NEXTera ENERGY SEABROOK

June 19, 2012

SBK-L-12123
Docket No. 50-443

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Seabrook Station
NextEra Energy Seabrook License Renewal Application
Supplement # 25

References:

1. NextEra Energy Seabrook, LLC letter SBK-L-10077, "Seabrook Station Application for Renewed Operating License," May 25, 2010. (Accession Number ML101590099)
2. NRC Letter, Requests For Additional Information For The Review Of The Seabrook Station, License Renewal Application-Set 17 dated May 29, 2012 (Accession Number ML12144A441)
3. LR-ISG-2011-02 : Final License Renewal Interim Staff Guidance: Aging Management Program For Steam Generators (Accession Number ML11297A085)
4. NextEra Energy Seabrook, LLC letter SBK-L-11002, "Response to Request for Additional Information NextEra Energy Seabrook License Renewal Application Aging Management Programs – Set 4 ," January 13, 2012. (Accession Number ML110140809)

In Reference 1, NextEra Energy Seabrook, LLC (NextEra) submitted an application for a renewed facility operating license for Seabrook Station Unit 1 in accordance with the Code of Federal Regulations, Title 10, Parts 50, 51, and 54.

In Reference 2, the NRC requested additional information related to the recently approved LR-ISG-2011-01 "Aging Management of Stainless Steel Structures and Components in Treated Borated Water" and a recently installed Seal Cap Enclosures. Enclosure 1 provides NextEra's response to these RAIs.

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Reference 3, Final License Renewal Interim Staff Guidance LR-ISG-2011-02, Aging Management Program For Steam Generators was recently issued by the NRC. Enclosure 2 contains changes related to NextEra's License Renewal Application based on the recently issued guidance.

In Reference 4, NextEra provided a response to Request for Additional Information (RAI) B.2.1.10-1 related to Steam Generator Tube Integrity and to RAI B.2.1.26-1 Associated with Flash Point Testing. Discussion with the NRC staff identified the need to clarify NextEra Seabrook's response to these RAIs. Enclosure 3 provides NextEra's revised response to RAIs B.2.1.10-1 and B.2.1.26-1.

In this Supplement are changes to the License Renewal Application (LRA). To facilitate understanding, the changes are explained, and where appropriate, portions of the LRA are repeated with the change highlighted by strikethroughs for deleted text and bolded italics for inserted text. In some instances the entire text of a section has been replaced or added. In these cases a note is included in the introduction indicating the replacement of the entire text of the section.

Commitment numbers 54 and 55 have been revised. There are no other new or revised regulatory commitments contained in this letter. Enclosure 4 provides a revised LRA Appendix A - Final Safety Report Supplement Table A.3, License Renewal Commitment List, updated to reflect the license renewal commitment changes made in NextEra Energy Seabrook correspondence to date.

If there are any questions or additional information is needed, please contact Mr. Richard R. Cliche, License Renewal Project Manager, at (603) 773-7003.

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

Sincerely,
NextEra Energy Seabrook, LLC.

Kevin T. Walsh
Site Vice President

Enclosures:

Enclosure 1- NextEra Reponses to NRC Requests for Additional Information dated May 29, 2012

Enclosure 2- Changes to the Seabrook Station License Renewal Application Associated with LR-ISG-2011-02, "Aging Management Program for Steam Generators

Enclosure 3- Clarification to Responses to RAI B.2.1.10-1 Associated with Steam Generator Tube-to Tubesheet Weld Inspection Plan, RAI B.2.1.26-1 Associated with Flash Point Testing, and to Steam Generator Divider Plate Inspection Plan

Enclosure 4- LRA Appendix A - Final Safety Report Supplement Table A.3, License Renewal Commitment List

cc:

W.M. Dean,	NRC Region I Administrator
J. G. Lamb,	NRC Project Manager, Project Directorate I-2
W. J. Raymond,	NRC Resident Inspector
A.D. Cunanan,	NRC Project Manager, License Renewal
M. Wentzel,	NRC Project Manager, License Renewal

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NEXTera ENERGY SEABROOK

I, Kevin Walsh, Site Vice President of NextEra Energy Seabrook, LLC hereby affirm that the information and statements contained within are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

Sworn and Subscribed
Before me this
19th day of June, 2012

Kevin T. Walsh
Site Vice President

Notary Public

SHIRLEY SWEENEY
MY COMMISSION EXPIRES NOV. 18, 2014
NOTARY PUBLIC
NEW HAMPSHIRE

Enclosure 1 to SBK-L-12123

NextEra Reponses to NRC Requests for Additional Information
dated May 29, 2012

RAI 3.2.1.48-1

Background:

On May 3, 2012, the staff issued License Renewal Interim Staff Guidance (LR-ISG), LR-ISG-2011-01, "Aging Management of Stainless Steel Structures and Components in Treated Borated Water," (ADAMS Accession No. ML12034A047) revising the SRP-LR and GALL Report to include the following additional aging management activities:

- Add the One-Time Inspection program to verify the effectiveness of the Water Chemistry program to manage loss of material due to pitting and crevice corrosion and cracking due to stress corrosion cracking in treated borated water.
- Add reduction of heat transfer due to fouling as an aging effect for stainless steel heat exchanger tubes exposed to treated borated water, and manage this aging effect with the Water Chemistry and One-Time Inspection programs.

This revised guidance applies to stainless steel structures and components exposed to treated borated water environments that are not actively controlled to oxygen levels less than 5 ppb.

In the license renewal application (LRA), the applicant stated that stainless steel and steel with stainless steel cladding components exposed to treated borated water will be managed for loss of material due to pitting and crevice corrosion and cracking due to stress corrosion cracking with the Water Chemistry program for those items associated with LRA Table 3.2.1, item 3.2.1-48; Table 3.2.1, item 3.2.1-49; Table 3.3.1, item 3.3.1-90; and Table 3.3.1, item 3.3.1-91.

In its response to RAI 3.2.2.2.4.2-1A, dated June 2,2011, the applicant stated that stainless steel heat exchanger tubes exposed to treated borated water will be managed for reduction of heat transfer with the Water Chemistry program. The associated aging management review (AMR) items added in the request for additional information (RAI) response cite generic note H.

Issue:

The LRA contains several AMR items that manage stainless steel components exposed to treated borated water for loss of material, cracking, and reduction of heat transfer with the Water Chemistry program. However, the staff noted that the associated treated borated water environments may not be controlled to less than 5 ppb dissolved oxygen, and thus, the aging effects may not be effectively managed.

Request:

Describe how the effectiveness of the Water Chemistry program will be verified for those AMR items where the Water Chemistry program is used to manage loss of material, cracking, and reduction of heat transfer for stainless steel components exposed to treated borated water with greater than 5 ppb oxygen.

NextEra Energy Seabrook Response:

On May 3, 2012, the NRC issued LR-ISG-2011-01, "Aging Management of Stainless Steel Structures and Components in Treated Borated Water". This ISG provides guidance for managing the aging effects during the period of extended operation for stainless steel structures and components exposed to treated borated water within the scope of the License Renewal Rule.

In response to LR-ISG-2011-01, NextEra Seabrook has made the following changes to the License Renewal Application:

1. The One-Time Inspection program was added to verify the effectiveness of the Water Chemistry program to manage loss of material due to pitting and crevice corrosion and cracking due to stress corrosion cracking of stainless steel components in treated borated water environment.
2. Reduction of heat transfer due to fouling was added as an aging effect for stainless steel heat exchanger tubes exposed to treated borated water. The Water Chemistry and One-Time Inspection programs were assigned to manage this aging effect.

The following are detailed changes to the License Renewal Application as a result of LR-ISG-2011-01, "Aging Management of Stainless Steel Structures and Components in Treated Borated Water".

1. In Table 3.1.2-1, on page 3.1-44, the 5th row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

2. In Table 3.1.2-1, on page 3.1-44, the 6th row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.A-28 (E-12)	3.2.1-48	A ***A***

3. In Table 3.1.2-1, on page 3.1-45, the 4th row is revised as follows:

Heat Exchanger Components (RC-E-126 Channel Head)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

4. In Table 3.1.2-1, on page 3.1-45, the 8th row is revised as follows:

Heat Exchanger Components (Reactor Coolant Pump Thermal Barrier Heat Exchanger Cooling Coil)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

5. In Table 3.1.2-1, on page 3.1-45, a new row is added after the 8th row as follows:

Heat Exchanger Components (Reactor Coolant Pump Thermal Barrier Heat Exchanger Cooling Coil)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (External)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

6. In Table 3.1.2-1, on page 3.1-48, the 6th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

7. In Table 3.1.2-1, on page 3.1-49, the 1st row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.A-28 (E-12)	3.2.1-48	A ***A***

8. In Table 3.1.2-1, on page 3.1-58, the 1st row is revised as follows:

Pump Casing	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

9. In Table 3.1.2-1, on page 3.1-61, the 5th row is revised as follows:

Rupture Disk	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

10. In Table 3.1.2-1, on page 3.1-61, the 8th row is revised as follows:

Tank	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

11. In Table 3.1.2-1, on page 3.1-62, the 5th row is revised as follows:

Thermowell	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

12. In Table 3.1.2-1, on page 3.1-64, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

13. In Table 3.1.2-1, on page 3.1-64, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.A-28 (E-12)	3.2.1-48	A ***A***

14. In Table 3.1.2-1, on page 3.1-65, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

15. In Table 3.1.2-1, on page 3.1-65, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.A-28 (E-12)	3.2.1-48	A ***A***

16. In Table 3.2.1, on page 3.2-29, line item 3.2.1-48 is revised as follows (note that this table was previously revised in SBK-L-11015, Letter dated February 3, 2011 as item 1, on page 19 of Enclosure 1):

3.2.1-48	Stainless steel or stainless-steel-clad steel piping, piping components, piping elements, and tanks (including safety injection tanks/accumulators) exposed to treated borated water >60°C (>140°F)	Cracking due to stress corrosion cracking	Water Chemistry	No	Components in the Reactor Coolant system have been aligned to this line item based on material, environment, and aging effect. Consistent with NUREG-1801. The Water Chemistry Program, B.2.1.2, will be used to manage cracking due to stress corrosion cracking in stainless steel piping components exposed to treated borated water >140°F in the Reactor Coolant and Residual Heat Removal systems~~, and stainless steel heat exchanger components exposed to treated borated water >140°F in the Residual Heat Removal system~~. ***The One-Time Inspection Program, B.2.1.20, will be used to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage cracking of stainless steel piping components exposed to treated borated water >140°F in the in the Reactor Coolant and Residual Heat Removal systems***

17. In Table 3.2.1, on page 3.2-29, line item 3.2.1-49 is revised as follows:

3.2.1-49	Stainless steel piping, piping components, piping elements, and tanks exposed to treated borated water	Loss of material due to pitting and crevice corrosion	Water Chemistry	No	Components in the Reactor Coolant system have been aligned to this line item based on material, environment, and aging effect. Consistent with NUREG-1801. The Water Chemistry Program, B.2.1.2, will be used to manage loss of material due to pitting and crevice corrosion in stainless steel piping components exposed to treated borated water in the Containment Building Spray, Reactor Coolant, Residual Heat Removal, and Safety Injection systems, and stainless steel heat exchanger components exposed to treated borated water in the Containment Building Spray, Reactor Coolant, and Residual Heat Removal

					systems, and stainless steel tanks exposed to treated borated water in the Containment Building Spray, Reactor Coolant, and Safety Injection systems. ***The One-Time Inspection Program, B.2.1.20, will be used to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage loss of material of stainless steel piping components in the Containment Building Spray, Reactor Coolant, Residual Heat Removal, and Safety Injection systems, and stainless steel heat exchanger components exposed to treated borated water in the Containment Building Spray, Reactor Coolant, and Residual Heat Removal systems, and stainless steel tanks exposed to treated borated water in the Containment Building Spray, Reactor Coolant, and Safety Injection systems.***

18. In Section 3.2.2.2.4.2, on page 3.2-12, further evaluation discussion is revised as follows:

~~Item Number 3.2.1-10 is not applicable to Seabrook Station. The Engineering Safety Features do not contain stainless steel heat exchanger tubes exposed to treated water.~~
Seabrook Station will implement the One-Time Inspection Program, B.2.1.20, to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage reduction of heat transfer due to fouling in stainless steel heat exchanger tubes exposed to treated borated water in the Containment Building Spray, and, Residual Heat Removal systems.

19. In Table 3.2.1, on page 3.2-18, line item 3.2.1-10 is revised as follows:

3.2.1-10	Stainless steel heat exchanger tubes exposed to treated water	Reduction of heat transfer due to fouling	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	~~Not applicable. The Engineering Safety Features systems do not contain stainless steel heat exchanger tubes exposed to treated water.~~ ***The One-Time Inspection Program, B.2.1.20 will be used to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage reduction of heat transfer due to fouling in stainless steel heat exchanger tubes exposed to treated borated water in the Containment Building Spray and Residual Heat Removal systems.*** See Subsection 3.2.2.2.4.2.

20. In Table 3.2.2-2, on page 3.2-44, the 7th row is revised as follows:

Expansion Joint	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

21. In Table 3.2.2-2, on page 3.2-45, the 1st row is revised as follows:

Filter Housing	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

22. In Table 3.2.2-2, on page 3.2-45, the 4th row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

23. In Table 3.2.2-2, on page 3.2-46, the 2nd row is revised as follows:

Heat Exchanger Components (1-CBS-E-16A and 16B Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

24. In Table 3.2.2-2, on page 3.2-47, the 4th row is revised as follows:

Heat Exchanger Components (1-CBS-E-16A and 16B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

25. In Table 3.2.2-2, on page 3.2-47, a new row is added after the 4th row as follows:

Heat Exchanger Components (1-CBS-E-16A and 16B Tubes)	***Heat Transfer*** ***Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program*** ***One-Time Inspection Program***	***V.A-16 (EP-34)***	***3.2.1-10***	***A*** ***A***

26. In Table 3.2.2-2, on page 3.2-47, the 6th row is revised as follows:

Heat Exchanger Components (1-CBS-E-16A and 16B Tube Sheet)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

27. In Table 3.2.2-2, on page 3.2-48, the 4th row is revised as follows:

Heat Exchanger Components (1-CBS-P-9A and 9B Pump Cooler Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	C ***C***

28. In Table 3.2.2-2, on page 3.2-48, a new row is added after the 4th row as follows:

Heat Exchanger Components (1-CBS-P-9A and 9B Pump Cooler Tubes)	***Heat Transfer*** ***Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program*** ***One-Time Inspection Program***	***V.A-16 (EP-34)***	***3.2.1-10***	***A*** ***A***

29. In Table 3.2.2-2, on page 3.2-49, the 2nd row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

30. In Table 3.2.2-2, on page 3.2-50, the 6th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

31. In Table 3.2.2-2, on page 3.2-52, the 3rd row is revised as follows:

Pump Casing	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

32. In Table 3.2.2-2, on page 3.2-53, the 4th row is revised as follows:

Tank	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

33. In Table 3.2.2-2, on page 3.2-54, the 4th row is revised as follows:

Thermowell	Pressure Boundary	Stainless Steel	Treated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

34. In Table 3.2.2-2, on page 3.2-54, the 8th row is revised as follows:

Valve Body	Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

35. In Table 3.2.2-2, on page 3.2-55, the 6th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.A-27 (EP-41)	3.2.1-49	A ***A***

36. In Table 3.2.2-3, on page 3.2-60, the 1st row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

37. In Table 3.2.2-3, on page 3.2-60, the 2nd row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

38. In Table 3.2.2-3, on page 3.2-60, the 5th row is revised as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	C ***C***

39. In Table 3.2.2-3, on page 3.2-60, the 6th row is revised as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	C ***C***

40. In Table 3.2.2-3, on page 3.2-61, the 4th row is revised as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	C ***C***

41. In Table 3.2.2-3, on page 3.2-61, the 5th row is revised as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	C ***C***

42. In Table 3.2.2-3, on page 3.2-61, a new row is added after the 5th row as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***V.A-16 (EP-34)***	***3.2.1-10***	***A A***

43. In Table 3.2.2-3, on page 3.2-61, the 8th row is revised as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Tube Sheet)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	C ***C***

44. In Table 3.2.2-3, on page 3.2-62, the 1st row is revised as follows:

Heat Exchanger Components (1-RH-E-9A and 9B Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	C ***C***

45. In Table 3.2.2-3, on page 3.2-62, the 8th row is revised as follows:

Heat Exchanger Components (1-RH-E-188A and 188B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	C ***C***

46. In Table 3.2.2-3, on page 3.2-63, the 1st row is revised as follows:

Heat Exchanger Components (1-RH-E-188A and 188B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	C ***C***

47. In Table 3.2.2-3, on page 3.2-63, the 4th row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

48. In Table 3.2.2-3, on page 3.2-63, the 5th row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

49. In Table 3.2.2-3, on page 3.2-64, the 4th row is revised as follows:

Orifice	Pressure Boundary Throttle	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

50. In Table 3.2.2-3, on page 3.2-64, the 5th row is revised as follows:

Orifice	Pressure Boundary Throttle	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

51. In Table 3.2.2-3, on page 3.2-65, the 1st row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

52. In Table 3.2.2-3, on page 3.2-65, the 2nd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

53. In Table 3.2.2-3, on page 3.2-68, the 1st row is revised as follows:

Pump Casing	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

54. In Table 3.2.2-3, on page 3.2-68, the 2nd row is revised as follows:

Pump Casing	Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

55. In Table 3.2.2-3, on page 3.2-68, the 5th row is revised as follows:

Thermowell	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

56. In Table 3.2.2-3, on page 3.2-68, the 6th row is revised as follows:

Thermowell	Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

57. In Table 3.2.2-3, on page 3.2-68, the 9th row is revised as follows:

Valve Body	Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

58. In Table 3.2.2-3, on page 3.2-69, the 1st row is revised as follows:

Valve Body	Pressure Boundary	CASS	Treated Borated Water >140° F (Internal)	Valve Body	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

59. In Table 3.2.2-3, on page 3.2-69, the 5th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

60. In Table 3.2.2-3, on page 3.2-69, the 6th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140° F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	V.D1-31 (E-12)	3.2.1-48	A ***A***

61. In Table 3.2.2-4, on page 3.2-76, the 1st row is revised as follows:

Orifice	Leakage Boundary (Spatial) Pressure Boundary Throttle	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

62. In Table 3.2.2-4, on page 3.2-77, the 3rd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

63. In Table 3.2.2-4, on page 3.2-80, the 4th row is revised as follows:

Pump Casing	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

64. In Table 3.2.2-4, on page 3.2-81, the 2nd row is revised as follows:

Tank	Pressure Boundary	Steel With Stainless Steel Cladding	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

65. In Table 3.2.2-4, on page 3.2-81, the 6th row is revised as follows:

Thermowell	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

66. In Table 3.2.2-4, on page 3.2-82, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

67. In Table 3.2.2-4, on page 3.2-82, the 6th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	V.D1-30 (EP-41)	3.2.1-49	A ***A***

68. In Section 3.3.2.2.2, on page 3.3-67, the 2nd paragraph of the Reduction of Heat Transfer Due to Fouling discussion is revised as follows:

~~Item Number 3.3.1-3 is not applicable for Auxiliary Systems components at Seabrook Station. This line item is associated with NUREG-1801 line item VII.E3-6, which is applicable to BWR Reactor Water Cleanup System heat exchangers.~~

Seabrook Station will implement the One-Time Inspection Program, B.2.1.20, to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage reduction of heat transfer due to fouling in stainless steel heat exchanger tubes exposed to treated borated water in the Chemical and Volume Control, Spent and Fuel Pool Cooling systems and Reactor Coolant systems. The One-Time Inspection and Water Chemistry programs are described in Appendix B.

69. In Table 3.3.1, on page 3.3-86, line item 3.3.1-3 is revised as follows:

3.3.1-3	Stainless steel heat exchanger tubes exposed to treated water	Reduction of heat transfer due to fouling	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	~~Not applicable for Auxiliary Systems components at Seabrook Station. This line item is associated with NUREG-1801 line item VII.E3-6, which is applicable to BWR Reactor Water Cleanup System heat exchangers.~~ ***The One-Time Inspection Program, B.2.1.20 will be used to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage reduction of heat transfer due to fouling in stainless steel heat exchanger tubes exposed to treated borated water in the Containment Building Spray, Chemical and Volume Control, Residual Heat Removal, Spent Fuel Pool Cooling, and Reactor Coolant systems.*** See subsection 3.3.2.2.2.

70. In Table 3.3.1, on page 3.3-121, line item 3.3.1-90 is revised as follows:

3.3.1-90	Stainless steel and steel with stainless steel cladding piping, piping components, piping elements, tanks, and fuel storage racks exposed to treated borated water >60°C (>140°F)	Cracking due to stress corrosion cracking	Water Chemistry	No	Consistent with NUREG-1801. The Water Chemistry Program, B.2.1.2, will be used to manage cracking due to stress corrosion cracking of the stainless steel piping components exposed to treated borated water >60°C (>140°F) in the Chemical and Volume Control, Sample, and Valve Stem Leak-Off systems and stainless steel tanks in the Chemical and Volume Control system. In addition The Water Chemistry Program, B.2.1.2, will be used to manage cracking due to stress corrosion cracking of the stainless steel fuel storage rack support exposed to treated borated water >60°C (>140°F) in Section 3.5, table 3.5.2.6, Supports. ***The One-Time Inspection Program, B.2.1.20, will be used to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage cracking of stainless steel piping and heat exchanger components exposed to treated borated water >60°C (>140°F) in the Chemical and Volume Control, Sample, and Valve Stem Leak-Off systems and stainless steel tanks in the Chemical and Volume Control system***

71. In Table 3.3.1, on page 3.3-121, line item 3.3.1-91 is revised as follows (note that this line item was previously revised in SBK-L-11069 dated April 22, 2011, item b of Enclosure 2, on page 11):

3.3.1-91	Stainless steel and steel with stainless steel cladding piping, piping components, and piping elements exposed to treated borated water	Loss of material due to pitting and crevice corrosion	Water Chemistry	No	Components in the Auxiliary Steam, Chemical and Volume Control System, Sample, Spent Fuel Pool Cooling, and Waste Processing Liquid Drains systems have been aligned to this line item based on material, environment, and aging effect. Consistent with NUREG-1801. The Water Chemistry Program, B.2.1.2, will be used to manage loss of material due to pitting and crevice corrosion of the following stainless steel components exposed to treated borated water: *a)* Stainless steel piping components exposed to treated borated water in the

					Auxiliary Steam, Boron Recovery, Chemical and Volume Control, Nitrogen Gas, Reactor Make-Up Water, Release Recovery, Resin Sluicing, Sample, Spent Fuel Pool Cooling, Valve Stem Leak-Off, ***Vent Gas,*** Waste Gas, and Waste Processing Liquid Drains systems, *b)* Stainless steel heat exchanger components exposed to treated borated water in the Chemical and Volume Control, Spent Fuel Pool Cooling, and Waste Processing Liquid Drains system, *c)* Stainless steel tanks exposed to treated borated water in the Chemical and Volume Control, Sample, Spent Fuel Pool Cooling, and Waste Processing Liquid Drains. ***The One-Time Inspection Program, B.2.1.20, will be used to verify the effectiveness of the Water Chemistry Program, B.2.1.2, to manage loss of material due to pitting and crevice corrosion of the following stainless steel components exposed to treated borated water:*** ***a) Stainless steel piping components exposed to treated borated water in the Auxiliary Steam, Boron Recovery, Chemical and Volume Control, Nitrogen Gas, Reactor Make-Up Water, Release Recovery, Resin Sluicing, Sample, Spent Fuel Pool Cooling, Valve Stem Leak-Off, Vent Gas, Waste Gas, and Waste Processing Liquid Drains systems,*** ***b) Stainless steel heat exchanger components exposed to treated borated water in the Chemical and Volume Control, Spent Fuel Pool Cooling, and Waste Processing Liquid Drains system,*** ***c) Stainless steel tanks exposed to treated borated water in the Chemical and Volume Control, Sample, Spent Fuel Pool Cooling, and Waste Processing Liquid Drains systems.***

72. In Table 3.3.2-2, on page 3.3-136, the 4th row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

73. In Table 3.3.2-2, on page 3.3-137, the 2nd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

74. In Table 3.3.2-2, on page 3.3-138, the 4th row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

75. In Table 3.3.2-2, on page 3.3-138, the 8th row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

76. In Table 3.3.2-3, on page 3.3-141, the 1st row is revised as follows:

Filter Housing	Pressure Boundary	Stainless Steel	Treated Borated Water >140°F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

77. In Table 3.3.2-3, on page 3.3-141, the 3rd row is revised as follows:

Filter Housing	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

78. In Table 3.3.2-3, on page 3.3-143, the 4th row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

79. In Table 3.3.2-3, on page 3.3-146, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-3 Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

80. In Table 3.3.2-3, on page 3.3-147, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-3 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

81. In Table 3.3.2-3, on page 3.3-147, a new row is added after the 6th row as follows:

Heat Exchanger Components (CS-E-3 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

82. In Table 3.3.2-3, on page 3.3-148, the 2nd row is revised as follows:

Heat Exchanger Components (CS-E-3 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

83. In Table 3.3.2-3, on page 3.3-148, the 7th row is revised as follows:

Heat Exchanger Components (CS-E-4 Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

84. In Table 3.3.2-3, on page 3.3-149, the 7th row is revised as follows:

Heat Exchanger Components (CS-E-4 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

85. In Table 3.3.2-3, on page 3.3-149, a new row is added after the 7th row as follows:

Heat Exchanger Components (CS-E-4 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Loss of Material***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

86. In Table 3.3.2-3, on page 3.3-150, the 3rd row is revised as follows:

Heat Exchanger Components (CS-E-4 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

87. In Table 3.3.2-3, on page 3.3-150, the 8th row is revised as follows:

Heat Exchanger Components (CS-E-5A and 5B Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

88. In Table 3.3.2-3, on page 3.3-151, the 8th row is revised as follows:

Heat Exchanger Components (CS-E-5A and 5B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

89. In Table 3.3.2-3, on page 3.3-151, a new row is added after the 8th row as follows:

Heat Exchanger Components (CS-E-5A and 5B Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

90. In Table 3.3.2-3, on page 3.3-152, the 4th row is revised as follows:

Heat Exchanger Components (CS-E-5A and 5B Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

91. In Table 3.3.2-3, on page 3.3-153, the 1st row is revised as follows:

Heat Exchanger Components (CS-E-6 Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

92. In Table 3.3.2-3, on page 3.3-153, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-6 Shell)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

93. In Table 3.3.2-3, on page 3.3-154, the 1st row is revised as follows:

Heat Exchanger Components (CS-E-6 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

94. In Table 3.3.2-3, on page 3.3-154, a new row is added after the 1st row as follows:

Heat Exchanger Components (CS-E-6 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (External)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

95. In Table 3.3.2-3, on page 3.3-154, the 4th row is revised as follows:

Heat Exchanger Components (CS-E-6 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

96. In Table 3.3.2-3, on page 3.3-154, a new row is added after the 4th row as follows:

Heat Exchanger Components (CS-E-6 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

97. In Table 3.3.2-3, on page 3.3-154, the 7th row is revised as follows:

Heat Exchanger Components (CS-E-6 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

98. In Table 3.3.2-3, on page 3.3-155, the 2nd row is revised as follows:

Heat Exchanger Components (CS-E-6 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

99. In Table 3.3.2-3, on page 3.3-155, the 7th row is revised as follows:

Heat Exchanger Components (CS-E-6 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

100. In Table 3.3.2-3, on page 3.3-156, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-7 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

101. In Table 3.3.2-3, on page 3.3-156, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-7 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

102. In Table 3.3.2-3, on page 3.3-157, the 1st row is revised as follows:

Heat Exchanger Components (CS-E-7 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

103. In Table 3.3.2-3, on page 3.3-157, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-8 Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

104. In Table 3.3.2-3, on page 3.3-158, the 3rd row is revised as follows:

Heat Exchanger Components (CS-E-8 Shell)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

105. In Table 3.3.2-3, on page 3.3-158, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-8 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

106. In Table 3.3.2-3, on page 3.3-158, a new row is added after the 6th row as follows:

Heat Exchanger Components (CS-E-8 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (External)***	***Loss of Material***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

107. In Table 3.3.2-3, on page 3.3-159, the 1st row is revised as follows:

Heat Exchanger Components (CS-E-8 Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

108. In Table 3.3.2-3, on page 3.3-159, a new row is added after the 1st row as follows:

Heat Exchanger Components (CS-E-8 Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

109. In Table 3.3.2-3, on page 3.3-159, the 4th row is revised as follows:

Heat Exchanger Components (CS-E-8 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

110. In Table 3.3.2-3, on page 3.3-159, the 7th row is revised as follows:

Heat Exchanger Components (CS-E-8 Tube Sheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

111. In Table 3.3.2-3, on page 3.3-160, the 4th row is revised as follows:

Heat Exchanger Components (CS-E-63 Channel Head)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

112. In Table 3.3.2-3, on page 3.3-161, the 4th row is revised as follows:

Heat Exchanger Components (CS-E-64 Channel Head)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

113. In Table 3.3.2-3, on page 3.3-162, the 1st row is revised as follows:

Heat Exchanger Components (CS-E-64 Shell)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

114. In Table 3.3.2-3, on page 3.3-162, the 6th row is revised as follows:

Heat Exchanger Components (CS-E-65 Channel Head)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

115. In Table 3.3.2-3, on page 3.3-164, the 4th row is revised as follows:

Heat Exchanger Components (CS-E-139 Shell)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

116. In Table 3.3.2-3, on page 3.3-170, the 6th row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

117. In Table 3.3.2-3, on page 3.3-172, the 1st row is revised as follows:

Orifice	Leakage Boundary (Spatial) Pressure Boundary Throttle	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

118. In Table 3.3.2-3, on page 3.3-174, the 1st row is revised as follows:

Piping And Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

119. In Table 3.3.2-3, on page 3.3-174, the 2nd row is revised as follows:

Piping And Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140°F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

120. In Table 3.3.2-3, on page 3.3-177, the 1st row is revised as follows:

Pump Casing	Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

121. In Table 3.3.2-3, on page 3.3-178, the 2nd row is revised as follows:

Pump Casing	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

122. In Table 3.3.2-3, on page 3.3-178, the 3rd row is revised as follows:

Pump Casing	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

123. In Table 3.3.2-3, on page 3.3-179, the 4th row is revised as follows:

Pump Casing (High Head Centrifugal Charging Pump)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

124. In Table 3.3.2-3, on page 3.3-180, the 1st row is revised as follows:

Tank	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

125. In Table 3.3.2-3, on page 3.3-180, the 2nd row is revised as follows:

Tank	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

126. In Table 3.3.2-3, on page 3.3-181, the 5th row is revised as follows:

Thermowell	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

127. In Table 3.3.2-3, on page 3.3-181, the 6th row is revised as follows:

Thermowell	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140°F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

128. In Table 3.3.2-3, on page 3.3-182, the 5th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

129. In Table 3.3.2-3, on page 3.3-182, the 6th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

130. In Table 3.3.2-3, on page 3.3-184, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

131. In Table 3.3.2-3, on page 3.3-184, the 3rd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

132. In Table 3.3.2-24, on page 3.3-380, the 7th row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

133. In Table 3.3.2-24, on page 3.3-381, the 4th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

134. In Table 3.3.2-24, on page 3.3-384, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary Structural Integrity (Attached)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

135. In Table 3.3.2-31, on page 3.3-429, the 5th row is revised as follows:

Orifice	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

136. In Table 3.3.2-31, on page 3.3-430, the 2nd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

137. In Table 3.3.2-31, on page 3.3-432, the 3rd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

138. In Table 3.3.2-31, on page 3.3-433, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

139. In Table 3.3.2-32, on page 3.3-435, the 7th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

140. In Table 3.3.2-32, on page 3.3-437, the 4th row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

141. In Table 3.3.2-33, on page 3.3-439, the 4th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

142. In Table 3.3.2-33, on page 3.3-440, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

143. In Table 3.3.2-35, on page 3.3-446, the 2nd row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

144. In Table 3.3.2-35, on page 3.3-446, the 3rd row is revised as follows:

Flexible Hose	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

145. In Table 3.3.2-35, on page 3.3-449, the 6th row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

146. In Table 3.3.2-35, on page 3.3-450, the 2nd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

147. In Table 3.3.2-35, on page 3.3-450, the 3rd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

148. In Table 3.3.2-35, on page 3.3-451, the 9th row is revised as follows:

Tank	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	C ***C***

149. In Table 3.3.2-35, on page 3.3-452, the 4th row is revised as follows:

Thermowell	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

150. In Table 3.3.2-35, on page 3.3-453, the 4th row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

151. In Table 3.3.2-35, on page 3.3-454, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A ***A***

152. In Table 3.3.2-35, on page 3.3-454, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

153. In Table 3.3.2-39, on page 3.3-482, the 9th row is revised as follows:

Filter Housing	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

154. In Table 3.3.2-39, on page 3.3-483, the 6th row is revised as follows:

Heat Exchanger Components (SF-E-15A & B Channel Head)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	C ***C***

155. In Table 3.3.2-39, on page 3.3-484, the 1st row is revised as follows:

Heat Exchanger Components (SF-E-15A & B Channel Head Cover)	Pressure Boundary	Steel With Stainless Steel Cladding	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	C ***C***

156. In Table 3.3.2-39, on page 3.3-484, the 7th row is revised as follows:

Heat Exchanger Components (SF-E-15A & B Tubes)	Heat Transfer Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	C ***C***

157. In Table 3.3.2-39, on page 3.3-484, the 7th row is revised as follows:

Heat Exchanger Components (SF-E-15A & B Tubes)	***Heat Transfer Pressure Boundary***	***Stainless Steel***	***Treated Borated Water (Internal)***	***Reduction of Heat Transfer***	***Water Chemistry Program One-Time Inspection Program***	***VII.A4-4 (AP-62)***	***3.3.1-3***	***A A***

158. In Table 3.3.2-39, on page 3.3-485, the 1st row is revised as follows:

Heat Exchanger Components (SF-E-15A & B Tubesheet)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	C ***C***

159. In Table 3.3.2-39, on page 3.3-485, the 4th row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

160. In Table 3.3.2-39, on page 3.3-486, the 1st row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

161. In Table 3.3.2-39, on page 3.3-487, the 4th row is revised as follows:

Pump Casing	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

162. In Table 3.3.2-39, on page 3.3-487, the 7th row is revised as follows:

Tank	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	C ***C***

163. In Table 3.3.2-39, on page 3.3-488, the 3rd row is revised as follows:

Thermowell	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

164. In Table 3.3.2-39, on page 3.3-489, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

165. In Table 3.3.2-39, on page 3.3-489, the 5th row is revised as follows:

Valve Body	Leakage Boundary (Spatial) Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A ***A***

166. In Table 3.3.2-41, on page 3.3-497, the 3rd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.A3-8 (AP-79)	3.3.1-91	A *A*

167. In Table 3.3.2-41, on page 3.3-497, the 4th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water >140 °F (Internal)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-20 (AP-82)	3.3.1-90	A *A*

168. In Table 3.3.2-42, on page 12 of Enclosure 2 of SBK-L-11069, dated 4-22-2011, item "e" is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A A

169. In Table 3.3.2-42, on page 12 of Enclosure 2 of SBK-L-11069, dated 4-22-2011, item "f" is revised as follows:

Valve Body	Leakage Boundary (Spatial)	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A *A*

170. In Table 3.3.2-43, on page 3.3-503, the 7th row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A *A*

171. In Table 3.3.2-43, on page 3.3-505, the 1st row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

172. In Table 3.3.2-45, on page 3.3-515, the 5th row is revised as follows:

Heat Exchanger Components (WLD-E-43 Channel Head)	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

173. In Table 3.3.2-45, on page 3.3-516, the 2nd row is revised as follows:

Instrumentation Element	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

174. In Table 3.3.2-45, on page 3.3-517, the 3rd row is revised as follows:

Piping and Fittings	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

175. In Table 3.3.2-45, on page 3.3-518, the 5th row is revised as follows:

Piping and Fittings (Containment Isolation)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

176. In Table 3.3.2-45, on page 3.3-519, the 5th row is revised as follows:

Pump Casing	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

177. In Table 3.3.2-45, on page 3.3-520, the 1st row is revised as follows:

Tank	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	C ***C***

178. In Table 3.3.2-45, on page 3.3-520, the 7th row is revised as follows:

Thermowell	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

179. In Table 3.3.2-45, on page 3.3-521, the 4th row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

180. In Table 3.3.2-45, on page 3.3-522, the 2nd row is revised as follows:

Valve Body	Leakage Boundary (Spatial)	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

181. In Table 3.3.2-45, on page 3.3-523, the 1st row is revised as follows:

Valve Body (Containment Isolation)	Pressure Boundary	CASS	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

182. In Table 3.3.2-45, on page 3.3-523, the 5th row is revised as follows:

Valve Body (Containment Isolation)	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

183. In Table 3.4.2-1, on page 3.4-40, the 6th row is revised as follows:

Thermowell	Pressure Boundary	Stainless Steel	Treated Borated Water (Internal)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	VII.E1-17 (AP-79)	3.3.1-91	A ***A***

184. In Section 3.5.2.1.5, on page 3.5.8, the following program has been added to the Section "Aging Management Programs"

- ***One-Time Inspection Program (B.2.1.20)***

185. In Section 3.5.2.1.6, on page 3.5.9, the following program has been added to the Section "Aging Management Programs"

- ***One-Time Inspection Program (B.2.1.20)***

186. In Table 3.5.1, on page 3.5-46, line item 3.5.1-46 is revised as follows:

3.5.1-46	Group 5: fuel pool liners	Cracking due to stress corrosion cracking; loss of material due to pitting and crevice corrosion	Water Chemistry and Monitoring of spent fuel pool water level and level of fluid in the leak chase channel	No	The spent fuel pool is normally maintained less than 140°F, therefore Stress Corrosion Cracking is not an aging effect that requires management. Crevice and pitting corrosion are managed by the Water Chemistry Program, B.2.1.2. ***The One-Time Inspection Program, B.2.1.20, will be used to verify the effectiveness of the Water Chemistry Program.***

187. In Table 3.5.2-5, on page 3.5-223, the 4th line is revised as follows:

PST - Stainless Steel -FSB- Exposed to Treated Borated Water	Shelter, Protection	Stainless Steel	Treated Borated Water (External)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	III.A5-13 (T-14)	3.5.1-46	A, 507

188. In Table 3.5.2-5, on page 3.5-223, the 5th line is revised as follows:

PST - Stainless Steel -FSB- Exposed to Treated Borated Water	Shelter, Protection	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	III.A5-13 (T-14)	3.5.1-46	A

189. In Table 3.5.2-6, on page 3.5-233, the 5th line is revised as follows:

ASME Class 2/3 - Stainless Steel - in Treated Water	Structural Support	Stainless Steel	Treated Borated Water (External)	Loss of Material	Water Chemistry Program ***One-Time Inspection Program***	III.A5-13 (T-14)	3.5.1-46	A

190. In Table 3.5.2-6, on page 3.5-238, the 6th line is revised as follows:

Spent Fuel Rack Support - Stainless Steel - in Treated Water	Structural Support	Stainless Steel	Treated Borated Water (External)	Cracking	Water Chemistry Program ***One-Time Inspection Program***	VII.A2-7 (A-97)	3.3.1-90	A, 507

191. In Table 3.5.2-6, on page 3.5-238, a new line is added after the 6th line as follows:

Spent Fuel Rack Support - Stainless Steel - in Treated Water	***Structural Support***	***Stainless Steel***	***Treated Borated Water (External)***	***Loss of Material***	***Water Chemistry Program*** ***One-Time Inspection Program***	***III.A5-13 (T-14)***	***3.5.1-46***	***A***

RAI B.2.1.9-2

Background:
GALL Report AMP XI.M18, "Bolting Integrity," manages aging of closure bolting for pressure retaining components. The program includes periodic inspection of closure bolting for indication of loss of preload, cracking, and loss of material due to corrosion, rust, etc. GALL Report AMP XI.M36, "External Surfaces Monitoring of Mechanical Components," manages loss of material, cracking, and change in material properties of component external surfaces during system inspections and walkdowns.

In recent reviews of license renewal applications and operating experience, the NRC staff noted that Seabrook Station may have used, or currently uses, seal cap enclosures to contain water leakage. The staff also noted that the use of such enclosures may not be accounted for in their license renewal application. For example, the environment within seal cap enclosures may be submerged, rather than the air environment of the original component design. Also, enclosures may prevent the direct inspections of bolting and component external surfaces within the Bolting Integrity and External Surfaces Monitoring Programs, respectively.

Issue:
It is unclear to the staff whether Seabrook Station is using seal cap enclosures to contain water leakage, and if so, how bolting and component external surfaces within seal cap enclosures will be age managed, since direct inspection is not possible.

Request:
1. For all instances where seal cap enclosures surround pressure-retaining bolting and the external surfaces of in-scope components:

    a. Describe the leaking water environment (e.g., reactor coolant, secondary water, borated water) and the materials of construction of the bolting and component external surfaces that are exposed to that environment.

    b. Describe how the bolting and component external surfaces will be managed for loss of material, loss of preload, cracking, and change in material properties, as appropriate, in the submerged environment. Add associated AMR line items, if necessary.

    c. If the use of seal cap enclosures prevents the direct inspections within the Bolting Integrity and External Surfaces Monitoring Programs, provide technical justification for how the aging effects will be effectively managed during the period of extended operation.

2. Describe how the use of seal cap enclosures is controlled such that aging is managed as described in 1.b and 1.c.

NextEra Energy Seabrook Response:

1 a. Seabrook Station has one seal cap enclosure that surrounds the pressure-retaining bolts of valve 1-SI-V-82. The valve is an ASME Code Class 1, 6-inch, Westinghouse swing check valve. The leakage water environment is treated borated water. The valve body is SA182, F304, bonnet is SA240, TP304, stud SA453, GR660, nuts SA194, GR6 and seal cap enclosure is SA479, TP 316/316L.

1 b. NextEra installed a seal cap enclosure on SI-V-82 during the current operating cycle, (2011 Forced Outage) to allow continued operation of the unit until such time that the valve could be repaired. The installation of a seal cap enclosure creates a submerged environment that prevents the aging management of the bolting and component external surfaces for loss of material, loss of preload, cracking, and change in material properties. Therefore, removal of the seal cap enclosure and restoration of the original configuration is planned to be completed no later than December 31, 2014. With the removal of the seal cap enclosure the existing aging management programs are sufficient to age manage the bolting and component external surfaces for loss of material, loss of preload, cracking, and change in material properties during the period of extended operation.

1 c. See 1 b.

2. NextEra will remove the existing seal cap enclosure by December 31, 2014 and has no current plans to install any new seal cap enclosures. Therefore, the need to age manage the bolting and component external surfaces internal to the seal cap enclosure and inclusion of an associated AMR line items is not necessary.

License Renewal Application Appendix A, Section A.2.1.9, page A-9, is changed by adding a new second paragraph as follows:

Seabrook Station has one seal cap enclosure that surrounds the pressure-retaining bolts of valve 1-SI-V-82. The seal cap enclosures on SI-V-82 was installed during the 2011 Forced Outage to allow continued operation of the unit until such time that the valve could be repaired. The installation of a seal cap enclosures creates a submerged environment that prevents the aging management of the bolting and component external surfaces for loss of material, loss of preload, cracking, and change in material properties. Therefore, removal of the seal cap enclosures and restoration of the original configuration is planned to be completed no later than December 31, 2014. With the removal of the seal cap enclosures the existing aging management programs will remain sufficient to age manage the bolting and component external surfaces for loss of material, loss of preload, cracking, and change in material properties during the period of extended operation.

License Renewal Application Appendix B, Section B.2.1.9, page B-57 is changed by adding a new second paragraph as follows:

Seabrook Station has one seal cap enclosures that surrounds the pressure-retaining bolts of valve 1-SI-V-82. The seal cap enclosures on SI-V-82 was installed during the 2011 Forced Outage to allow continued operation of the unit until such time that the valve could be repaired. The installation of a seal cap enclosures creates a submerged environment that prevents the aging management of the bolting and component external surfaces for loss of material, loss of preload, cracking, and change in material properties. Therefore, removal of the seal cap enclosures and restoration of the original configuration is planned to be completed no later than December 31, 2014. With the removal of the seal cap enclosures the existing aging management programs will remain sufficient to age manage the bolting and component external surfaces for loss of material, loss of preload, cracking, and change in material properties during the period of extended operation.

Enclosure 2 to SBK-L-12123

Changes to the Seabrook Station License Renewal Application
Associated with
LR-ISG-2011-02, "Aging Management Program for Steam Generators"

LR-ISG-2011-02: Aging Management Program for Steam Generators

LR-ISG-2011-02 recommends that applicants for license renewal follow the guidance provided in Revision 3 of NEI 97-06 when implementing their steam generator aging management program, including using Revision 3 of the Steam Generator Integrity Assessment Guidelines.

The following changes have been made to the NextEra Seabrook License Renewal Application in accordance with the recommendations made in LR-ISG-2011-02.

1. B.2.1.10, Steam Generator Tube Integrity Program, is revised as follows:

   a. On page B-61, the 1st sentence of the 3rd paragraph is revised as follows:

      The Seabrook Station Steam Generator Tube Integrity Program is based on NEI 97-06 Rev. ~~2~~ ***3***, *"Steam Generator Program Guidelines"*, the response and commitment to Generic Letter 97-06, *"Degradation of Steam Generator Internals"* and Seabrook Station Technical Specification 3/4.4.5, "*Steam Generators*," which ensure that the performance criteria for structural integrity, accident-induced leakage, and operational leakage are not exceeded.

   b. On page B-61, "NUREG-1801 Consistency" section is revised as follows:

      This program~~, with the exception noted below,~~ is consistent with NUREG-1801-XI.M19 ***as modified by LR-ISG-2011-02***.

   c. On page B-63, the "Exceptions to NUREG-1801" section is revised as follows:

      There are no exceptions to NUREG-1801-XI.M19 as modified by LR-ISG-2011-02.

      ~~NUREG-1801 XI.M19 states "*... the licensee's commitment to implement the SG degradation management program described in NEI 97-06, are adequate to manage the effects of aging on the SG tubes, plugs, sleeves, and tube supports.*" The References section for NUREG-1801 XI.M19 identifies NEI 97-06, *"Steam Generator Program Guidelines"* as Revision 1, dated January 2001.~~

      ~~The Seabrook Station Steam Generator Tube Integrity Program is based on NEI 97-06, *"Steam Generator Program Guidelines"*, Revision 2, dated May 2005.~~

      ~~Justification for Exception~~

      ~~Revision 2 of NEI 97-06 did not reduce the functional requirements of Revision 1. In NEI correspondence with the NRC (Alex Marion to Dr. Brian W Sheron) dated September 9, 2005, *"Steam Generator Program Guidelines, Revision 2"*, NEI states that Revision 2 of NEI 97-06 is consistent with Technical Specification Task Force Traveler TSTF 449 Revision 4, *"Steam Generator Tube Integrity."* The NRC staff review and approval of TSTF 449, Revision 4, was documented in Generic Letter 2006-01, *"Steam Generator Tube Integrity and Associated Technical Specifications"*. Seabrook Station implemented TSTF 449 with License Amendment 115 to Technical Specifications in June of 2007. The approval of TSTF 449 Revision 4 justifies the use of Revision 2 of NEI 97-06.~~

   ~~*Program Elements Affected: Element 1 (Scope of Program).*~~

Enclosure 3 to SBK-L-12123

Clarification to Responses to RAI B.2.1.10-1 Associated with Steam Generator Tube-to Tubesheet Weld Inspection Plan, RAI B.2.1.26-1 Associated with Flash Point Testing, and to Steam Generator Divider Plate Inspection Plan

I. Clarification to Response to RAI B.2.1.10-1 Steam Generator Tube-to Tubesheet Weld Inspection Plans

On December 14, 2010, the NRC issued Request for Additional Information (RAI) B.2.1.10-1 related to Steam Generator Tube Integrity. Discussion with the NRC staff on May 29, 2012 identified a need for further clarification of the NextEra Seabrook response to that RAI. To provide clarity regarding the intent of the commitments relative to addressing the potential failure of the steam generator reactor coolant pressure boundary due to PWSCC cracking of tube-to-tubesheet welds, the response has been revised as indicated below.

NextEra Energy Seabrook Revised Response to RAI B.2.1.10-1:

1. Based on the currently approved alternate repair criteria, the Seabrook Station steam generator tube-to-tubesheet welds are not included in the reactor coolant pressure boundary. This alternate repair criteria has not yet been permanently approved.

~~2. Unless a permanent alternate repair criteria changing the ASME code boundary is approved by the NRC, or the Seabrook Station steam generators are changed to eliminate PWSCC-susceptible tube-to-tubesheet welds, Seabrook Station will submit a plant-specific aging management program to manage the potential aging effect of cracking due to PWSCC at least twenty-four months prior to entering the Period of Extended Operation.~~

~~This plant-specific program will either~~

2. ***Seabrook Station will to address the potential for cracking of the primary to secondary pressure boundary due to PWSCC of tube-to-tubesheet welds using one of the following two options:***

   1) Perform a one-time inspection of a representative sample of tube to tubesheet welds in all steam generators to determine if PWSCC cracking is present and, if cracking is identified, resolve the condition through engineering evaluation justifying continued operation or repair the condition, as appropriate, ***and establish an ongoing monitoring program to perform routine tube-to-tubesheet weld inspections for the remaining life of the steam generators,*** or

   2) Perform an analytical evaluation showing that the structural integrity of the steam generator tube-to-tubesheet interface is adequately maintaining the pressure boundary in the presence of tube-to-tubesheet weld cracking, ~~and~~ ***or by redefining the pressure boundary in which the tube-to-tubesheet weld is no longer included and, therefore, is not required for*** ~~that the tube-to-tubesheet welds are not required to perform a~~ reactor coolant pressure boundary function. ***The redefinition of the reactor coolant pressure boundary must be approved by the NRC as part of a license amendment request.***

Based on the above discussion, the following changes have been made to the Seabrook License Renewal Application.

1. In Section A.2.1.10, on page A-10, the following new second paragraph has been added:

   Seabrook Station will address the potential for cracking of the primary to secondary pressure boundary due to PWSCC of tube-to-tubesheet welds using one of the following two options:

   1) Perform a one-time inspection of a representative sample of tube to tubesheet welds in all steam generators to determine if PWSCC cracking is present and, if cracking is identified, resolve the condition through engineering evaluation justifying continued operation or repair the condition, as appropriate, and establish an ongoing monitoring program to perform routine tube-to-tubesheet weld inspections for the remaining life of the steam generators, or

   2) Perform an analytical evaluation showing that the structural integrity of the steam generator tube-to-tubesheet interface is adequately maintaining the pressure boundary in the presence of tube-to-tubesheet weld cracking, or by redefining the pressure boundary in which the tube-to-tubesheet weld is no longer included and, therefore, is not required for reactor coolant pressure boundary function. The redefinition of the rector coolant pressure boundary must be approved by the NRC as part of a license amendment request.

   Option 1 or 2 will be completed at least 24 months prior to entering the period of extended operation.

2. In Section B.2.1.10, on page B-64, the following Enhancement has been added:

   Seabrook Station will address the potential for cracking of the primary to secondary pressure boundary due to PWSCC of tube-to-tubesheet welds using one of the following two options:

   1) Perform a one-time inspection of a representative sample of tube to tubesheet welds in all steam generators to determine if PWSCC cracking is present and, if cracking is identified, resolve the condition through engineering evaluation justifying continued operation or repair the condition, as appropriate, and establish an ongoing monitoring program to perform routine tube-to-tubesheet weld inspections for the remaining life of the steam generators, or

   2) Perform an analytical evaluation showing that the structural integrity of the steam generator tube-to-tubesheet interface is adequately maintaining the pressure boundary in the presence of tube-to-tubesheet weld cracking, or by redefining the pressure boundary in which the tube-to-tubesheet weld is no longer included and, therefore, is not required for reactor coolant pressure

boundary function. The redefinition of the rector coolant pressure boundary must be approved by the NRC as part of a license amendment request.

Option 1 or 2 will be completed at least 24 months prior to entering the period of extended operation.

Program Elements Affected: Element 4 (Detection of Aging Effects).

In Section A.3, License Renewal Commitment #54 has been revised as follows:

No.	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
54	Steam Generator Tube Integrity	~~Unless a permanent alternate repair criteria changing the ASME code boundary is approved by the NRC, or the Seabrook Station steam generators are changed to eliminate PWSCC-susceptible tube-to-tubesheet welds, submit a plant-specific aging management program to manage the potential aging effect of cracking due to PWSCC at least twenty-four months prior to entering the Period of Extended Operation.~~ ***NextEra will address the potential for cracking of the primary to secondary pressure boundary due to PWSCC of tube-to-tubesheet welds using one of the following two options:*** ***1) Perform a one-time inspection of a representative sample of tube-to-tubesheet welds in all steam generators to determine if PWSCC cracking is present and, if cracking is identified, resolve the condition through engineering evaluation justifying continued operation or repair the condition, as appropriate, and establish an ongoing monitoring program to perform routine tube-to-tubesheet weld inspections for the remaining life of the steam generators, or*** ***2) Perform an analytical evaluation showing that the structural integrity of the steam generator tube-to-tubesheet interface is adequately maintaining the pressure boundary in the presence of tube-to-tubesheet weld cracking, or redefining the pressure boundary in which the tube-to-tubesheet weld is no longer included and, therefore, is not required for reactor coolant pressure boundary function. The redefinition of the rector coolant pressure boundary must be approved by the NRC as part of a license amendment request.***	A.2.1.10	~~Program to be submitted to NRC at~~ ***At*** least 24 months prior to ***entering*** the period of extended operation.

II. Steam Generator Divider Plate Inspection Plans

On June 4, 2012, the NRC requested that the NextEra Seabrook commitment to inspect the Steam Generator divider plates for evidence of primary water stress corrosion cracking (Commitment #55) also be reflected in Appendices A and B. On June 18, 2012, the NRC staff indicated that current operating experience indicates that the divider plate inspection should be performed no sooner than five years prior to entering the period of extended operation. Based on the discussion above the following License Renewal Application changes are provided.

In Section A.3, License Renewal Commitment #55 has been revised as follows:

55	Steam Generator Tube Integrity	Seabrook will perform an inspection of each steam generator to assess the condition of the divider plate assembly.	A.2.1.10	***Within five years*** ~~P~~prior to entering the period of extended operation

Based on the above discussion, the following changes have been made to the Seabrook License Renewal Application.

1. In Section A.2.1.10, on page A-10, the following new 3rd paragraph has been added:

   Seabrook will perform an inspection of each steam generator to assess the condition of the divider plate assembly within five years prior to entering the period of extended operation.

2. In Section B.2.1.10, on page B-63, the following has been added after the last paragraph of the Program Description :

   Seabrook will perform an inspection of each steam generator to assess the condition of the divider plate assembly within five years prior to entering the period of extended operation. The inspection techniques used will be capable of detecting primary water stress corrosion cracking in the steam generator divider plate assemblies and their associated welds. Any evidence of cracking will be documented and evaluated under the corrective action program.

III. Clarification to Response to RAI B.2.1.26-1 Associated with Flash Point Testing

In response to RAI B.2.1.26-1 (Seabrook letter SBK-L-11002, Enclosure 1) Seabrook revised Section B.2.1.26 to state that "lube oil analysis required will include "Flash Point" when there is a potential for contamination of the lubrication oil by fuel." Consistent with that response, Appendix A, Section A.2.1.26, Lubricating Oil Analysis has been changed as follows:

A.2.1.26 Lubricating Oil Analysis

The Lubricating Oil Analysis Program obtains and analyzes lubricating oil samples from plant equipment to ensure that the oil quality is maintained within established limits. The program provides an early indication of adverse equipment condition in lubricating oil environments.

The Seabrook Station Lubricating Oil Analysis Program includes sampling and analysis of lubricating oil for components within the scope of license renewal and subject to aging management review, that are exposed to lubricating oil and for which pressure boundary integrity or heat transfer is required for the component to perform its intended function. ***The lube oil analysis required will include "Flash Point" when there is a potential for contamination of the lubrication oil by fuel.***

Enclosure 4 to SBK-L-12123

LRA Appendix A - Final Safety Report Supplement

Table A.3 License Renewal Commitment List

A.3 LICENSE RENEWAL COMMITMENT LIST

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
1.	PWR Vessel Internals	An inspection plan for Reactor Vessel Internals will be submitted for NRC review and approval.	A.2.1.7	Program to be implemented prior to the period of extended operation. Inspection plan to be submitted to NRC not later than 2 years after receipt of the renewed license or not less than 24 months prior to the period of extended operation, whichever comes first.
2.	Closed-Cycle Cooling Water	Enhance the program to include visual inspection for cracking, loss of material and fouling when the in-scope systems are opened for maintenance.	A.2.1.12	Prior to the period of extended operation
3.	Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems	Enhance the program to monitor general corrosion on the crane and trolley structural components and the effects of wear on the rails in the rail system.	A.2.1.13	Prior to the period of extended operation
4.	Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems	Enhance the program to list additional cranes for monitoring.	A.2.1.13	Prior to the period of extended operation
5.	Compressed Air Monitoring	Enhance the program to include an annual air quality test requirement for the Diesel Generator compressed air sub system.	A.2.1.14	Prior to the period of extended operation

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
6.	Fire Protection	Enhance the program to perform visual inspection of penetration seals by a fire protection qualified inspector.	A.2.1.15	Prior to the period of extended operation.
7.	Fire Protection	Enhance the program to add inspection requirements such as spalling, and loss of material caused by freeze-thaw, chemical attack, and reaction with aggregates by qualified inspector.	A.2.1.15	Prior to the period of extended operation.
8.	Fire Protection	Enhance the program to include the performance of visual inspection of fire-rated doors by a fire protection qualified inspector.	A.2.1.15	Prior to the period of extended operation.
9.	Fire Water System	Enhance the program to include NFPA 25 guidance for "where sprinklers have been in place for 50 years, they shall be replaced or representative samples from one or more sample areas shall be submitted to a recognized testing laboratory for field service testing".	A.2.1.16	Prior to the period of extended operation.
10.	Fire Water System	Enhance the program to include the performance of periodic flow testing of the fire water system in accordance with the guidance of NFPA 25.	A.2.1.16	Prior to the period of extended operation.
11.	Fire Water System	Enhance the program to include the performance of periodic visual or volumetric inspection of the internal surface of the fire protection system upon each entry to the system for routine or corrective maintenance. These inspections will be documented and trended to determine if a representative number of inspections have been performed prior to the period of extended operation. If a representative number of inspections have not been performed prior to the period of extended operation, focused inspections will be conducted. These inspections will be performed within ten years prior to the period of extended operation.	A.2.1.16	Within ten years prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
12.	Aboveground Steel Tanks	Enhance the program to include components and aging effects required by the Aboveground Steel Tanks.	A.2.1.17	Prior to the period of extended operation.
13.	Aboveground Steel Tanks	Enhance the program to include an ultrasonic inspection and evaluation of the internal bottom surface of the two Fire Protection Water Storage Tanks.	A.2.1.17	Within ten years prior to the period of extended operation.
14.	Fuel Oil Chemistry	Enhance program to add requirements to 1) sample and analyze new fuel deliveries for biodiesel prior to offloading to the Auxiliary Boiler fuel oil storage tank and 2) periodically sample stored fuel in the Auxiliary Boiler fuel oil storage tank.	A.2.1.18	Prior to the period of extended operation.
15.	Fuel Oil Chemistry	Enhance the program to add requirements to check for the presence of water in the Auxiliary Boiler fuel oil storage tank at least once per quarter and to remove water as necessary.	A.2.1.18	Prior to the period of extended operation.
16.	Fuel Oil Chemistry	Enhance the program to require draining, cleaning and inspection of the diesel fire pump fuel oil day tanks on a frequency of at least once every ten years.	A.2.1.18	Prior to the period of extended operation.
17.	Fuel Oil Chemistry	Enhance the program to require ultrasonic thickness measurement of the tank bottom during the 10-year draining, cleaning and inspection of the Diesel Generator fuel oil storage tanks, Diesel Generator fuel oil day tanks, diesel fire pump fuel oil day tanks and auxiliary boiler fuel oil storage tank.	A.2.1.18	Prior to the period of extended operation.
18.	Reactor Vessel Surveillance	Enhance the program to specify that all pulled and tested capsules, unless discarded before August 31, 2000, are placed in storage.	A.2.1.19	Prior to the period of extended operation.
19.	Reactor Vessel Surveillance	Enhance the program to specify that if plant operations exceed the limitations or bounds defined by the Reactor Vessel	A.2.1.19	Prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
		Surveillance Program, such as operating at a lower cold leg temperature or higher fluence, the impact of plant operation changes on the extent of Reactor Vessel embrittlement will be evaluated and the NRC will be notified.		
20.	Reactor Vessel Surveillance	Enhance the program as necessary to ensure the appropriate withdrawal schedule for capsules remaining in the vessel such that one capsule will be withdrawn at an outage in which the capsule receives a neutron fluence that meets the schedule requirements of 10 CFR 50 Appendix H and ASTM E185-82 and that bounds the 60-year fluence, and the remaining capsule(s) will be removed from the vessel unless determined to provide meaningful metallurgical data.	A.2.1.19	Prior to the period of extended operation.
21.	Reactor Vessel Surveillance	Enhance the program to ensure that any capsule removed, without the intent to test it, is stored in a manner which maintains it in a condition which would permit its future use, including during the period of extended operation.	A.2.1.19	Prior to the period of extended operation.
22.	One-Time Inspection	Implement the One Time Inspection Program.	A.2.1.20	Within ten years prior to the period of extended operation.
23.	Selective Leaching of Materials	Implement the Selective Leaching of Materials Program. The program will include a one-time inspection of selected components where selective leaching has not been identified and periodic inspections of selected components where selective leaching has been identified.	A.2.1.21	Within five years prior to the period of extended operation.
24.	Buried Piping And Tanks Inspection	Implement the Buried Piping And Tanks Inspection Program.	A.2.1.22	Within ten years prior to entering the period of extended operation
25.	One-Time Inspection of ASME Code Class 1 Small Bore-Piping	Implement the One-Time Inspection of ASME Code Class 1 Small Bore-Piping Program.	A.2.1.23	Within ten years prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
26.	External Surfaces Monitoring	Enhance the program to specifically address the scope of the program, relevant degradation mechanisms and effects of interest, the refueling outage inspection frequency, the inspections of opportunity for possible corrosion under insulation, the training requirements for inspectors and the required periodic reviews to determine program effectiveness.	A.2.1.24	Prior to the period of extended operation.
27.	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components	Implement the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program.	A.2.1.25	Prior to the period of extended operation.
28.	Lubricating Oil Analysis	Enhance the program to add required equipment, lube oil analysis required, sampling frequency, and periodic oil changes.	A.2.1.26	Prior to the period of extended operation.
29.	Lubricating Oil Analysis	Enhance the program to sample the oil for the Reactor Coolant pump oil collection tanks.	A.2.1.26	Prior to the period of extended operation.
30.	Lubricating Oil Analysis	Enhance the program to require the performance of a one-time ultrasonic thickness measurement of the lower portion of the Reactor Coolant pump oil collection tanks prior to the period of extended operation.	A.2.1.26	Prior to the period of extended operation.
31.	ASME Section XI, Subsection IWL	Enhance procedure to include the definition of "Responsible Engineer".	A.2.1.28	Prior to the period of extended operation.
32.	Structures Monitoring Program	Enhance procedure to add the aging effects, additional locations, inspection frequency and ultrasonic test requirements.	A.2.1.31	Prior to the period of extended operation.
33.	Structures Monitoring Program	Enhance procedure to include inspection of opportunity when planning excavation work that would expose inaccessible concrete.	A.2.1.31	Prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
34.	Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements	Implement the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program.	A.2.1.32	Prior to the period of extended operation.
35.	Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits	Implement the Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits program.	A.2.1.33	Prior to the period of extended operation.
36.	Inaccessible Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements	Implement the Inaccessible Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program.	A.2.1.34	Prior to the period of extended operation.
37.	Metal Enclosed Bus	Implement the Metal Enclosed Bus program.	A.2.1.35	Prior to the period of extended operation.
38.	Fuse Holders	Implement the Fuse Holders program.	A.2.1.36	Prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
39.	Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements	Implement the Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements program.	A.2.1.37	Prior to the period of extended operation.
40.	345 KV SF_6 Bus	Implement the 345 KV SF_6 Bus program.	A.2.2.1	Prior to the period of extended operation.
41.	Metal Fatigue of Reactor Coolant Pressure Boundary	Enhance the program to include additional transients beyond those defined in the Technical Specifications and UFSAR.	A.2.3.1	Prior to the period of extended operation.
42.	Metal Fatigue of Reactor Coolant Pressure Boundary	Enhance the program to implement a software program, to count transients to monitor cumulative usage on selected components.	A.2.3.1	Prior to the period of extended operation.
43.	Pressure –Temperature Limits, including Low Temperature Overpressure Protection Limits	Seabrook Station will submit updates to the P-T curves and LTOP limits to the NRC at the appropriate time to comply with 10 CFR 50 Appendix G.	A.2.4.1.4	The updated analyses will be submitted at the appropriate time to comply with 10 CFR 50 Appendix G, Fracture Toughness Requirements.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
44.	Environmentally-Assisted Fatigue Analyses (TLAA)	NextEra Seabrook will perform a review of design basis ASME Class 1 component fatigue evaluations to determine whether the NUREG/CR-6260-based components that have been evaluated for the effects of the reactor coolant environment on fatigue usage are the limiting components for the Seabrook plant configuration. If more limiting components are identified, the most limiting component will be evaluated for the effects of the reactor coolant environment on fatigue usage. If the limiting location identified consists of nickel alloy, the environmentally-assisted fatigue calculation for nickel alloy will be performed using the rules of NUREG/CR-6909. (1) Consistent with the Metal Fatigue of Reactor Coolant Pressure Boundary Program Seabrook Station will update the fatigue usage calculations using refined fatigue analyses, if necessary, to determine acceptable CUFs (i.e., less than 1.0) when accounting for the effects of the reactor water environment. This includes applying the appropriate Fen factors to valid CUFs determined from an existing fatigue analysis valid for the period of extended operation or from an analysis using an NRC-approved version of the ASME code or NRC-approved alternative (e.g., NRC-approved code case). (2) If acceptable CUFs cannot be demonstrated for all the selected locations, then additional plant-specific locations will be evaluated. For the additional plant-specific locations, if CUF, including environmental effects is greater than 1.0, then Corrective Actions will be initiated, in accordance with the Metal Fatigue of Reactor Coolant Pressure Boundary Program, B.2.3.1. Corrective Actions will include inspection, repair, or replacement of the affected locations before exceeding a CUF of 1.0 or the effects of fatigue will be managed by an inspection program that has been reviewed and approved by the NRC (e.g., periodic non-destructive examination of the affected locations at inspection intervals to be determined by a method accepted by the NRC).	A.2.4.2.3	At least two years prior to entering the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
45.	Number Not Used			
46.	Protective Coating Monitoring and Maintenance	Enhance the program by designating and qualifying an Inspector Coordinator and an Inspection Results Evaluator.	A.2.1.38	Prior to the period of extended operation
47.	Protective Coating Monitoring and Maintenance	Enhance the program by including, "Instruments and Equipment needed for inspection may include, but not be limited to, flashlight, spotlights, marker pen, mirror, measuring tape, magnifier, binoculars, camera with or without wide angle lens, and self sealing polyethylene sample bags."	A.2.1.38	Prior to the period of extended operation
48.	Protective Coating Monitoring and Maintenance	Enhance the program to include a review of the previous two monitoring reports.	A.2.1.38	Prior to the period of extended operation
49.	Protective Coating Monitoring and Maintenance	Enhance the program to require that the inspection report is to be evaluated by the responsible evaluation personnel, who is to prepare a summary of findings and recommendations for future surveillance or repair.	A.2.1.38	Prior to the period of extended operation
50.	ASME Section XI, Subsection IWE	Perform UT testing of the containment liner plate in the vicinity of the moisture barrier for loss of material.	A.2.1.27	Within the next two refueling outages, OR15 or OR16, and repeated at intervals of no more than five refueling outages.
51.	Number Not Used			

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
52.	ASME Section XI, Subsection IWL	Implement measures to maintain the exterior surface of the Containment Structure, from elevation -30 feet to +20 feet, in a dewatered state.	A.2.1.28	By December 31, 2012
53.	Reactor Head Closure Studs	Replace the spare reactor head closure stud(s) manufactured from the bar that has a yield strength > 150 ksi with ones that do not exceed 150 ksi.	A.2.1.3	Prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
54.	Steam Generator Tube Integrity	~~Unless a permanent alternate repair criteria changing the ASME code boundary is approved by the NRC, or the Seabrook Station steam generators are changed to eliminate PWSCC-susceptible tube-to-tubesheet welds, submit a plant-specific aging management program to manage the potential aging effect of cracking due to PWSCC at least twenty-four months prior to entering the Period of Extended Operation.~~ ***NextEra will address the potential for cracking of the primary to secondary pressure boundary due to PWSCC of tube-to-tubesheet welds using one of the following two options:*** ***1) Perform a one-time inspection of a representative sample of tube-to-tubesheet welds in all steam generators to determine if PWSCC cracking is present and, if cracking is identified, resolve the condition through engineering evaluation justifying continued operation or repair the condition, as appropriate, and establish an ongoing monitoring program to perform routine tube-to-tubesheet weld inspections for the remaining life of the steam generators, or*** ***2) Perform an analytical evaluation showing that the structural integrity of the steam generator tube-to-tubesheet interface is adequately maintaining the pressure boundary in the presence of tube-to-tubesheet weld cracking, or redefining the pressure boundary in which the tube-to-tubesheet weld is no longer included and, therefore, is not required for reactor coolant pressure boundary function. The redefinition of the rector coolant pressure boundary must be approved by the NRC as part of a license amendment request.***	A.2.1.10	~~Program to be submitted to NRC at~~ ***At*** least 24 months prior to ***entering*** the period of extended operation.
55.	Steam Generator Tube Integrity	Seabrook will perform an inspection of each steam generator to assess the condition of the divider plate assembly.	A.2.1.10	***Within five years*** ~~P~~prior to entering the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
56.	Closed-Cycle Cooling Water System	Revise the station program documents to reflect the EPRI Guideline operating ranges and Action Level values for hydrazine and sulfates.	A.2.1.12	Prior to entering the period of extended operation.
57.	Closed-Cycle Cooling Water System	Revise the station program documents to reflect the EPRI Guideline operating ranges and Action Level values for Diesel Generator Cooling Water Jacket pH.	A.2.1.12	Prior to entering the period of extended operation.
58.	Fuel Oil Chemistry	Update Technical Requirement Program 5.1, (Diesel Fuel Oil Testing Program) ASTM standards to ASTM D2709-96 and ASTM D4057-95 required by the GALL XI.M30 Rev 1	A.2.1.18	Prior to the period of extended operation.
59.	Nickel Alloy Nozzles and Penetrations	The Nickel Alloy Aging Nozzles and Penetrations program will implement applicable Bulletins, Generic Letters, and staff accepted industry guidelines.	A.2.2.3	Prior to the period of extended operation.
60.	Buried Piping and Tanks Inspection	Implement the design change replacing the buried Auxiliary Boiler supply piping with a pipe-within-pipe configuration with leak detection capability.	A.2.1.22	Prior to entering the period of extended operation.
61.	Compressed Air Monitoring Program	Replace the flexible hoses associated with the Diesel Generator air compressors on a frequency of every 10 years.	A.2.1.14	Within ten years prior to entering the period of extended operation.
62.	Water Chemistry	Enhance the program to include a statement that sampling frequencies are increased when chemistry action levels are exceeded.	A.2.1.2	Prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
63.	Flow Induced Erosion	Ensure that the quarterly CVCS Charging Pump testing is continued during the PEO. Additionally, add a precaution to the test procedure to state that an increase in the CVCS Charging Pump mini flow above the acceptance criteria may be indicative of erosion of the mini flow orifice as described in LER 50-275/94-023.	N/A	Prior to the period of extended operation
64.	Buried Piping and Tanks Inspection	Soil analysis shall be performed prior to entering the period of extended operation to determine the corrosivity of the soil in the vicinity of non-cathodically protected steel pipe within the scope of this program. If the initial analysis shows the soil to be non-corrosive, this analysis will be re-performed every ten years thereafter.	A.2.1.22	Prior to entering the period of extended operation.
65.	Flux Thimble Tube	Implement measures to ensure that the movable incore detectors are not returned to service during the period of extended operation.	N/A	Prior to entering the period of extended operation
66.	Number Not Used			
67.	Structures Monitoring Program	Perform one shallow core bore in an area that was continuously wetted from borated water to be examined for concrete degradation and also expose rebar to detect any degradation such as loss of material.	A.2.1.31	No later than December 31, 2015
68.	Structures Monitoring Program	Perform sampling at the leakoff collection points for chlorides, sulfates, pH and iron once every three months.	A.2.1.31	Starting January 2014
69.	Open-Cycle Cooling Water System	Replace the Diesel Generator Heat Exchanger Plastisol PVC lined Service Water piping with piping fabricated from AL6XN material.	A.2.1.11	Prior to the period of extended operation.

	PROGRAM or TOPIC	COMMITMENT	UFSAR LOCATION	SCHEDULE
70.	Closed-Cycle Cooling Water System	Inspect the piping downstream of CC-V-444 and CC-V-446 to determine whether the loss of material due to cavitation induced erosion has been eliminated or whether this remains an issue in the primary component cooling water system.	A.2.1.12	Within ten years prior to the period of extended operation.
71.	Alkali-Silica Reaction (ASR) Monitoring Program	Implement the Alkali-Silica Reaction (ASR) Monitoring Program		Prior to entering the period of extended operation.