NEXTera ENERGY POINT BEACH

November 30, 2016

NRC 2016-0050
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

Spent Fuel Pool Evaluation Supplemental Report, Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident

References:

1. NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012, ADAMS Accession Number ML12053A340
2. NRC Letter, Final Determination of Licensee Seismic Probabilistic Risk Assessments Under the Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendation 2.1 "Seismic" of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated October 27, 2015, ADAMS Accession Number ML15194A015
3. NEI Letter, Request for Endorsement of *Seismic Evaluation Guidance: Spent Fuel Pool Integrity Evaluation (EPRI 3002007148),* dated February 23, 2016, ADAMS Accession Number ML16055A017
4. EPRI 3002007148, Seismic Evaluation Guidance Spent Fuel Pool Integrity Evaluation, February 2016
5. NRC Letter to NEI, Endorsement of Electric Power Research Institute Report 3002007148, "Seismic Evaluation Guidance: Spent Fuel Pool Integrity Evaluation," dated March 17, 2016, ADAMS Accession Number ML15350A158
6. NextEra Energy Point Beach, LLC Seismic Hazard and Screening Report (CEUS Sites), Response NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 31, 2014, ADAMS Accession Number ML14090A275
7. NRC Letter, Point Beach Nuclear Plant, Units 1 and 2 - Staff Assessment of Information provided Pursuant to Title 10 of the *Code of Federal Regulations* Part 50, Section 50.54(f), Seismic Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task

Force Review of Insights from the Fukushima Dai-ichi Accident, dated August 3, 2015, ADAMS Accession Number ML15211A593

8. EPRI 1025287, Seismic Evaluation Guidance, Screening, Prioritization and Implementation Details [SPID] for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic, February 2013

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued a Request for Information per 10 CFR 50.54(f) (Reference 1) to all power reactor licensees. Enclosure 1, Item (9) of the 50.54(f) letter requested addressees to provide limited scope spent fuel pool (SFP) evaluations. By letter dated October 27, 2015 (Reference 2), the NRC transmitted final seismic information request tables which identified that NextEra Energy Point Beach, LLC is to conduct a limited scope SFP evaluation. By Reference 3, Nuclear Energy Institute (NEI) submitted an Electric Power Research Institute (EPRI) report entitled, Seismic Evaluation Guidance Spent Fuel Pool Integrity Evaluation (EPRI 3002007148) (Reference 4) for NRC review and endorsement. NRC endorsement was provided by Reference 5.

EPRI Report 3002007148 provides criteria for evaluating the seismic adequacy of a SFP to the reevaluated ground motion response spectrum (GMRS) hazard levels. The report supplements the guidance in the Seismic Evaluation Guidance, Screening, Prioritization and Implementation Details (SPID) (Reference 8) for plants where the GMRS peak spectral acceleration is less than or equal to 0.8g. Section 3.3 of EPRI 3002007148 lists the parameters to be verified to confirm that the results of the report are applicable to NextEra Energy Point Beach, LLC, and that the Point Beach Nuclear Plant, Units 1 and 2, SFP is seismically adequate in accordance with Near-Term Task Force (NTTF) Recommendation 2.1 seismic evaluation criteria.

The enclosure to this letter provides data for Point Beach Nuclear Plant, Units 1 and 2, that confirms applicability of the EPRI 3002007148 criteria, confirms that the Point Beach SFP is seismically adequate, and provides the requested information in response to Item (9) of the 50.54(f) letter associated with NTTF Recommendation 2.1 seismic evaluation criteria.

This letter contains no new regulatory commitments and no revision to existing regulatory commitments.

Should you have any questions regarding this submittal, 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 November 30, 2016.

Sincerely,

NextEra Energy Point Beach, LLC

Robert Coffey
Site Vice President

Enclosure: Site-Specific Spent Fuel Pool Criteria for Point Beach, Units 1 and 2

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

ENCLOSURE

NEXTERA ENERGY POINT BEACH, LLC

SITE-SPECIFIC SPENT FUEL POOL CRITERIA
FOR POINT BEACH, UNITS 1 AND 2

SITE-SPECIFIC SPENT FUEL POOL CRITERIA FOR POINT BEACH, UNITS 1 AND 2

The 50.54(f) letter requested that, in conjunction with the response to Near-Term Task Force (NTTF) Recommendation 2.1, a seismic evaluation be made of the SFP. More specifically, plants were asked to consider "all seismically induced failures that can lead to draining of the SFP." Such an evaluation would be needed for any plant in which the ground motion response spectrum (GMRS) exceeds the safe shutdown earthquake (SSE) in the 1 to 10 Hz frequency range. The staff confirmed through References 1 and 4, below, that the GMRS exceeds the SSE and concluded that a SFP evaluation is merited for the Point Beach Nuclear Plant (PBNP), Units 1 and 2. By letter dated March 17, 2016 (Reference 2), the staff determined that EPRI Report 3002007148 was an acceptable approach for performing SFP evaluations for plants where the peak spectral acceleration is less than or equal to 0.8g.

The table below lists the criteria from Section 3.3 of EPRI Report 3002007148 along with data for PBNP that confirms applicability of the EPRI Report 3002007148 criteria and confirms that the SFP is seismically adequate and can retain adequate water inventory for 72 hours in accordance with NTTF Recommendation 2.1 seismic evaluation criteria.

SFP Criteria from EPRI Report 3002007148	Site-Specific Data
Site Parameters	
1. The site-specific GMRS peak spectral acceleration at any frequency should be less than or equal to 0.8g.	The GMRS peak spectral acceleration in Reference 3, as accepted by the NRC in Reference 4, is 0.275g, which is ≤ 0.8g, therefore, this criterion is met.
Structural Parameters	
2. The structure housing the SFP should be designed using an SSE with a peak ground acceleration (PGA) of at least 0.1g.	The SFP is housed in the Primary Auxiliary Building (PAB) which is seismically designed to the site SSE with a PGA of 0.12g. The PBNP PGA is greater than 0.1g, therefore, this criterion is met.
3. The structural load path to the SFP should consist of some combination of reinforced concrete shear wall elements, reinforced concrete frame elements, post-tensioned concrete elements and/or structural steel frame elements.	The structural load path from the foundation to the SFP consists of reinforced concrete and is supported by piles in the foundation. The structural load path from the foundation to the SFP consists of reinforced concrete shear walls, therefore, this criterion is met for PBNP.
4. The SFP structure should be included in the Civil Inspection Program performed in accordance with Maintenance Rule.	The SFP structure is included in the PBNP Facilities Monitoring Program, in accordance with 10 CFR 50.65, which monitors the performance or condition of structures, systems, or components (SSCs) in a manner sufficient to provide reasonable assurance that these SSCs are capable of fulfilling their intended functions. Therefore, this criterion is met for PBNP.

SFP Criteria from EPRI Report 3002007148	Site-Specific Data
Non-Structural Parameters	
5. To confirm applicability of the piping evaluation in Section 3.2 of EPRI Report 3002007148, piping attached to the SFP up to the first valve should have been evaluated for the SSE.	As documented in Report 16Q0390-RPT-002 (Reference 9), those pipes which are connected to the SFP but not evaluated to the SSE are acceptable because the piping configuration is such that these pipes cannot cause drain down of the SFP inventory. Piping attached to the SFP and capable of draining the SFP is evaluated to the SSE as documented in Report 16Q0390-RPT-002, therefore, this criterion is met for PBNP.
6. Anti-siphoning devices should be installed on any piping that could lead to siphoning water from the SFP. In addition, for any cases where active anti-siphoning devices are attached to 2-inch or smaller piping and have extremely large extended operators, the valves should be walked down to confirm adequate lateral support.	As documented in Report 16Q0390-RPT-002 (Reference 9), the enveloping case for siphoning of the SFP inventory is for the SFP Heat Exchanger (HX) return line (10"-SFC-11-3-153). The siphoning of this line is controlled by the siphon break located at elevation 59'-8". Other lines are connected to the SFP and do not have anti-siphoning devices. However, since these lines terminate at an elevation above the termination of the siphon break for the SFP HX return line, the enveloping case for siphoning of the SFP is the siphon break of the SFP HX line. The siphoning of the SFP HX line (including the functionality of the siphon break) has been shown to be acceptable per Calculation 2005-0037 (Reference 5). As documented in Report 16Q0390-RPT-002, a check valve is present on the Reflood Condensate Pump (P-229) and Cask Dewatering Drain-Down Pump (P-223) discharge line, 2"-VA-1, which prevents siphoning in the line. As described, anti-siphoning devices are installed on all SFP piping that could lead to siphoning; therefore, this criterion is met for PBNP. As described, no anti-siphoning devices are attached to 2-inch or smaller piping with extremely large extended operators, therefore, this criterion is met for PBNP.

SFP Criteria from EPRI Report 3002007148	Site-Specific Data
7. To confirm applicability of the sloshing evaluation in Section 3.2 of EPRI Report 3002007148, the maximum SFP horizontal dimension (length or width) should be less than 125 ft, the SFP depth should be greater than 36 ft, and the GMRS peak Sa should be <0.1g at frequencies equal to or less than 0.3 Hz.	The PBNP SFP has a length of 72 ft and a width of 18.33 ft per Drawing C-160 (Reference 6). The minimum normal operating depth of 38 ft is calculated as the low level alarm elevation (62'-8" per Section 4.1 of Operating Procedure OP-8A, Reference 7) less the elevation of the bottom of the SFP (24'-8" per Drawing C-160). All dimensions are within the allowable dimensions; therefore, this criterion is met. The PBNP GMRS maximum spectral acceleration in the frequency range less than 0.3 Hz is 0.0258g from Reference 3 which is less than 0.1g, therefore, this criterion is met.
8. To confirm applicability of the evaporation loss evaluation in Section 3.2 of EPRI Report 3002007148, the SFP surface area should be greater than 500 ft^2 and the licensed reactor core thermal power should be less than 4,000 MWt per unit.	The surface area of the PBNP SFP is approximately 1288 ft^2, which is greater than 500 ft^2; and licensed reactor thermal power for PBNP is 1800 MWt per unit which is less than 4,000 MWt per unit, therefore, these criteria are met. Note that both units share a single SFP. The combined thermal power for both units is 3,600 MWt which is less than 4,000 MWt per unit.

References:

1. NRC Letter, Final Determination of Licensee Seismic Probabilistic Risk Assessments Under the Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendation 2.1 "Seismic" of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated October 27, 2015, ADAMS Accession Number ML15194A015
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5. Calculation 2005-0037, Revision 0, Spent Fuel Pool Anti-Siphon Provisions
6. Drawing C-160, Revision 10, PAB SFP Plans & Sections

7. Operating Procedure OP-8A, Revision 24, Spent Fuel Pool Cooling Water System Operation
8. PBNP Units 1 & 2 Updated Final Safety Analysis Report (UFSAR) 2014
9. Report 16Q0390-RPT-002, Revision 0, Spent Fuel Pool Evaluation for Fukushima R2.1