



June 22, 2016

NRC 2016-0028  
10 CFR 50.54(f)

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

Point Beach Nuclear Plant, Units 1 and 2  
Docket 50-266 and 50-301  
Renewed License Nos. DPR-24 and DPR-27

NextEra Energy Point Beach, LLC, Response to Interim Staff Evaluation Open and Confirmatory Items for Order EA-12-049 Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

References:

- (1) NRC Order Number EA-12-049, Order To Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, dated March 12, 2012 (ML12054A735)
- (2) Point Beach Nuclear Plant, Unit 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) dated January 27, 2014 (TAC Nos. MF0725 and MF0726) (ML13338A510)
- (3) NextEra Energy Point Beach, 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), dated August 28, 2015 (ML15240A028)
- (4) NextEra Energy Point Beach, LLC's Notification of Full Compliance with Order EA-12-049 Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events and Submittal of Final Integrated Plan, dated December 16, 2015 (ML15350A085)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an Order (Reference 1) to NextEra Energy Point Beach, LLC (NextEra). Reference 1 was immediately effective and directed NextEra 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 were outlined in Attachment 2 of Reference 1.

By letter dated January 27, 2014 (Reference 2), NRC issued an Interim Staff Evaluation relating to NextEra's Overall Integrated Plan in response to Order EA-12-049. The Interim Staff Evaluation contained three Open Items and 29 Confirmatory Items. An onsite audit was conducted by NRC Nuclear Reactor Regulation (NRR) staff the week of June 8 – 12, 2015. The Open and Confirmatory Items were reviewed during the audit. By letter dated December 16,

2015 (Reference 4), NextEra notified NRC of compliance with Order EA-12-049. In response to a NRR staff request, this letter provides reference to the docketed resolution of the Open and Confirmatory Items and provides updates where necessary.

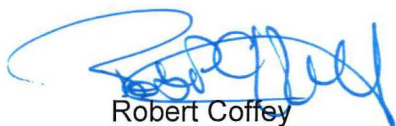
This letter contains no new regulatory commitments.

If you have any questions please contact Mr. Bryan Woyak, Licensing Manager, at 920/755-7599.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 22, 2016.

Very truly yours,

NextEra Energy Point Beach, LLC



Robert Coffey  
Site Vice President

Enclosure

cc: Director, Office of Nuclear Reactor Regulation  
Administrator, Region III, USNRC  
Resident Inspector, Point Beach Nuclear Plant, USNRC  
Project Manager, Point Beach Nuclear Plant, USNRC  
J. Paige, Project Manager, Japan Lessons-Learned Division, USNRC

**ENCLOSURE**

**NEXTERA ENERGY POINT BEACH, LLC**

**OPEN AND CONFIRMATORY ITEMS RESOLUTION  
FROM THE INTERIM STAFF EVALUATION  
RELATING TO NEXTERA'S OVERALL INTEGRATED PLAN  
IN RESPONSE TO ORDER EA-12-049**

10 Pages Follow

### **NRC Interim Staff Evaluation Open Items**

There were three Open Items documented in the Interim Staff Evaluation report:

ITEM	OPEN ITEM DESCRIPTION
3.2.1.1.B	The licensee needs to complete an acceptable analysis for the RCS inventory and core cooling strategy. The licensee has not finalized what thermal-hydraulic code and evaluation model will be used for the analysis.
3.2.1.2.C	The licensee needs to perform the RCS analysis and demonstrate the acceptability of the analytical modeling for the RCP seal leakage, including modeling the leak area, computing the leakage flow, two-phase leakage modeling, and the pressure dependence of the leak rate.
3.2.1.8.A	Confirm resolution of the generic concern associated with the modeling of the timing and uniformity of the mixing of a liquid boric acid solution injected into the reactor coolant system under natural circulation conditions potentially involving two-phase flow.

Completion documentation for all three Open Items was provided in the Fifth Six-Month Status Report dated August 28, 2015 (Reference 2).

### **NRC Interim Staff Evaluation Confirmatory Items**

The following table provides a list of the Confirmatory Items and their resolution. Updated information is provided for select items.

ITEM	CONFIRMATORY ITEM DESCRIPTION	RESPONSE
3.1.1.1.A	Protection of FLEX Equipment – Confirmation of the final design and location of new structures or modification of existing structures for the storage and protection of FLEX equipment against all applicable external hazards is needed.	A final response describing the FLEX equipment storage building and analysis was provided in the Fifth Six-Month Status Report (Reference 2), and in the Final Integrated Plan (Reference 3), Section 3.6.
3.1.1.2.A	The licensee should confirm that there is at least one connection point for FLEX equipment requiring access via routes only through seismically robust structures.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).

3.1.1.3.A	The licensee needs to provide guidance to operators for critical actions to perform until alternate indications can be connected and for controlling critical equipment without associated control power.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.1.1.4.A	Confirm the location of the receiving area for offsite resources, and identify the methods to be used to deliver equipment from the receiving area to the site staging area.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). The Site SAFER Playbook, EPG 2.0 (Reference 17), was issued on September 28, 2015.
3.1.2.2.A	Confirm that connection points for portable equipment are protected from flooding.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.1.3.2.A	The licensee needs to identify debris removal equipment needed for Phase 2 following a high wind event. (The licensee plans to complete an assessment in the first quarter of 2014.)	<p>The Point Beach Nuclear Plant FLEX Equipment Deployment Position Paper (Reference 5) for debris removal and impact on deployment was issued March 11, 2014. Debris removal activities are addressed in FSG-5.2, "FLEX Equipment Staging" (Reference 6).</p> <p>A CAT 950K wheel loader is the primary piece of equipment for debris removal. Backup equipment includes a Ford F350 tow vehicle equipped with a snow plow and a John Deere tractor with a front end loader.</p> <p>The F350 tow vehicle is located in the fully protected north half of the FLEX Storage Building. The CAT 950K wheel loader is located in the south half of the FLEX Storage Building. This area is not fully missile protected but provides substantial protection. The FLEX Storage Building is located on the north side of the plant.</p> <p>The John Deere tractor with a front end loader is stored on the south side of the plant at least 1800 feet (600 yards) from the CAT 950K storage location. The separation distance is based on FSAR Section 2.6, Meteorology, which documents a local tornado causing significant damage as having a path 600</p>

		yards wide. By comparison, the National Oceanic and Atmospheric Administration (NOAA) website lists the average tornado width for Green Bay, Wisconsin, as 121 yards. Tornado paths typically move from west to east which is perpendicular to the storage locations and the 600 yards (minimum) separation distance.
3.1.4.2.A	The licensee needs to identify the necessary equipment for the removal of snow and ice to ensure that FLEX equipment can be transported from storage to its location for deployment.	The Point Beach Nuclear Plant FLEX Equipment Deployment Position Paper (Reference 5) for debris removal and impact on deployment was issued March 11, 2014. The Cat 950K wheel loader procured for FLEX can be used for snow and ice removal. The John Deere tractor with a front end loader that is the backup to the Cat 950K is located on the south side of the plant and is also available for snow removal. The F350 deployment vehicle stored in the FLEX Storage Building is equipped with a snow plow. In addition, the site has other tractors with front end loaders and trucks with snow plows on site for snow removal that could be used as additional backups. Control of the primary (Cat 950K) and designated backup (John Deere tractor) debris/snow/ice removal equipment has been established.
3.2.1.A	In light of the potential for consequential damage to the atmospheric dump valves (ADV), the licensee should complete the analysis of the ELAP scenario with an asymmetric cooldown and demonstrate acceptable results and/or otherwise demonstrate the acceptability of using a single-loop cooldown strategy for ELAP mitigation.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.2.1.1.A	Reliance on the NOTRUMP code (or other thermal-hydraulic code) for the ELAP analysis of Westinghouse plants is limited to the flow conditions before reflux condensation initiates. This includes specifying an acceptable definition for reflux	The NOTRUMP computer code was used to develop the thermal-hydraulic evaluations. This application utilizes the methods and guidance as well as the restrictions and limitations specified in PWROG-14064-P, Revision 0 (Reference 7). The incorporation of low

	<p>condensation cooling. The licensee should confirm the applicability of this approach for PBNP.</p>	<p>leakage RCP seals does not challenge the timeline relating to RCS makeup pump timing and reflux condensation initiation and is evaluated in the plant specific analysis (Reference 8). This plant-specific NOTRUMP analysis (Reference 8) showed that the flow conditions remain single phase and the RCS does not enter a reflux cooling period. RCS conditions remain below the limit for reflux condensation cooling (one hour centered moving average of flow quality less than 0.1 at steam generator U-tube bend). The analysis demonstrated that the FLEX RCS makeup pump is being implemented prior to the loop flow rate decreasing below the loop flow rate corresponding to the definition of the onset of reflux condensation.</p>
3.2.1.2.A	<p>Qualification testing should be completed demonstrating a maximum seal leakage rate no greater than 1 gpm/pump for the SHIELD® low-leakage seal design under ELAP conditions. This qualification and the resulting leakage rate should be shown applicable to the RCP design at PBNP. The information provided should address the impacts of the Westinghouse 10 CFR Part 21 report, "Notification of the Potential Existence of Defects Pursuant to 10 CFR Part 21," dated July 26, 2013 (ML13211A168), on the use of the low seal leakage rate in the ELAP analysis.</p>	<p>As reported in the Final Integrated Plan (Reference 3), Point Beach installed the Westinghouse SHIELD® Passive Thermal Shutdown Seal (SDS) Generation III in both Units. Unit 1 seal replacement was performed in Fall 2014 and Unit 2 seal replacement was performed during the Fall 2015 outage. Additional information related to qualification of the seals was provided in the August 28, 2015, Fifth Six-Month Status Report (Reference 2).</p>
3.2.1.2.B	<p>RCP seals - If the seals are changed to the newly designed Generation III SHIELD® seals, or non-Westinghouse seals, the acceptability of the use of the newly designed Generation III SHIELD® seals, or non-Westinghouse seals should be addressed, and the RCP seal leakages rates for use in the ELAP analysis should be provided with acceptable justification.</p>	<p>A final response was provided in the Fifth Six-Month Status Report (Reference 2). See also Confirmatory Item 3.2.1.2.A.</p>

3.2.1.2.D	The licensee needs to address whether the restoration of cooling to the SHIELD® seals would be attempted and, if so, demonstrate that thermal shock from restoration of seal cooling would not adversely affect the RCP SHIELD® seals planned for installation at Point Beach.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.2.1.5.A	The licensee needs to complete the GOTHIC® analysis to determine the containment conditions expected during an ELAP event with low leakage RCP seals.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). See also Mitigating Strategies Audit Report (Reference 4).
3.2.1.6.A	Confirm resolution of Integrated Plan statement that a CST volume is adequate to support decay heat removal for 1 hour 20 minutes and an audit response that states it is adequate for approximately 1.9 hours.	One hour 53 minutes (1.88 hours) of core cooling are available using the CST volume and with the SG volume above the 5 foot level. Refer to the Final Integrated Plan (Reference 3), Section 3.2.1.1, Phase 1 Strategy. Establishment of Service Water flow to the turbine driven auxiliary feedwater pump was validated as occurring within 1.75 hours; refer to the Final Integrated Plan (Reference 3), Attachment A, Action Item 15.
3.2.1.6.B	Confirm that the methodology in Attachment 1 of the PWROG Core Cooling Interim Position Paper was properly utilized to determine the 200 psig constraint for accumulator isolation.	The original primary Point Beach strategy was to isolate the accumulators before initiating a cooldown to eliminate any potential of injecting nitrogen into the RCS. The strategy was altered to maintain the accumulators available during the cooldown for RCS makeup, if required, consistent with PWROG guidance. Point Beach will not initiate a cooldown until RCS makeup via the portable diesel charging pump is available and the means for isolating the accumulators (via a portable diesel generator) has been established. Calculations have been performed following the PWROG Core Cooling Interim Position Paper to establish the setpoints related to the footnotes identified in the PWROG generic FLEX Support Guidelines. There are 10 generic footnotes that impacted ECA 0.0, as well as the FLEX Support Guidelines. Specifically, ERG footnote O.11, "Minimum SG pressure which

		<p>prevents injection of accumulator nitrogen into the RCS, plus allowances for normal channel accuracy," has been incorporated. Point Beach procedures ECA-0.0 Unit 1 (Unit 2), "Loss of All AC Power," have a caution to maintain SG pressure greater than 190 psig to prevent injection of accumulator nitrogen into the RCS. The procedure contains steps to maintain SG pressure at 290 psig. The applicable setpoints per calculation 2010-0020 (Reference 10) are H.7, H.8 and H.15. Their setpoints are 280 psig, 380 psig and 320 psig, respectively. ECA-0.0 Unit 1 (Unit 2) has been revised.</p> <p>The accumulator isolation valves are remote operated MOVs. They will be shut from the control room when the portable diesel generator is connected to the 480V safeguards bus or directly to the motor control center. As a backup plan, the cooldown can be delayed until necessary repairs are made or the cooldown can be stopped at the SG setpoint that prevents nitrogen injection and hold at that condition until repairs are complete or containment entry is possible.</p>
3.2.1.8.B	The Licensee needs to complete the motive force calculation for the TDAFW pump and demonstrate that it will be capable of performing its function at the point depressurization is terminated as identified in the integrated plan.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.2.1.9.A	The Integrated Plan indicates use of additional B.5.b pumps as FLEX pumps; however it does not describe their capacity, qualification, protection, and deployment.	<p>A final response was provided in the Fifth Six-Month Status Report (Reference 2). Additionally, a description of the FLEX pumps is provided in the Final Integrated Plan (Reference 3), Section 3.2.2.5, Flex Pumps and Water Supplies.</p> <p>Use of the FLEX pumps has been addressed in the FLEX Support Guidelines.</p>

3.2.1.9.B	The licensee should verify that the final design of the portable diesel-driven charging pump (PDCP) to be used for RCS boron addition and makeup meets the performance criteria (flow rate, pressure, elevation) and that it is compatible with other FLEX equipment (hoses, fittings, etc.).	As indicated in the Final Integrated Plan, Section 3.2.2.5.2, the PDCP is a low capacity, high pressure pump capable of delivering 15 gpm at approximately 2000 psig. This is adequate pressure to overcome line losses and the approximate 1500 psig RCS pressure. The pump has the ability to provide flow at a discharge pressure as high as 2500 psig. Documentation of adequate capacity is included in the Unit 1 and Unit 2 Fukushima FLEX strategy implementation modification, EC 279879 (Reference 11), and calculation 2013-12974 (Reference 12). Pump deployment and hose connections are addressed by FSG-5.4, FLEX Pump Operations (Reference 18). FSG-8, Alternate RCS Boration (Reference 19), provides instructions to maintain RCS pressure below 2235 psig (2250 psia) which meets the Condition 3 RCS pressure requirement in NRC letter ML14132A128 (Reference 13). This may extend the BAST and RWST boration periods determined in the NOTRUMP analysis. It does not affect the overall strategy since boration and cooldown is not a time constraint.
3.2.2.A	The licensee needs to complete analysis to demonstrate the adequacy of the PAB environment for equipment and personnel access with the SFP boiling.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). See also Mitigating Strategies Audit Report (Reference 4).
3.2.4.2.A	The Integrated Plan does not address heat up under worst case conditions. The licensee needs to confirm temperatures in vital areas will be maintained below the design temperatures for installed and portable equipment relied upon in an ELAP/LUHS scenario, or alternatively, qualify electrical components for more severe temperatures.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). See also Mitigating Strategies Audit Report (Reference 4).

3.2.4.4.A	The NRC staff has reviewed the licensee communications assessment (ML12305A538 and ML13053A400) and has determined that the assessment for communications is reasonable. Confirmation is required to demonstrate that upgrades to the site's communications systems have been completed.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). One communications item remained open at that time, implementation of a FLEX Phase 2 portable diesel generator (PDG) to power battery chargers for the existing installed batteries that supply power to the radio system, PBX phone system and Gai-Tronics system within the station power block, including training and procedure updates for the PDG use. Two 480V PDGs were procured and are stored in the FLEX Storage Building; refer to the Final Integrated Plan, Section 3.2.2.6, Electrical Analyses. Use of the PDG to power communication systems is addressed by FSG-5.3, FLEX Electrical Operations (Reference 14), and training has been completed (Reference 3, Section 3.12.2).
3.2.4.5.A	The Integrated Plan does not identify whether personnel access may be adversely affected by the loss of the preferred or Class 1E power supplies in an ELAP. The licensee should identify whether access may be affected, and if so, identify any additional actions necessary to ensure that operators have access to areas where manual actions are specified in ELAP response procedures/guidance.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.2.4.6.A	Confirm the revision or development of procedures regarding temporary ventilation for vital areas to address habitability and accessibility under ELAP conditions.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). See also Mitigating Strategies Audit Report (Reference 4).
3.2.4.6.B	Confirm the development of FSGs to provide guidance to evaluate work area conditions and long term habitability, which specify actions required to address elevated temperatures and extreme cold air temperatures.	A final response was provided in the Fifth Six-Month Status Report (Reference 2). See also Mitigating Strategies Audit Report (Reference 4).

3.2.4.6.C	Confirm development of procedures and guidance to address human performance aids (installation sketches that include identification of connection points and the suggested layout of hoses, cables and portable equipment; additional equipment marking), to ensure successful completion of the FLEX strategies.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.2.4.8.A	Need to confirm that appropriately sized FLEX DGs are procured.	A final response was provided in the Fifth Six-Month Status Report (Reference 2).
3.2.4.10.A	The licensee needs to complete final load shedding evaluations on each of the four battery distribution systems.	Refer to the Fifth Six-Month Status Report (Reference 2) and FSG-4, ELAP DC Bus Load Shed/Management (Reference 9), for the load shedding strategy. Implementation of the load shed strategy and PDG deployment are addressed in the Final Integrated Plan (Reference 3), Attachment A, Sequence of Events Timeline.
3.3.1.A	The licensee has not determined the exact capacity of new FLEX equipment and thus does not know if it is capable of supplying one or two units. This information is required to determine if two or three of a particular item are required to meet the N+1 criteria of NEI 12-06.	Completion documentation was provided in the Fifth Six-Month Status Report, dated August 28, 2015 (Reference 2). The list of portable equipment and the N+1 requirements were incorporated into the FLEX program document, NP 7.7.36, Diverse and Flexible Coping Strategies (FLEX) Program (Reference 15), and Operations Manual, OM 3.42, Control of WR SFP Level Instrumentation and Credited FLEX Equipment (Reference 16).
3.4.A	Offsite Resources - Confirm NEI 12-06 Section 12.2 Guidelines 2 through 10 are covered in the arrangements with SAFER for offsite resources.	Completion documentation was provided in the Fifth Six-Month Status Report (Reference 2). The Site SAFER Playbook, EPG 2.0 (Reference 17), was issued on September 28, 2015.

## References:

1. Point Beach Nuclear Plant, Unit 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) dated January 27, 2014 (TAC Nos. MF0725 and MF0726) (ML13338A510)
2. NextEra Energy Point Beach, 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), dated August 28, 2015 (ML15240A028)
3. Notification of Full Compliance with Order EA-12-049 Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events and Submittal of Final Integrated Plan, dated December 16, 2015 (ML15350A085)
4. Point Beach Nuclear Plant, Units 1 and 2 – Report for the Onsite Audit Regarding Implementation of Mitigating Strategies Related to Order EA-12-049 (TAC NOS. MF0725 and MF0726) (ML15208A027)
5. Point Beach Nuclear Plant FLEX Equipment Deployment Position Paper, dated March 11, 2014
6. FSG-5.2, FLEX Equipment Staging
7. Pressurized Water Reactor Owners Group Correspondence, OG-14-339, "Transmittal of PWROG-14064-P, Revision 0, Application of NOTRUMP Code Results for PWRs in Extended Loss of AC Power Circumstances, For Information Only (PA-ASC-1274), September 26, 2014 (provided on Pressurized Water Reactor Owners Group website)
8. Westinghouse Calculation CN-SEE-II-14-15, Revision 0, Point Beach Nuclear Plant RCS Makeup Boration Evaluation for a Beyond Design Basis Extended Loss of All AC Power Event, September 5, 2014
9. FSG-4, ELAP DC Bus Load Shed/Management
10. Calculation 2010-0020, Point Beach EOP SG Pressure Setpoints
11. EC 279879, Unit 2 FLEX Implementation NRC Order EA-12-049
12. Calculation 2013-12974, Evaluation of Portable Skid Pump for High Pressure RCS Makeup
13. Accession Number ML14132A128, Endorsement Letter for Westinghouse Electric Company Technical Report TR-FSE-14-1-P, Revision 1, and TR-FSE-14-1-NP, Revision 1, Use of Westinghouse Shield Passive Shutdown Seal for FLEX Strategies
14. FSG-5.3, FLEX Electrical Operations
15. NP 7.7.36, Diverse and Flexible Coping Strategies (FLEX) Program
16. Operations Manual, OM 3.42, Control of WR SFP Level Instrumentation and Credited FLEX Equipment
17. EPG 2.0, Site SAFER Playbook
18. FSG-5.4, FLEX Pump Operations
19. FSG-8, Alternate RCS Boration