

Summary Description and Purpose: EC 271265 mitigates Multiple Spurious Operation (MSO) scenarios 18, 19 and 21 that potentially have an impact on fire safe shutdown as identified by Seabrook's implementation of NEI 00-01, Guidance for Post-fire Safe Shutdown Circuit Analysis. MSO scenarios 18 and 19 are spurious operation of Pressurizer Power-Operated Relief Valves (PORVs) RC-PCV-456A and B and their respective block valves that could result in a Reactor Coolant System (RCS) pressure and level transient. MSO scenarios 18 and 19 were mitigated by modifying the existing PORV main control board (MCB) control switch circuit to provide a new cable connection to the disable panels in the Diesel Generator (DG) rooms. To prevent spurious operation of the PORV valves from fire induced cable damage in the essential switchgear room (SWGR), the new cable was run in dedicated conduit in the SWGR. At the disabling panel, the existing PORV disable switch (RC-SS-456-A2 and B2) was rewired to serve as a remote/local switch. The remote/local switch will isolate the new PORV MCB cable connections when switched to local control.

MSO scenario 21 is the spurious opening of High Head Injection Valves SI-V-138 and SI-V-139 in conjunction with the spurious starting of the standby charging pumps, CS-P-2A or CS-P-2B, that can result in excess RCS makeup and pressurizer overfill. MSO scenario 21 is mitigated by adding auxiliary relays to prevent spurious opening of SI-V-138 and SI-V-139 from fire-induced cable damage in the SWGR. The cable connecting the relay to the open contactor was routed in dedicated conduit in the SWGR and internal wires installed in protective sleeves to prevent a hot short from energizing them and spuriously opening valves SI-V-138 and SI-V-139.

Evaluation Summary: A 10 CFR 50.59 evaluation was performed for this EC as the screening for the design change resulted in the "screening in" of changes regarding new components to be installed in the circuitry of the High Head Injection valves (SI-V0138 and SI-V-139). The evaluation conducted determined that the addition of the new components installed in the circuitry of the High Head Injection valves, in itself, results in decreased reliability due to the increased likelihood of a malfunction (added active components, plus additional passive cabling and terminal connections) whose malfunction would prevent a valve from opening upon demand. However, the increased probability of such a malfunction is minimal, based on the quality standards, surveillance testing, and ability for detection of a failure of the new components and the associated system operation. The activity involves SSCs required for mitigation of a Loss of Coolant Accident (LOCA) and as such is not an initiator of any accident. The decrease in reliability of the individual high head injection valves is minimal such that the design functions to supply high head ECCS injection and safe shutdown are maintained, as the single active failure criteria will continue to be met. The evaluation concluded that prior approval for the installation of new components installed in the circuitry of the High Head Injection valves is not required.

10CFR50.59 Evaluation 12-001

EC 271261, MSO Resolution: RWST Valve Auto Open on VCT Valve Closure (UFCR 11-039)

Summary Description and Purpose: EC 271265 mitigates Multiple Spurious Operation (MSO) scenario 10 that potentially has an impact on fire safe shutdown as identified by Seabrook's implementation of NEI 00-01, Guidance for Post-fire Safe Shutdown Circuit Analysis. MSO scenario 10 is charging pump damage due to isolation of the charging pump suction by a spurious closure of either Volume Control Tank (VCT) isolation valves (CS-LCV-112B or CS-LCV-112C).

EC 271261 resolved MSO scenario 10 by modifying the VCT isolation valve circuits to add normally open auxiliary relay contacts in series with the valve close contactor to prevent spurious closure of the VCT isolation valves in the event of a fire in the PAB.

Evaluation Summary: A 10 CFR 50.59 evaluation was performed for this EC as the screening for the design change resulted in the "screening in" of changes regarding new components to be installed in the circuitry of the VCT Isolation Valves and RWST Charging Pump Suction Valves. The evaluation conducted determined that the addition of new components installed in the circuitry of the VCT Isolation Valves and RWST Charging Pump Suction Valves, in itself, results in decreased reliability due to the increased likelihood of a malfunction (added active components, plus additional passive cabling, environmental seals, and terminal connections) that could cause the inability of a VCT isolation valve to be closed manually for non-fire safe shutdown or from the remote safe shutdown panel, or prevent an RWST valve to be closed for the ECCS cold leg recirculation mode, or for safe shutdown. However, the increased probability of such a malfunction is minimal based upon the quality standards, surveillance testing, and ability for detection of a failure of the new components and the associated system operation. The evaluation determined that the addition of the new components installed by EC 271261 did not require prior approval.

10CFR50.59 Evaluation 12-002

EC 271262, MSO Resolution: ASDV Circuit Changes (UFCR 11-024)

Summary Description and Purpose: EC 271262 mitigates Multiple Spurious Operation (MSO) regarding the spurious operation of the atmospheric steam dump valves (ASDVs) that potentially has an impact on fire safe shutdown as identified by Seabrook's implementation of NEI 00-01, Guidance for Post-fire Safe Shutdown Circuit Analysis. The EC addresses the spurious operation of the ASDVs for a fire in the Switchgear room, the electrical tunnels and the pipe chases. Each ASDV has both A and B train control. One train of controls has the capability to modulate the ASDV position, as well as full open, full close, and position maintained. The other train of controls only has the capability for full open and full close. Contacts from each ASDV's control switch were added to the negative leg of each train's circuit to provide a double break in the circuit. This prevents the spurious operation of the valve due to fire induced hot shorts. A cable is provided for each ASDV for the train with modular control from the MCB controls to the solenoids. The new cable does not enter the switchgear rooms so fires in those areas can no longer cause spurious ASDV openings.

The new control panels 1-MM-CP-915A and 1-MM-CP-915B installed in the electrical tunnel provide the capacity to isolate the respective valve solenoids' new cable connections from a fire in the Main Control Room and Cable Spreading Room. Each panel houses two new Remote/Local selector switches Train A (MS-SS-3001-3 and MS-SS-3003-3) and Train B (MS-SS-3002-3 and MS-SS—3004-3).

Evaluation Summary: A 10 CFR 50.59 evaluation was performed for this EC as the screening for the design change resulted in the “screening in” of changes regarding new components installed in the circuitry of the ASDVs. The addition of the new components, in itself, results in decreased reliability due to the increased likelihood of a malfunction (added active components, plus additional passive cabling and terminal connections) whose malfunction would prevent a valve from opening on demand. However, the increased probability of such a malfunction is minimal, based on the quality standards and surveillance testing of the new components and the associated system operation. The design activity involves SSCs required to open for plant cooldown for safe shutdown. The inadvertent opening of an ASDV during power operation is a potential initiator of an accident of increased heat removal by the secondary system described in Section 15.1.4 of the UFSAR. This design change involves the addition of components to preclude fire-initiated spurious opening of the valves. Therefore, there is no increase of the frequency of this accident resulting from this design change. Furthermore, the resulting design continues to meet single active failure criteria for the control of the valves for performance of design functions. The decrease of reliability for the individual ASDVs is minimal such that the design function for safe shutdown is maintained as the single failure criteria will continue to be met. The evaluation determined that the addition of the new components installed in the circuitry of the ASDVs per EC 271262 did not require prior approval.

10CFR50.59 Evaluation 12-004

EC 271259, Revision 006, MSO
Resolution: SW and CC MOV Circuit
Changes (MSO Scenarios: 1, 2, 3, 44, 45,
51c, 51d and SB-15) (UFCR 12-010)

Summary Description and Purpose: EC 271259 mitigates Multiple Spurious Operation (MSO) regarding resolution of MSO Scenarios 1, 2, 3, 44, 45, 51c, 51d and SB15 which potentially have an impact on fire safe shutdown as identified by Seabrook's implementation of NEI 00-01, Guidance for Post-fire Safe Shutdown Circuit Analysis. Scenarios 1, 2, and 3 address a loss of all Reactor Coolant Pump (RCP) seal cooling due to spurious isolation or diversion of flow. Scenarios 44, 45, 51d and SB-15 address a loss of Service water flow due to spurious isolation or diversion, or pump operation at shutoff head flow. Scenario 51c addresses a flow isolation that results in a Component Cooling (PCCW) pump operation at shutoff head. To resolve these scenarios, the control circuits of five valves were modified to add auxiliary relay contacts to prevent the above described scenarios. The contacts are used to isolate the open or close coils (depending on valve) to prevent spurious operation of the valves from fire-induced cable failures in the fire areas between the switchgear rooms and the valves themselves. The hardware changes do not affect the operation or function of the listed valves.

Evaluation Summary: A 10 CFR 50.59 evaluation was performed for this EC as the screening for the design change resulted in the “screening in” of changes regarding new components installed in the circuitry. The addition of the new components, in itself, results in decreased reliability due to the increased likelihood of a malfunction (added active components, plus passive cabling and terminal connections) whose malfunction would prevent a valve from changing from its normal position upon demand. However, the increased probability of such a malfunction is minimal, based on the quality standards, surveillance testing, and ability to detect a failure of the components and the associated system operation. The changes did not result in or increase the frequency of any accident resulting from the design change. Furthermore, the resulting design continues to meet single active failure criteria for the control of the valves for performance of design functions. The decrease of reliability of the individual valves is minimal such that the design function for swap over to cooling tower operation (SW) and isolation of containment penetration leakage (CC) as the single failure criteria will continue to be met. The evaluation determined that the new components installed in the circuitry did not require prior NRC approval

Enclosure 2 to SBK-L-13062

Summary of Changes to the Updated Final Safety Analysis Report
Incorporated Using the Guidance of NEI 98-03,
“Guidelines for Updating Final Safety Analysis Reports”

The following pages provide a summary of changes incorporated in Revision 15 of the Updated Final Safety Analysis Report using the guidance contained in NEI 98-03, "Guidelines for Updating Final Safety Analysis Reports." The summaries provide the UFSAR Change Request (UFCR) number, affected UFSAR, Sections, Tables, or Figures and a description of the change.

UFCR Number	Affected Sections, Tables, and Figures
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11-011	12.3.4.2, Table 12.5-1
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Description of Change: These changes were editorial to provide clarification and consistency within the Chapter 12 descriptions of radiation protection design features and Table 12.5-1.

11-041	4.2, 6.2, 6.5, 9.5, 12.3, 15.7, 17.1, Table 4.3-2, Table 14.2-5
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Description of Change: This UFCR deleted approximately 196 table and figure pages that served as place holders and informed readers that the information had been "deleted." The change also removed reference to previously deleted tables and figures from UFSAR text. The change was made using the guidance of NEI 98-03 that allows the removal of unnecessary information.

11-042	9.5.2.2.b.2
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Description of Change: The change removed obsolete information from 9.5.2.2.b.2, Microwave System. The change removed the obsolete statement "various site phones are directly connected to an off-premise PBX using the microwave system."

12-002	1.9, 13.5
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Description of Change: This revision added NUREG-0737 requirements to Section 13.5.1 that were inadvertently removed in 2006 when UFCR 06-007 made changes to obtain consistency between the UFSAR and the Quality Assurance Topical Report (QATR). The UFCR also corrected reference to a cancelled technical specification directing an annual report for the lifting of a PORV. The reporting is now done in accordance with 10CFR50.72 and 73.

12-005	Figure 2.1-4 and Figure 2.1-5
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Description of Change: This UFCR updated the station layout in UFSAR Figures 2.1-4 and 2.1-5 to show the location of the Firing Ranges. UFSAR Section 2.1, Control of Activities Unrelated to Plant Operation, discussed the firing range. Updating the figure to show the location of the firing range increases the level of detail in the UFSAR; however, it does not change the scope or modify any information in the UFSAR.

UFCR Number	Affected Sections, Tables, and Figures
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12-022	13.1.2.2.d
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Description of Change: This change removed unnecessary detail regarding functions assigned to the Chemistry department manager.

12-026	TR 33
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Description of Change: The UFCR deleted extraneous information regarding the time that a battery backup will power a CPU from the alarm condition description for computer points D8499 and D8500. The alarm condition description remains clear without the inclusion of the time the UPS will operate on its battery backup.

Enclosure 3 to SBK-L-13062

Listing of UFSAR Change Requests (UFCRs) Incorporated in
Updated Final Safety Analysis Report, Revision 15

<u>UFCR Number</u>	<u>Affected Sections</u>	<u>Affected Tables</u>	<u>Affected Figures</u>
07-026, Rev 1		3.10B-1	
07-026, Rev 2		3.10B-1	
08-037	6.5.1.2, 9.4.2.1		
10-022	9.5.5.5, 9.5.7.5		9.5-11, Sheet 1 and 2 9.5-13, Sheet 1 and 2
11-002		8.3-1, 8.3-2	
11-011	12.3.4.2	12.5-1	
11-012	9.2.5.2.b		
11-019	8.2		8.2-5, 8.2-10
11-021	6.8.5, 7.4.2	7.4-1	
11-022	7.4.2	7.4-1	
11-024	7.4, 10.3	7.4-1	
11-030		7.4-1, 7.5-1	
11-034			2.1-4, 2.1-5
11-035	8.2.3, 8.2.4		
11-038		9.5-3	
11-039		6.3-3, 6.3-5, 6.3-7, 9.3-7	
11-041	4.2, 6.2, 6.5, 9.5, 12.3, 15.7, 17.1	4.3-2, 14.2-5	
11-042	9.5.2.2.b.2		
11-044	9.2		
12-002	1.9, 13.5		
12-003	3.4.1.1	3.2-3	
12-004	10.4.10.1, 10.4.10.2		

<u>UFCR Number</u>	<u>Affected Sections</u>	<u>Affected Tables</u>	<u>Affected Figures</u>
12-005			2.1-4, 2.1-5
12-007	9.3.4.1.e.26, 9.4.3.2.a, 9.4.4.2.b, 10.4.5.2		
12-011	8.2.1.4.g		
12-013	2.2	2.2-1	2.2-1
12-015	8.2.1.4.g		
12-017	8.2.1.4.g		
12-020	4.4.6.4		
12-022	13.1.2.2.d		
12-023	9.1.2		9.1-22
12-024	4.2.2.2.d		
12-025	9.2.1.3		
12-027	6.3.3		
12-029	1.8, 6.2		
12-033	9.5.1.2.1		
13-003	9.4.12.2.b.7		
13-006	1.8		
13-011	3.8.1.6, 3.8.4.6, 3.8.6		

Enclosure 4 to SBK-L-13062

Listing of UFSAR Change Requests (UFCRs) Incorporated in
Appendix R, Fire Protection Safe Shutdown Capability, Revision 12

<u>UFCR Number</u>	<u>Affected Sections</u>	<u>Affected Tables/ Tabulations</u>	<u>Affected Figures</u>
10-022		MCR 3.1.3.18 RSS 3.1.3.18	
11-021	3.2.7	MCR 3.1.3.1 RSS 3.1.3.1 RSS 3.2.3 Tabulation 3.2.7.9 Tabulation 3.2.7.10 Tabulation 3.2.7.39 Tabulation 3.2.7.40	
11-022		MCR 3.1.3.2 RSS 3.1.3.2 RSS 3.3.2 Tabulation 3.2.7.2 Tabulation 3.2.7.3 Tabulation 3.2.7.9 Tabulation 3.2.7.10 Tabulation 3.2.7.50 Tabulation 3.2.7.52	
11-024	3.0	MCR 3.1.3 RSS 3.1.3	
11-036		MCR 3.1.3.2	
11-039	3.2.7	MCR 3.1.3.1 RSS 3.1.3.2 Tabulations 3.2.7.2 Tabulations 3.2.7.3 Tabulations 3.2.7.71 Tabulations 3.2.7.72 Tabulations 3.2.7.90	
12-010		MCR 3.1.3.7 MCR 3.1.3.8 RSS 3.1.3.7	

Enclosure 5 to SBK-L-13062

Listing of UFSAR Change Requests (UFCRs) Incorporated in
Appendix A, Evaluation and Comparison to BTP APCSB 9.5-1, Revision 13

<u>UFCR Number</u>	<u>Affected Sections</u>	<u>Affected Tables</u>	<u>Affected Figures</u>
11-027	F.3		
11-033	F.2, Tab 5		
11-034			1.2-1
11-038	F.3		
11-043	F.2, Tab 11		
12-009	F.2, Tab 3		
12-016		Section B, Table 1	
12-032	F.2, Tab 5		
12-033	B.2-(e)		

Enclosure 6 to SBK-L-13062

Listing of UFSAR Change Requests (UFCRs) Incorporated in
Revisions 130 through 135 of the Technical Requirements Manual

<u>UFCR Number</u>	<u>Affected Sections</u>	<u>Affected Tables</u>	<u>Affected Figures</u>
07-027	TR 3-3.3.3.8		
11-031	TR 12		
12-016	TR 9, Section 3.7.9.3		
12-024	Chapter 6, Sections 1.0, 2.5.1, 2.10.4, 2.15.1	Table 1, pages 6-1.14 and 6.1-15	
12-026	TR 33		
12-028	TR 14		
12-031	TR 9, Section 3.7.9.3		
13-002	TR 7, Section 3.7.9.1		
13-005	TR 2		