July 9, 2010

NRC 2010-0102
10 CFR 50.90

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

Point Beach Nuclear Plant, Units 1 and 2
Dockets No. 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

License Amendment Request 265
Revision to the Reactor Vessel Head Drop Methodology
Supplement 1

References:
(1) NextEra Energy Point Beach, LLC letter to NRC, dated June 1, 2010, License Amendment Request 265, Revision to the Reactor Vessel Head Drop Methodology (ML101520200)
(2) NRC letter to Nuclear Energy Institute, dated September 5, 2008, Safety Evaluation Regarding NEI 08-05, "Industry Initiative on Control of Heavy Loads," Revision 0 (ML082410532)
(3) NRC letter to NextEra Energy Point Beach, LLC, dated July 6, 2010, Point Beach Nuclear Plant, Units 1 and 2 - Supplemental Information Needed for Acceptance of Requested Licensing Action Re: Amendment Associated with Reactor Vessel Head Drop Methodology (TAC Nos. ME4006 and ME4007) (ML101870535)

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request 265, Revision to the Reactor Vessel Head Drop Methodology (Reference 1), pursuant to 10 CFR 50.90. The proposed amendment consists of revising the current license basis regarding a postulated reactor vessel head (RVH) drop event to conform to the NRC-endorsed guidance of Nuclear Energy Institute (NEI) 08-05 (Reference 2).

Via Reference (3), the staff of the Mechanical and Civil Engineering Branch (EMCB) determined that Reference (1) provided insufficient information with regards to the requested licensing action (RLA). Enclosure 1 provides the NextEra response to the NRC staff's acceptance review questions. Enclosure 2 provides a copy of the Westinghouse Calculation Note CN-MRCDA-08-51, Revision 1, Point Beach Units 1 and 2 Evaluation of Bottom Mounted Instrumentation (BMI) Conduits for a Postulated Closure Head Assembly Drop Event.

This letter contains no new Regulatory Commitments and no revisions to existing Regulatory Commitments.

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NRR

The information contained in this letter does not alter the no significant hazards consideration contained in Reference (1) and continues to satisfy the criteria of 10 CFR 51.22 for categorical exclusion from the requirements of an environmental assessment.

In accordance with 10 CFR 50.91, a copy of this application with enclosures is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on this day, July 9, 2010.

Very truly yours,

NextEra Energy Point Beach, LLC

Larry Meyer
Site Vice President

Enclosure/Attachment

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST 265
REVISION TO THE REACTOR VESSEL HEAD DROP METHODOLOGY
SUPPLEMENT 1

ACCEPTANCE REVIEW REQUEST

The NRC staff determined that additional information was required (Reference 1) to enable the Mechanical and Civil Engineering Branch to complete its acceptance review of License Amendment Request 265, Revision to the Reactor Vessel Head Drop Methodology (Reference 2). The following information is provided by NextEra Energy Point Beach, LLC (NextEra) in response to the NRC staff's acceptance review questions.

EMCB Supplemental Information Request 1

The LAR submitted by Point Beach relies solely on the results of a finite element analysis (FEA) performed using the commercial FEA program, ANSYS®, which demonstrated that the two bottom-mounted instrument (BMI) conduits reviewed did not rupture. However, the licensee provided insufficient information regarding the ANSYS® analyses, in order for the NRC staff to assess the validity of the analyses, as incorrect results can be produced by FEA models which have not been properly developed. The following information regarding the ANSYS® analyses should be provided, in summary form, with appropriate assumptions and justifications:

- Contour plots graphically summarizing the FEA results.
- True stress-strain material data curves used in the FEA.
- Element types used in the FEA models.
- Boundary conditions utilized in the model (see Supplemental Information Request 2).
- Preprocessor graphics displaying these pertinent details (locations and details of degrees of freedom (DOF), boundary conditions, mesh density, etc.).
- Results of any mesh convergence studies performed to demonstrate satisfactory model responses.
- Plot comparison of the spring-mass system input displacement time-histories versus the output displacement time-histories.
- General information on the type of analyses performed (i.e., confirmation that inelastic analysis was performed).

The licensee will also provide the associated Westinghouse Electric Company, LLC, calculation note (CN-MRCDA-08-51, Rev. 1).

NextEra Response

The information requested regarding the ANSYS® analyses can be located in the following sections of Westinghouse Calculation Note CN-MRCDA-08-51, Revision 1, Point Beach Units 1 and 2 Evaluation of Bottom Mounted Instrumentation (BMI) Conduits for a Postulated Closure Head Assembly Drop Event (Enclosure 2):

- Contour plots graphically summarizing the FEA results.

  For both bottom mounted instrumentation (BMI) conduits analyzed (conduit numbers 29 and 32), the maximum membrane and bending stresses were found to be at Node 1 (the point of connection between the reactor pressure vessel and the BMI conduit). The time dependent stress for conduit number 32 (limiting conduit) is depicted graphically in Figure 5-9 (Page 29). These results are with the large deflection option turned off. Additionally, the displacement plot of conduit number 32 at the time of maximum stress intensity is shown in Figure 5-14 (Page 37). Graphic plots were not generated for every permutation of input (e.g., with and without floor interaction, both conduits, with and without large deflection option turned on, etc.).

- True stress-strain material data curves used in the FEA.

  The true stress-strain material data curve used in the finite element analysis (FEA) is shown in Figure 4-6 (Page 17).

- Element types used in the FEA models.

  Section 5.1.2 (Page 23) contains a full description of the element type used in the FEA model.

- Boundary conditions utilized in the model (see Supplemental Information Request 2).

  The boundary conditions are described in Section 4.4, Item 3 (Page 13).

- Preprocessor graphics displaying these pertinent details (locations and details of degrees of freedom (DOF), boundary conditions, mesh density, etc.).

  Section 5.1, Model Documentation (Page 19), with accompanying Figures 5-1 through 5-4 (Pages 20 through 23), fully describe the modeling, including degrees of freedom (DOF), boundary conditions, mesh adequacy, etc.

- Results of any mesh convergence studies performed to demonstrate satisfactory model responses.

  As described and justified in Section 5.1.3 (Page 24), a mesh adequacy study was determined not to be necessary and was not performed.

- Plot comparison of the spring-mass system input displacement time-histories versus the output displacement time-histories.

  Figures 5-5, 5-6 and 5-7 (Pages 25, 26 and 27, respectively) show the input displacement time histories and the resulting output displacement time histories for the nodes of interest in the limiting conduit (conduit number 32).

- General information on the type of analyses performed (i.e., confirmation that inelastic analysis was performed).

  Section 4.3, Method Discussion (Page 8), and Section 4.4, Discussion of Significant Assumptions (Page 13), contain a full discussion of the type of analyses performed.

EMCB Supplemental Information Request 2

No information was provided regarding the structural integrity of the BMI conduit supports. Information should be provided regarding the behavior of these supports during the vessel head drop transient as it relates to the structural behavior of the supports during this transient. Depending on this behavior (i.e., whether the supports fail, deform, or retain elastic behavior), information should be provided indicating whether the finite element analyses are correctly configured to capture the boundary conditions resulting from the stability of the supports. Additionally, a summary of the results of the stresses found in the analysis of the conduit supports, compared with the acceptance criteria for the support stresses, should be provided.

The licensee will also emphasize that the support structures will absorb no energy caused by the accident as specified in the assumptions stated on Page 13 of CN-MRCDA-08-51, Rev. 1.

NextEra Response

The supporting structures were not analyzed for stress or deformation. By observation, these supports are robust angle iron weldments that are substantially stiffer than the conduits being supported. As discussed in Section 4.4 (Page 13) of Enclosure 2, the supports were modeled as rigid, absorb no energy, and therefore, provide conservative results for the purpose of the analysis.

References

(1) NRC letter to NextEra Energy Point Beach, LLC, dated July 6, 2010, Point Beach Nuclear Plant, Units 1 and 2 - Supplemental Information Needed for Acceptance of Requested Licensing Action Re: Amendment Associated with Reactor Vessel Head Drop Methodology (TAC Nos. ME4006 and ME4007) (ML101870535)

(2) NextEra Energy Point Beach, LLC letter to NRC, dated June 1, 2010, License Amendment Request 265, Revision to the Reactor Vessel Head Drop Methodology (ML101520200)