



August 26, 2015

SBK-L-15137

Docket No. 50-443

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Seabrook Station

NextEra Energy Seabrook, LLC's Fifth Six-Month Status Report in Response to March 12, 2012
Commission Order Modifying Licenses with Regard to Requirements for Mitigation
Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)

References:

1. NRC Order Number EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, March 12, 2012 (ML12054A736)
2. NRC Interim Staff Guidance JLD-ISG-2012-01, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, Revision 0, August 29, 2012 (ML12229A174)
3. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 0, August 2012 (ML12242A378)
4. NextEra Energy Seabrook, LLC Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, (Order Number EA-12-049), October 26, 2012 (ML12311A013)
5. NextEra Energy Seabrook, LLC Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, (Order Number EA-12-049), February 26, 2013 (ML13063A438)
6. NextEra Energy Seabrook, LLC First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, (Order Number EA-12-049), August 28, 2013 (ML13247A178)
7. NextEra Energy Seabrook, LLC Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, (Order Number EA-12-049), February 27, 2014 (ML14064A188)

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8. NextEra Energy Seabrook, LLC Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, (Order Number EA-12-049), August 26, 2014 (ML14246A193)
9. NextEra Energy Seabrook, LLC Fourth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, (Order Number EA-12-049), February 27, 2015 (ML15068A021)
10. SBK-L-15152, NextEra Energy Seabrook LLC's Request for Schedule Relaxation from NRC Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, July 23, 2015

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an order (Reference 1) to NextEra Energy Seabrook, LLC (NextEra Energy Seabrook). Reference 1 was immediately effective and directs NextEra Energy Seabrook to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 2 endorses industry guidance document NEI 12-06, Revision 0 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided the NextEra Energy Seabrook initial status report regarding mitigation strategies. Reference 5 provided the NextEra Energy Seabrook overall integrated plan.

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. References 6 through 9 provided the six-month status reports pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. Reference 9 also included the revised FLEX Integrated Plan. The Attachment to this letter provides the fifth six-month update report required by Reference 1 (Attachment 1), that delineates progress made in implementing the requirements of Reference 1 and an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis.

This letter contains no new regulatory commitments.

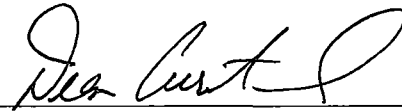
If you have any questions regarding this report, please contact Mr. Michael Ossing, Licensing Manager, at (603) 773-7512.

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

Executed on August 26, 2015.

Sincerely,

NextEra Energy Seabrook, LLC



Dean Curtland
Site Vice President

cc: D. Dorman, NRC Region I Administrator
J.G. Lamb, NRC Project Manager, Project Directorate 1-2
P. Cataldo, NRC Senior Resident Inspector
Director, Office of Nuclear Reactor Regulation
Ms. Jessica A. Kratchmann, NRR/JLD/PMB, NRC
Mr. Eric E. Bowman, NRR/DPR/PGCB

Director Homeland Security and Emergency Management
New Hampshire Department of Safety
Division of Homeland Security and Emergency Management
Bureau of Emergency Management
33 Hazen Drive
Concord, NH 03305

Mr. John Giarrusso, Jr., Nuclear Preparedness Manager
The Commonwealth of Massachusetts
Emergency Management Agency
400 Worcester Road
Framingham, MA 01702-5399

Attachment to SBK-L-15137

NextEra Energy Seabrook, LLC's Fifth Six-Month Status Report in Response to March 12, 2012
Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies
for Beyond-Design-Basis External Events (Order Number EA-12-049)

NextEra Energy Seabrook, LLC's Fifth Six Month Status Report for the Implementation of Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events'

1 Introduction

NextEra Energy Seabrook, LLC (NextEra Energy Seabrook) developed and submitted an Overall Integrated Plan (Reference 1) in response to NRC Order EA-12-049. The Integrated Plan has been revised to describe Seabrook's current proposed diverse and flexible coping strategies (FLEX). This status report provides an update of milestone accomplishments since submittal of the Overall Integrated Plan, and an update of the pending and open/confirmatory actions.

2 Milestone Accomplishments

The following milestones have been completed since the submittal of the Overall Integrated Plan:

- Submit first 6 month status report.
- Submit second 6 month status report.
- Submit third 6 month status report.
- Submit fourth 6 month status report.
- Submit fifth 6 month status report.
- Prepare engineering change package for RCP low leakage seals.
- Develop required training for station staff based upon draft procedure changes and engineering change packages.
- Procure SEPS/portable equipment refueling trailer.

3 Milestone Schedule Status

The following provides an update to Attachment 2 of the Seabrook Overall Integrated Plan (OIP) (Reference 1). The table includes the current status of each item and whether the expected completion date has changed. As noted in the original station submittal these dates are planning dates which are subject to change as design and implementation details are developed.

The following milestone target completion dates have been adjusted or added:

In the original submittal of the OIP in February 2013, NextEra Energy Seabrook included Westinghouse SHIELD® low leakage Reactor Coolant Pump (RCP) seals in all 4 RCPs as a backup strategy against significant Reactor Coolant System (RCS) leakage to Containment. The revised Integrated Plan credits the replacement of all 4 RCP seals with the SHIELD® seal technology in October 2015 during refueling outage 17. The original OIP included a missile shield for the Supplemental Emergency Power System (SEPS). While SEPS remains NextEra Energy Seabrook's primary strategy during all events with the exception of a wind-driven missile event, the missile shield is being deleted in the revised OIP. NextEra Energy Seabrook

will employ a full set of portable FLEX equipment protected from all hazards for events in which SEPS is not available. Revised milestone target completion dates do not currently support NextEra Energy Seabrook's full compliance date. NextEra Energy Seabrook has requested that the full compliance date be extended from November 2015 to May 30, 2016.

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Submit Overall Integrated Implementation Plan	February 2013	Complete	N/A
Submit 6 Month Updates:			
Update 1	Aug 2013	Complete	N/A
Update 2	Feb 2014	Complete	N/A
Update 3	Aug 2014	Complete	N/A
Update 4	Feb 2015	Complete	N/A
Update 5	Aug 2015	Complete	N/A
Update 6	Feb 2016	Not Started	N/A
Prepare engineering change packages for SEPS missile barrier	December 2014	Cancelled	N/A
Prepare engineering change package for RCP low leakage seals	December 2014	Complete	N/A
Prepare bid for construction of SEPS missile barrier	March 2015	Cancelled	N/A
Install RCP shutdown seals in four pumps in refueling outage #17	April 2014	Contract for RCP low leakage seals awarded	October 2015
Construct SEPS missile barrier	December 2014	Cancelled	N/A
Revise / develop procedures based upon approved strategies and engineering implementation	December 2014	Working	October 2015

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
packages			
Develop required training for station staff based upon draft procedure changes and engineering change packages.	December 2014	Complete	N/A
Procure SEPS / portable equipment refueling trailer	December 2014	Complete	N/A
Submit 4 th 6-month status report to NRC	February 2015	Complete	N/A
Develop PMs for refueling trailer	March 2015	Working	October 2015
Store refueling trailer in Service Water Pump house	June 2015	On Hold	March 2016
Off-site resources implementation site – RRC operational fall 2015	June 2015	Working	October 2015
5 th 6-month status report to NRC	August 2015	Complete	N/A
Conduct walkthroughs / demonstrations of portable equipment connection points	August 2015	Working	October 2015
Implement training for station staff	September 2015	Working	N/A
Final implementation – Order full compliance letter to NRC	November 2015	Not Started	May 2016

4 Changes to Compliance Method

NextEra Energy Seabrook has received feedback in the form of NRC audit questions and subsequent teleconferences with NRC Staff reviewers. The NRC's Interim Staff Evaluation (ISE) was also received. A revised Integrated Plan and list of pending actions was uploaded to ePortal for NRC staff review on February 6, 2015. The onsite NRC FLEX audit was conducted the week of July 27, 2015. Items were reviewed by NRC Staff reviewers, audit questions responded to, and Staff Evaluation items closed or statused as open/pending.

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

On July 23, 2015, NextEra Energy Seabrook submitted Reference 10 requesting schedule relaxation from the Order requirements for completion of full implementation from November 2015 to May 30, 2016. The request for relaxation was based on the development of a second set of strategies. These strategies were submitted in Reference 9. The request for schedule relaxation will allow more than the current 9 months allowed in the existing schedule to implement the new strategies.

6 Open Items from Overall Integrated Plan and NRC Interim Staff Evaluation /TER

The following Table provides a summary of the Pending Items documented in the Overall Integrated Plan:

	Overall Integrated Plan Pending Actions	Status
1	Revise ECA-0.0 to include steps to transition to FLEX Support Guidelines (FSGs) when an extended loss of offsite power event is in progress. This determination will delineate future procedural strategies and transitions.	In Progress
2	Develop FSG-0.0 attachments to include a SEPS load reduction method for an extended loss of offsite power event to control SEPS loading within the capacity of one engine.	Complete. FSG-0.0 Attachments A and B provide for maintaining loads within the capacity of one SEPS engine.
3	A seismic evaluation will be conducted on the connections that penetrate the upper half of the Condensate Storage Tank (CST) to determine if NextEra Energy Seabrook can take credit for the entire tank volume for Phase 1 & 2 event coping.	Complete, no credit will be taken for the non-seismic volume in the CST.
4	Develop FSG-0.0 to add a step to manually shutdown the motor-driven Emergency Feedwater (EFW) pump if the Turbine Driven (TD)EFW pump is running satisfactorily.	Complete

	Overall Integrated Plan Pending Actions	Status
5	Add an Attachment to ES-0.2, ES-0.3 and ES-0.4 that provides a table of electrical loads for responding to an extended loss of offsite power event.	Complete
6	Develop a SEPS generator set (genset) refueling strategy from 1) an offsite supplier outside a 25 mile radius from the station (primary strategy), and 2) the Emergency Diesel Generator (EDG) fuel oil storage tanks using a refueling trailer stored in the Service Water (SW) Pumphouse (backup strategy). This strategy will include provisions for refueling within 24 hours in the event that only a single SEPS is functional.	In Progress. FSG-5 provides refueling strategies, offsite supplier contract is in progress.
7	Develop FSG-5 and FSG-5.1 to include a step for implementation of a SEPS genset refueling strategy.	Complete. FSG-5.1.1
8	Develop a FSG for refueling SEPS from the EDG fuel oil storage tanks using a portable refueling trailer. Utilize the information contained in existing procedure OS1061.02, 'Receipt of SEPS Fuel Oil', for development of the FSG.	Complete. FSG-5.1.1
9	Develop FSG-5 to include direction for connecting the backup diesel-driven air compressor to the Service Air system to restore Instrument Air system pressure.	Complete. FSG-5 step 24
10	Develop required preventive maintenance actions and surveillance test procedures for the refueling trailer to be procured and stored in the SW Pumphouse.	In Progress
11	Revise AOPs to include transitions to FSG-11 and FSG-14 when Extended Loss of all AC Power (ELAP) is in progress for shutdown mode strategies.	In Progress
12	Conduct an engineering evaluation to determine if the existing hurricane enclosures for the SEPS gensets provide adequate missile protection. If protection is not adequate, develop a design change (EC) to add missile protection for the SEPS gensets.	Complete. SEPS missile protection will not be added. Other missile protected strategies are being added

	Overall Integrated Plan Pending Actions	Status
13	Evaluate the 'seismic robustness' of SEPS and determine if enhancements are needed with respect to the new Ground Motion Response Spectrum (GMRS) data for the site.	Complete. EC 282774 Fukushima SEPS Foundations and Exhaust Seismic Upgrade and EC 282825 Fukushima SEPS components Seismic Upgrades.
14	Once the site flooding re-evaluation is completed in accordance with Recommendation 2.1 of the RFI letter, determine if additional flood protection is necessary for SEPS.	In Progress. Extension granted by NRC for completion of analysis by 9/30/15.
15	Formalize the Engineering assessment of ELAP load capacity for a single SEPS genset and modify procedural guidance in the applicable Emergency Operating Procedures (EOPs) and FSGs, as necessary.	Complete. FSG-4 and FSG-4.1
16	Evaluate SEPS snow removal plan and revise the plan as necessary.	Complete. SEPS missile protection will not be added.
17	Determine if a quantity of diesel fuel will be provided from the National SAFER Response Centers (NSRCs) along with requested Phase 3 portable equipment. If not, establish a contract with a fuel supplier outside a 25 mile radius from the plant to provide fuel within 48 hours of a Beyond Design Basis External Event (BDBEE).	In Progress. Contract bids pending for a fuel contract with supplier outside the 25 mile radius.
18	Develop a FSG for staging and deployment of Phase 3 equipment from the RRCs into the Protected Area (PA).	Complete. FSG-5.1
19	Develop a FSG for connecting the two 1MW generators from the NSRC to 4.16 KV Emergency Buses E5 and E6 and a 1MW generator from the NSRC to 480V Buses E53 and E63.	Complete. FSG-5.1
20	Develop a FSG for refueling the NSRC generators or incorporate this action into the SEPS refueling FSG.	Complete. FSG-5.1
21	Install low leakage RCP seals on all four RCPs to minimize RCS leakage into Containment.	In Progress. All four seals are planned to be replaced with the low leakage

	Overall Integrated Plan Pending Actions	Status
		seal design in October 2015.
22	Based on PWROG guidance, determine if new FSGs are required that incorporate the existing guidance provided in SAG-1, 'Inject to the SGs', and SAG-3, 'Inject to the RCS' or whether transition points to these two Severe Accident Management Guidelines (SAMGs) should be added to the applicable EOPs.	Complete, new FSGs are being developed for Steam Generator (SG) and RCS injection in the event SEPS is unavailable using alternate FLEX RCS makeup connections.
23	Develop a method for obtaining local readings for the 12 critical parameters identified in the Integrated Plan and include in site procedures as appropriate.	Complete. FSG-7 and FSG-7.1.1
24	Develop Westinghouse FSGs to support ELAP strategies with SEPS unavailable.	Complete. FSG-0.1 directs the response to ELAP with SEPS unavailable.
25	Develop EC to use existing below grade Unit 2 Circulating Water (CW) abandoned piping section as a holding tank for credited makeup in SG injection strategies.	Complete. EC 282982 modifies the below grade unit 2 Circ water piping to be used as a cistern for injection water.
26	Perform analysis to qualify Unit 2 CW piping as a credited makeup source in seismic and missile related events	Complete. Documented in EC 282982 Fukushima FLEX Unit 2 CW Pipe Water Storage.
27	Perform analysis for containment pressure & temperature response after installation of RCP shutdown seals to ensure containment integrity is not challenged without containment cooling.	Complete. C-X-1-28141 Containment Response During ELAP - Gothic
28	Perform analysis for SG feedwater quality requirements to ensure continued SG heat sink capability for 72 hours following loss of AC power.	Complete. C-X-1-20720-CALC, S/G Water Quality Analysis Through 72 Hours
29	Perform analysis for RCS boration and cooldown strategies to support FSG development	Complete. CN-SEE-II-15-3-Revision 1
30	Complete SG, Spent Fuel Pool (SFP), and RCS makeup hydraulic analysis for FLEX strategies in modes 1-6.	Complete. C-X-1-20718-CALC Diverse and Flexible Coping Strategy Hydraulic Analysis
31	Complete FSG setpoint calculations and basis.	In Progress

	Overall Integrated Plan Pending Actions	Status
32	Complete FLEX equipment storage building analysis and develop EC for SW pumphouse building mods.	Complete. EC 282582 FLEX Portable Equipment Storage.
33	Complete site flooding analysis and add any interim actions to OS1200.03, Severe Weather Conditions.	In Progress. Extension granted by NRC for completion of analysis by 9/30/15.
34	Procure site FLEX portable equipment to augment Seabrook BDBEE response strategies.	In Progress
35	Complete ECs for plant system FLEX connections for Fire Tanks, EFW pumphouse, Demineralized Water Storage Tanks (DWSTs), and Positive Displacement Charging pump.	Complete. EC 282580
36	Complete Analysis for > 8 hrs heat removal using CST.	Complete. C-X-1-20719-CALC Determination of Water Inventory Required for RCS Heat Removal During ELAP
37	Revise the NextEra Energy Nuclear Training Program to assure personnel proficiency in the mitigation of BDBEE is adequate and maintained.	Complete
38	Complete the travel route soil liquefaction study.	In Progress
39	Modify the SWPH entrance with a new Barrier I missile door to allow for rapid deployment with missile protection.	In Progress

7 Interim Staff Evaluation Open/Confirmatory Item Status

Open/Confirmatory Item	Status
3.2.4.8.A Verify that the enclosure for the SEPS DGs and switchgear SEPS-SWG-1 provides sufficient protection of the equipment from seismic events and wind driven missiles.	Closed

<p>3.1.1.1.A Protection of FLEX equipment from seismic and high wind hazards – Confirm that the PDDPs and hose trailers will be adequately protected from seismic and high wind hazards.</p>	<p>Closed</p>
<p>3.1.1.2.A Confirm that at least one connection point for each use of a PDDP is protected from a seismic event (includes access to the connection point and areas the operators have to access to deploy or control the PDDP).</p>	<p>Open</p>
<p>3.1.1.2.B Confirm that a tow vehicle for FLEX equipment movement is reasonably protected from a seismic event, flooding event, and high wind event.</p>	<p>Closed</p>
<p>3.1.1.3.A Procedural interface for seismic hazards -Confirm that operators have procedural guidance and references for the methods of obtaining local readings for critical parameters to support the implementation of the coping strategy, consistent with the guidelines in Section 3.2.1.10 of NEI 12-06.</p>	<p>Closed</p>
<p>3.1.1.4.A Off-Site Resources – Confirm the location of the local staging area for the RRC equipment, and that access routes to the site, the method of transportation, and the drop off area have been properly evaluated for all applicable hazards.</p>	<p>Closed</p>
<p>3.1.5 High temperature – Confirm that the effects of high temperature have been considered in the procurement, protection, and deployment of FLEX equipment.</p>	<p>Closed</p>
<p>3.2.1.7.A Confirm that portable FLEX equipment is included in the licensee’s program to maintain equipment available for deployment in shutdown and refueling modes.</p>	<p>Closed</p>

<p>3.2.1.9.A Use of portable pumps – Confirm that appropriate procedural guidance is provided for operation of the PDDPs for SG and RCS injection as part of the FLEX strategies.</p>	<p>Closed</p>
<p>3.2.1.9.B Confirm availability of the fire main to provide a suction source for the PDDP for all of the hazards applicable to Seabrook.</p>	<p>Closed</p>
<p>3.2.2.A Confirm that the PDDPs and hose trailers are incorporated into the FLEX guidelines for makeup and spray to the SFP.</p>	<p>Closed</p>
<p>3.2.4.4.A Confirm that adequate portable lighting is available for operator use during an ELAP event.</p>	<p>Closed</p>
<p>3.2.4.4.B The NRC staff has reviewed the licensee communications assessment (ADAMS Accession Nos. ML 12311A34 and ML 13060A048) and has determined that the assessment and planned upgrades are reasonable (ADAMS Accession No. ML 13102A254). Confirm that the upgrades have been completed.</p>	<p>Closed</p>
<p>3.2.4.7.A Confirm the source of water to be used for makeup to the service water cooling basin tower by the portable diesel-driven cooling tower makeup pump.</p>	<p>Closed</p>
<p>3.2.4.8.B Confirm that any SEPS missile barrier modifications do not interfere with the ability to remove snow from the SEPS DGs air intake system.</p>	<p>Closed</p>
<p>3.2.4.9.A Confirm that the refueling strategy for SEPS has been changed to require refueling to begin within 24 hours of the event.</p>	<p>Closed</p>
<p>3.3.1.A Confirm that the PDDPs will be included in the maintenance and testing (M&T) program in conformance with the Electric Power Research Institute report on M&T.</p>	<p>Closed</p>

3.3.2.A Confirm that the configuration control of FLEX strategies conforms to the guidance of Section 11.8 of NEI 12-06.	Closed
3.4.A Offsite resources - Confirm that NEI 12-06, Section 12.2 guidelines 2 through 10, regarding minimum capabilities for offsite resources, have been adequately addressed.	Closed