NEXTera ENERGY SEABROOK

December 15, 2011

SBK-L-11240
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
Additional Information
NextEra Energy Seabrook License Renewal Application
Aging Management Programs

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 "Request for Additional Information Related to the Review of the Seabrook Station License Renewal Application (TAC NO. ME4028) – Aging Management Programs" December 14, 2010 (Accession Number ML103260554)
3. 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, 2011 (Accession Number ML110140809)
4. Summary Of Telephone Conference Call Held On November 22, 2011, Between The U.S. Nuclear Regulatory Commission And Nextera Energy Seabrook, LLC, Concerning The Response To The Request For Additional Information Pertaining To The Seabrook Station, License Renewal Application (TAC No. ME4028). (Accession Number ML11327A072)

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.

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In Reference 2, the NRC requested additional information in order to complete its review of the License Renewal Application (LRA). In Reference 3, NextEra provided a response to RAIs related to the Metal Fatigue Aging Management Program. During staff review of the LRA an additional question regarding action limits associated with the personnel airlock and equipment hatch was raised (Reference 4). Enclosure 1 contains NextEra's revised response to the previous request for additional information. For clarity the revised response shows deleted text highlighted by strikethroughs and inserted text highlighted by bold italics.

There are no new or revised regulatory commitments contained in this letter.

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.

Paul O. Freeman
Site Vice President

Enclosures:

Enclosure 1- Revised Response to NextEra letter SBK-L-11002, Request for Additional Information Seabrook Station License Renewal Application Aging Management Programs cc:

W.M. Dean,	NRC Region I Administrator
G. E. Miller,	NRC Project Manager, Project Directorate I-2
W. J. Raymond,	NRC Resident Inspector
R. A. Plasse Jr.,	NRC Project Manager, License Renewal
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NEXTera ENERGY
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I, Paul O. Freeman, 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

15th day of December, 2011

Paul O. Freeman

Paul O. Freeman
Site Vice President

Shirley Sweeney

Notary Public

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

<u>Enclosure 1 to SBK-L-11240</u>

Revised Response to NextEra letter SBK-L-11002

Request for Additional Information

Seabrook Station License Renewal Application

Aging Management Programs

Issue

In a conference call on November 22, 2011 the staff inquired how NextEra will track design limits related to plant startups and shutdowns as listed in LRA Section 4.6.2 related to the Equipment Hatch and Personnel Air Lock. As previously noted in NextEra's response to RAI B.2.3.1-3 and RAI B.2.3.1-4 (Reference 3) the design limit tracked by FatiguePro is 200 Plant Heatups and Cooldowns with an 80% trigger level for further evaluation. This action limit would exceed the 120 cycle design limit for the Personnel Airlock and Equipment Hatch as specified in LRA section 4.6.2.

NextEra Energy Seabrook Response

NextEra has revised LRA Table 4.3.1-2 previously submitted in response to RAI B2.3.1-3 to include the specific *plant startup and shutdown* design limit of 120 cycles for the Personnel Airlock and Equipment Hatch. Cycle counting for these specific components will initiate appropriate evaluations through the corrective action program if the 80% action limit is reached.

As previously stated in RAI B.2.3.1-4, an action limit of 80% will be used by the Metal Fatigue of Reactor Coolant Pressure Boundary Program for all limits tracked in FatiguePro. This action limit will provide sufficient margin and time to allow for appropriate corrective actions as defined in the Metal Fatigue of Reactor Coolant Pressure Boundary Program to be implemented prior to reaching the design limit.

NextEra has reviewed the LRA and did not identify additional non conservative design limits utilized in TLAA analysis.

Revised NextEra Energy Seabrook Response to RAI B.2.3.1-3: LRA Table 4.3.1-2

[See Following Pages for Revised Table 4.3.1-2]

Table 4.3.1-2 Summary of Reactor Coolant System Design Transients					
Transient Description	Limiting Design Basis Number of Occurrences for 40 Year Operating Period	UFSAR Section 3.9(N).1.1	Aging Management Program Basis Document Metal Fatigue of Reactor Coolant Pressure Boundary	Counted in	
				Station Procedure	FatiguePro
Normal Condition Transients:					
Plant Heatup @ ≤ 100 °F/hr	200	Heatup and Cooldown at 100°F per hour	Plant (RCS) Heatup	Y	Y
Plant Cooldown @ ≤ 100 °F/hr	200		Plant (RCS) Cooldown	Y	Y
Plant Startup and Shutdown	***120***		***UFSAR Section 3.8.2.3 Equipment Hatch and Personnel Airlock***	***N***	***Y***
Pressurizer Heatup	200	Not Specified		N	Y
Pressurizer Cooldown	200	Pressurizer cooldown 200°F per hour		N	Y
Unit Loading @ 5% full power/min	13,200 (1)	Unit Loading and Unloading at 5 Percent of Full Power per Minute		Y	Y
Unit Unloading @ 5% full power/min	13,200 (1)			Y	Y
Step Load Increase of 10% of full power	2,000	Step Load Increase and Decrease of 10 Percent of Full Power		Y	Y
Step Load Decrease of 10% of full power	2,000			Y	Y
Large step load decrease with steam dump	200	Large Step Load Decrease with Steam Dump	Large Step Load Decrease	Y	Y

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				Station Procedure	FatiguePro
Steady state fluctuations (7)	Initial – 1.5 x 10^5 Random – 3.0 x 10^5	Steady-State Fluctuations		N	N
Feedwater Cycling at Hot Shutdown	2,000	Feedwater Cycling at Hot Shutdown	Feedwater Cycling	N	Y
Loop out of service Normal loop shutdown	80	Loop out of service (4) Normal loop shutdown		N	Y
Normal loop startup	70	Normal loop startup		Y	Y
Feedwater Heaters out of service One heater out of service One bank of heaters out of service	120 120	Feedwater Heaters out of service One heater out of service One bank of heaters out of service		N	Y
Unit loading between 0% to 15% of full power	500 (2)	Unit Loading and Unloading Between 0 and 15 Percent of Full Power		Y	Y
Unit unloading between 15% to 0% of full power	500 (2)			Y	Y
Boron concentration equalization (8)	26,400	Boron Concentration Equalization		N	N
Refueling	80	Refueling	Refueling	Y	Y

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				Station Procedure	FatiguePro
Reduced temperature return to power	2,000	Reduced Temperature Return to Power		Y	Y
Reactor Coolant Pumps startup/shutdown	3,000 (3)	Reactor Coolant Pumps (RCP) Startup and Shutdown		Y	Y
Letdown Flow Step Decrease and Return (6)	2,000	Not Specified	Letdown Flow Step Decrease and Return	N	Y
Upset Transients:					
Loss of load without immediate turbine trip	80	Loss of Load (Without Immediate Turbine Trip)	Loss of Turbine Load	Y	Y
Loss of all offsite power (blackout with natural circulation in the RCS)	40	Loss of Power	Loss of Offsite Power	Y	Y
Partial loss of flow (loss of one pump)	80	Partial Loss of Flow	Partial Loss of RCS Flow	Y	Y

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				Station Procedure	FatiguePro
Reactor trip from full power: *Without cooldown* *With cooldown, without safety injection* *With cooldown and safety injection*	230 160 10	Reactor Trip from Full Power: *Reactor trip with no inadvertent cooldown* *Reactor trip with cooldown but no safety injection* *Reactor trip with cooldown actuating safety injection*	-Reactor Trip from Full Power – with no Inadvertent Cooldown -Reactor Trip from Full Power – with Cooldown and no SI -Reactor Trip from Full Power – with Cooldown and SI (HHSI)	Y Y Y	Y Y Y
Inadvertent reactor coolant depressurization	20	Inadvertent Reactor Coolant System Depressurization	Inadvertent RCS Depressurization	Y	Y
			Inadvertent Pressurizer Auxiliary Spray Actuation (5)	Y	Y
Inadvertent startup of inactive loop	10	Inadvertent Startup of an Inactive Loop		Y	Y
Control rod drop	80	Control Rod Drop		Y	Y
Inadvertent ECCS actuation	60	Inadvertent Safety Injection Actuation	Inadvertent Safety Injection (SI) Actuation	Y	Y
Operating Basis Earthquake (5 earthquakes of 10 cycles each)	50	Operating Basis Earthquake	Operating Basis Earthquake (OBE)	N	Y

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Transient Description	Limiting Design Basis Number of Occurrences for 40 Year Operating Period	UFSAR Section 3.9(N).1.1	Aging Management Program Basis Document Metal Fatigue of Reactor Coolant Pressure Boundary	Counted in	
				Station Procedure	FatiguePro
Excessive feedwater flow	30	Excessive Feedwater Flow	Excessive Feedwater Flow	Y	Y
RCS Cold Overpressurization	10	RCS Cold Overpressurization		N	Y
Charging and Letdown Flow Shutoff and Return (6)	60	Not Specified	Charging and Letdown Flow Shutoff and Return	N	Y
Charging Flow Shutoff with Delayed Return (6)	20	Not Specified	Charging Flow Shutoff with Delayed Return	N	Y
Charging Flow Shutoff with Prompt Return (6)	20	Not Specified	Charging Flow Shutoff with Prompt Return	N	Y
Letdown Flow Shutoff with Delayed Return (6)	20	Not Specified	Letdown Flow Shutoff with Delayed Return	N	Y
Letdown Flow Shutoff with Prompt Return (6)	200	Not Specified	Letdown Flow Shutoff with Prompt Return	N	Y
Emergency Transients:					
Small LOCA	5	Small Loss-of-Coolant Accident		N	N
Small steam break	5	Small Steam Line Break		N	N
Complete loss of flow	5	Complete Loss of Flow		N	N
Faulted Transients:					
Main reactor coolant pipe break (LOCA)	1	Reactor Coolant Pipe Break (Large Loss-of-Coolant Accident)		N	N

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				Station Procedure	FatiguePro
Large steam line break	1	Large Steam Line Break		N	N
Feedwater line break	1	Feedwater Line Break		N	N
Reactor Coolant Pump locked rotor	1	Reactor Coolant Pump Locked Rotor		N	N
Control rod ejection	1	Control Rod Ejection		N	N
Steam Generator tube rupture	Included under Reactor Trip with cooldown and safety injection	Steam Generator Tube Rupture		N	N
Safe Shutdown Earthquake	1	Safe Shutdown Earthquake		N	N
Test Transients:					
Primary side hydrostatic test	10	Primary Side Hydrostatic test	Primary Side RCS Hydrostatic Test	Y	Y
Secondary side hydrostatic test	10	Secondary Side Hydrostatic Test		Y	Y
Turbine roll test	20	Turbine Roll Test	Turbine Roll Test	Y	Y
Primary side leak test	200	Primary Side Leakage Test	Primary Side RCS Leakage Test	Y	Y
Secondary side leak test	80	Secondary Side Leakage Test		Y	Y
Tube leak test	800	Tube Leakage Test		Y	Y

1. For the design transient of Unit Loading and Unit Unloading @ 5% full power/min., the Reactor Vessel, Steam Generators and Pressurizers are designed for 13,200 cycles, where the Class 1 piping is designed for 18,300 cycles. The most limiting value of these major components is used as a monitoring limit in the Metal Fatigue of Reactor Coolant Pressure Boundary Program (B.2.3.1).

2. For the design transients of Unit load and unload between 0% to 15% of full power, the Reactor Vessel, Steam Generators and Class 1 piping are designed for 500 cycles, where the Pressurizer is designed for 1,510 cycles. The most limiting value of these major components is used as a monitoring limit in the Metal Fatigue of Reactor Coolant Pressure Boundary Program (B.2.3.1).

3. For the design transient of Reactor Coolant Pump startup/shutdown, the limit specified in the UFSAR is 3800 cycles. The Pressurizer is designed for 4,000 cycles, where Steam Generators are designed for 3,000 cycles. The Steam Generators ~~has~~ ***have*** the most limiting value (3,000 cycles) of these components ~~is~~ ***and are*** used as a monitoring limit in the Metal Fatigue of Reactor Coolant Pressure Boundary Program (B.2.3.1).

4. Categorization of the Loop out of Service transient is taken from UFSAR Section 3.9(N).1.1.a.7.

5. Inadvertent Pressurizer Auxiliary Spray Actuation transient specified in the PBD is one of the five subevents included in the Inadvertent Reactor Coolant System Depressurization event.

6. Transients identified as auxiliary transients in Westinghouse Systems Standard.

7. The Steady-State Fluctuation event does not contribute to the computed fatigue usage for any analyzed component and is not specifically counted.

8. The Boron Concentration Equalization event is a load-following event, and is not specifically counted.