Attachment 3 Contains Proprietary Information
Withhold Attachment 3 from Public Disclosure in Accordance with 10 CFR 2.390

NEXTera® ENERGY
POINT BEACH

April 20, 2017

NRC 2017-0010
10 CFR 50.90

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

Point Beach Nuclear Plant, Unit 1
Docket 50-266
Renewed License Nos. DPR-24

Response to Final Request for Additional Information
Steam Generator License Amendment Request for H* Alternate Repair Criteria for Steam Generator Tube Sheet Expansion Region (CAC No. MF8218)

References: (1) NextEra Energy Point Beach, LLC, letter to NRC, dated July 29, 2016, "License Amendment Request 285" (ML16237A066)
(2) NRC e-mail to NextEra Energy Point Beach, LLC, dated February 13, 2017, "FINAL Request for Additional Information - Steam Generator License Amendment Request for H* Alternate Repair Criteria for Steam Generator Tube Sheet Expansion Region (CAC No. MF8218)" (ML17044A280)

Pursuant to the requirements of 10 CFR 50.90, NextEra Energy Point Beach, LLC, (NextEra) submitted License Amendment Request 285, (Reference 1).

The NRC Staff has determined that additional information (Reference 2) is required to complete its evaluation. The enclosure provides the NextEra response to the NRC Staff request for additional information.

Attachments 2 and 3 contain non-proprietary and proprietary versions, respectively, of the "Response to Final Requests for Additional Information" for the Point Beach Unit 1 Steam Generator License Amendment Request Submittal for H* Alternate Repair Criteria for Steam Generator Tube Sheet Expansion Region.

Attachment 3 contains information proprietary to Westinghouse Electric Company LLC, and is supported by the affidavit in Attachment 1, signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR 2.390. Accordingly, it is requested that the information that is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.390. Correspondence with respect to the copyright or proprietary aspects of the item listed above or the supporting Westinghouse Affidavit should reference CAW-17-4549 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

This letter contains no new or revised 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 April 20, 2017

Sincerely,

NextEra Energy Point Beach, LLC

Robert Coffey
Site Vice President

Enclosure – 2 pages
Attachments – 3

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

ENCLOSURE

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNIT 1

RESPONSE TO FINAL REQUEST FOR ADDITIONAL INFORMATION STEAM GENERATOR LICENSE AMENDMENT REQUEST FOR H* ALTERNATE REPAIR CRITERIA FOR STEAM GENERATOR TUBE SHEET EXPANSION REGION (CAC No. MF8218)

On January 25, 2017, the U.S. Nuclear Regulatory Commission (NRC) staff sent NextEra Energy LLC, Point Beach, the draft Request for Additional Information (RAI) provided below. This RAI relates to a license amendment request (LAR) that revises Technical Specifications (TS) 3.4.13, Reactor Coolant System (RCS) Operational Leakage; TS 5.5.8, Steam Generator (SG) Program; and TS 5.6.8, Steam Generator Tube Inspection Report, to exclude a portion of the tubes below the top of the SG tube sheet from periodic inspections and plugging.

*On February 10, 2017, the licensee subsequently informed the NRC staff that the information requested by the NRC staff was understood and not additional clarification on of the RAI was necessary. The licensee agreed to provide a response to this **final** RAI within 90 days (May 12, 2017) from the date of this correspondence. The NRC staff also informed the licensee that a publicly available version of this final RAI would be placed in the NRC's Agencywide Documents Access and Management System (ADAMS).*

By letter dated July 29, 2016 (Agencywide Document Access and Management System Accession No. ML16237A066), NextEra Energy Point Beach, LLC (the licensee), submitted a request for a license amendment in the form of changes to the Technical Specifications (TS) for Point Beach Nuclear Plant (Point Beach), Unit 1. Included with the amendment request was WCAP-18089, which is the technical support document for the requested amendment. The Nuclear Regulatory Commission (NRC) staff has the following request for additional information related to your submittal:

RAI-1
Page 4-3 of WCAP-18089

1. *The text states that the mean H* values are calculated at the worst-case sector of the tubesheet as defined in Section 6.2.3 of Reference 1 (WCAP-17091). The lower steam generator assembly model in WCAP-18089 was analyzed with an attached divider plate, since this configuration was found to have a significant effect on the value of H* due to the low temperature conditions assumed in the steam line break accident. Please discuss how the worst-case sector of the tubesheet was verified to have not changed from the previous analysis in WCAP-17091.*

RAI-1 Response

Refer to Attachment 3

RAI-2
Page 4-3 of WCAP-18089

2. *The last paragraph on page 4-3 contains a value for the H* length calculated at the critical radius of the tubesheet. The H* length shown in Table 4-4 on page 4-5 is the same as that shown on page 4-3, but the critical radius in Table 4-4 is different. Please clarify the correct values. Also, please clarify whether mean H* values were calculated for all radii in the worst-case sector of the tubesheet, or just at the five locations listed in WCAP-18089. If the H* values were only calculated at the five radii listed in WCAP-18089, please discuss how it was verified that a radius with a longer H* value does not exist.*

RAI-2 Response

Refer to Attachment 3

RAI-3
Page 8-3 of WCAP-18089

3. *The parametric approach for the leakage analysis indicated that the 11 segment lengths used for analyzing the functional relationship between loss coefficient and contact pressure were those defined by the structural model used in the original H* analysis for Point Beach, Unit 1 (WCAP-17838), which used the square-cell model. It is not clear from the report if the square-cell model was actually used for this analysis, or if just the 11 segment lengths defined in the prior analysis were used, and the actual analysis of the functional relationship between loss coefficient and contact pressure was performed using the new 3DSM. Please clarify. If the square-cell model was used for the analysis, please address the reason why the 3DSM was not used, and any differences that might be expected in the result, had the 3DSM been used.*

RAI-3 Response

Refer to Attachment 3

ATTACHMENT 1

Application for Withholding Proprietary Information from Public Disclosure CAW-17-4549

7 pages follow

Westinghouse Electric Company
1000 Westinghouse Drive
Cranberry Township, Pennsylvania 16066
USA

U.S. Nuclear Regulatory Commission
Document Control Desk
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Rockville, MD 20852

Direct tel: (412) 374-4643
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e-mail: greshaja@westinghouse.com

CAW-17-4549

April 5, 2017

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: Responses to Request for Additional Information from the Nuclear Regulatory Commission Staff (NRC) Concerning the Point Beach Unit 1 H* License Amendment Request Submittal (Proprietary)

The Application for Withholding Proprietary Information from Public Disclosure is submitted by Westinghouse Electric Company LLC ("Westinghouse"), pursuant to the provisions of paragraph (b)(1) of Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-17-4549 signed by the owner of the proprietary information, Westinghouse. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by NextEra Energy Point Beach.

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-17-4549, and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

James A. Gresham, Manager
Regulatory Compliance

CAW-17-4549

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, James A. Gresham, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse") and declare that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Executed on: 4/5/17

James A. Gresham, Manager
Regulatory Compliance

(1) I am Manager, Regulatory Compliance, Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, (e.g., by optimization or improved marketability).

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

(iii) There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, is to be received in confidence by the Commission.

(v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in LTR-SGMP-17-22 P-Attachment, "Responses to Request for Additional Information from the Nuclear Regulatory Commission Staff (NRC) Concerning the Point Beach Unit 1 H* License Amendment Request Submittal" (Proprietary), for submittal to the Commission, being transmitted by NextEra Energy Point Beach letter. The proprietary information as submitted by Westinghouse is that associated with responses to a request for additional information from the Nuclear Regulatory Commission Staff (NRC) concerning the Point Beach Unit 1 H* License Amendment Request submittal, and may be used only for that purpose.

(a) This information is part of that which will enable Westinghouse to provide technical support for licensing the alternate steam generator tube repair criteria, H*, for use at Point Beach Unit 1.

(b) Further, this information has substantial commercial value as follows:

(i) Westinghouse plans to sell the use of similar information to its customers for the purpose of providing technical support for licensing the steam generator tube alternate repair criteria, H*.

(ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.

(iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical evaluation justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and non-proprietary versions of a document, furnished to the NRC associated with responses to a request for additional information from the Nuclear Regulatory Commission Staff (NRC) concerning the Point Beach Unit 1 H* License Amendment Request submittal, and may be used only for that purpose.

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In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

ATTACHMENT 2

Responses to Request for Additional Information from the Nuclear Regulatory Commission Staff (NRC) Concerning the Point Beach Unit 1 H* License Amendment Request Submittal"
(Non-Proprietary)

15 pages follow

Westinghouse Electric Company

Responses to Request for Additional Information from the Nuclear Regulatory Commission Staff (NRC) Concerning the Point Beach Unit 1 H* License Amendment Request Submittal

April 5, 2017

Author:
Electronically Approved*
Gary W. Whiteman
Product and Plant Licensing

Verifier:
Electronically Approved*
Hermann O. Lagally
Steam Generator Management Programs

Approved:
Electronically Approved*
David P. Lytle, Manager
Steam Generator Management Programs

On July 29, 2016, NextEra Energy Point Beach, LLC, submitted a request for a license amendment in the form of changes to the Plant Technical Specifications for Point Beach Unit 1. WCAP-18089-P (Reference 1) was included as a technical support document in the amendment request. As a result of the NRC Staff review of the license amendment package, they have requested additional information (as documented in Reference 2) pertaining to WCAP-18089-P. The Westinghouse response to each information request is provided below.

On Page 4-3 of WCAP-18089:

1. The text states that the mean H* values are calculated at the worst-case sector of the tubesheet as defined in Section 6.2.3 of Reference 1 (WCAP-17091). The lower steam generator assembly model in WCAP-18089 was analyzed with an attached divider plate, since this configuration was found to have a significant effect on the value of H* due to the low temperature conditions assumed in the steam line break accident. Please discuss how the worst case sector of the tubesheet was verified to have not changed from the previous analysis in WCAP-17091.

   Response:

   Based on the **ANSYS®**[1] results, total tubesheet displacement is determined to not vary azimuthally as a function of radius from the line of symmetry in the model of the lower steam generator (SG) assembly. Therefore, the limiting H* distance remains along the line of symmetry, which is perpendicular to the tube lane at the center of the tube bundle.

   Figure 1 is a top view of the tubesheet showing sector regions for the tube displacement analysis.

[1] *ANSYS is a registered trademark of ANSYS, Inc., in the United States and/or other countries. Other names may be trademarks of their respective owners.*

a,c,e

Figure 1 Top View of Model 44F Tubesheet Showing Sector Boundaries

The 0° sector boundary is the edge of the tubesheet perpendicular to the face of the divider plate (i.e., along the symmetry plane of the tubesheet). The 45° sector boundary is the edge 45° clockwise from the symmetry plane of the SG tubesheet. The 90° sector boundary is the edge of the tubesheet perpendicular to the tubesheet symmetry plane, parallel to the divider plate face, along the edge of the tube lane.

The lower SG assembly model generates overall thermal and structural displacements under different operating conditions that are then directly imported into the three-dimensional structural model (3DSM model) for calculating the axial distribution of contact pressures within the thickness of the tubesheet. These calculated contact pressures are then used to determine the limiting H* distance for the plant.

The total tubesheet displacement results during a postulated steam line break (SLB) event at each sector boundary face for Point Beach Unit 1 are shown in Figures 2, 3, and 4 (as documented in Reference 3) as a function of tubesheet elevation (top surface of the tubesheet, 1/3 of the tubesheet thickness from the top surface of the tubesheet [ ]^{a,c,e}, 2/3 of the tubesheet thickness from the top surface of the tubesheet [ ]^{a,c,e}. The colored bands represent isobars of a range of displacements. These isobars remain essentially the same size or get slightly wider as one rotates from 0 degrees to 90 degrees. A wider isobar indicates a generally lower displacement at 90 degrees than at 0 degrees.

As can be seen from a review of these three figures, the magnitude of tubesheet displacements remain the same or decreases slightly azimuthally as you rotate clockwise from the 0° sector boundary for a given radius. At all elevations shown, both the 45° sector boundary and the 90° sector boundary (and sectors in between), have the same or slightly less magnitude of tubesheet displacements as a function of elevation from the top of the tubesheet at a given radius as the 0° sector boundary during a postulated SLB.

Specifically, referring to Figure 2, the total displacement of the top surface of the tubesheet is calculated to be between [ ]^{a,c,e} at the 0°sector, the same magnitude at the 45° sector, and slightly less (between [ ]^{a,c,e}) at the 90° sector at a radius of approximately 30 inches. Referring to Figure 3, which shows tubesheet displacements [ ]^{a,c,e} below the top of the tubesheet, the total tubesheet displacement is calculated to be between [ ]^{a,c,e} at the 0° sector, the same magnitude at the 45° sector, and, again, slightly less (between [ ]^{a,c,e}) at the 90° sector. Finally, referring to Figure 4, which shows tubesheet displacements [ ]^{a,c,e} below the top of the tubesheet, the total tubesheet displacement is calculated to be between [ ]^{a,c,e} at the 0° sector, the same magnitude at the 45° sector, and again, slightly less (between [ ]^{a,c,e}) at the 90° sector. The mean H* value calculated for a radius of [ ]^{a,c,e} is [ ]^{a,c,e} (as documented in Reference 1). Based on the similarity of displacement results, this H* distance calculated for the 0° sector would bound the H* distances for the 45° and 90° sectors for the 30 inch radius. The same result is anticipated for H* distances calculated for the 45° and 90° sectors (and in between) for all radii.

Therefore, the limiting H* distance can be expected to occur on the 0° sector boundary and would remain bounded by Figure 5 (as documented in Reference 4). The limiting radius is at [ ]^{a,c,e} from the center of the tube bundle.

a,c,e

Figure 2 Total Displacement at the Top Surface of the Tubesheet during a Postulated Steam Line Break Event

a,c,e

Figure 3 Total Displacement [ ]^{a,c,e} below the Top Surface of the Tubesheet during a Postulated Steam Line Break Event

a,c,e

Figure 4 Total Displacement [ ]^{a,c,e} below the Top Surface of the Tubesheet during a Postulated Steam Line Break Event

a,c,e

Figure 5 Point Beach Unit 1 Model 44F Tubesheet Sector Definition and Normalized H*

2. The last paragraph on page 4-3 contains a value for the H* length calculated at the critical radius of the tubesheet. The H* length shown in Table 4-4 on page 4-5 is the same as that shown on page 4-3, but the critical radius in Table 4-4 is different. Please clarify the correct values. Also, please clarify whether mean H* values were calculated for all radii in the worst case sector of the tubesheet, or just at the five locations listed in WCAP-18089. If the H* values were only calculated at the five radii listed in WCAP-18089, please discuss how it was verified that a radius with a longer H* value does not exist.

Response:

The critical radius for the limiting mean H* length of [ ]^{a,c,e} is incorrectly identified as [ ]^{a,c,e} in the last paragraph on Page 4-3 of WCAP-18089-P. The correct critical radius is [ ]^{a,c,e}.

Mean H* values were only calculated for the five radii identified in Table 4-4 of WCAP-18089-P (7.126, 28.11, 40.454, 47.861, and 51.564 inch). For clarity, the colors of the arrows in Figure 6 (as documented in Reference 3) represent isobars of a range of displacement of the tubesheet and show the direction of tubesheet displacement. The five radii evaluated in WCAP-18089-P are represented by five vertical red lines in Figure 6. As can be seen based on a review of Figure 6, the horizontal component of tubesheet displacement (i.e., x-axis projection of the overall three-dimensional tubesheet displacement vector) results in the tube resistance to tube bending component of the contact pressure and is much more significant for the peripheral tubes in the bundle (greater than the [ ]^{a,c,e} critical radius or 3rd vertical red bar from the right in Figure 6) during the low steam line break temperature transient. This translates into shorter H* distances at radii greater than the critical radius (i.e., results in a mean H* distance of [ ]^{a,c,e} at a radius of [ ]^{a,c,e} and a mean H* distance of [ ]^{a,c,e} at a radius of [ ]^{a,c,e}). In contrast, the H* distances for all radii from the center of the bundle to the critical radius of [ ]^{a,c,e} are expected to be less than [ ]^{a,c,e} for the following reasons. For all radii between [ ]^{a,c,e}, the horizontal component of tubesheet displacement is essentially nonexistent in the x-direction for all radii. Therefore, it is expected that the H* distance would be bounded by the mean H* distance calculated for the [ ]^{a,c,e} radius of [ ]^{a,c,e} because the magnitude of tubesheet displacement varies approximately the same amount throughout the thickness of the tubesheet for these radii. Again referring to Figure 6, between the radii of [ ]^{a,c,e}, the horizontal component of tubesheet displacement in the x-direction increases but a slight decrease in magnitude of tubesheet displacement occurs as a function of elevation and increasing radius, which results in a slightly shorter limiting mean H*distance of [ ]^{a,c,e} for these radii. Finally, between the radii of [ ]^{a,c,e}, the horizontal component of tubesheet displacement again increases slightly, but unlike the interval between [ ]^{a,c,e}, a greater decrease in magnitude of tubesheet displacement occurs as a function of elevation and

increasing radius, which results in a slightly longer limiting mean H*distance of [ ]^{a,c,e} for these radii.

Based on the above, the peak H* length ratios calculated as a function of radius shown in Figure 5 represent enveloping values for the different regions of the tube bundle.

a,c,e

Figure 6 Total Tubesheet Displacements during a Postulated Steam Line Break Event – Front View

On Page 8-3 of WCAP-18089:

3. The parametric approach for the leakage analysis indicated that the 11 segment lengths used for analyzing the functional relationship between loss coefficient and contact pressure were those defined by the structural model used in the original H* analysis for Point Beach, Unit 1 (WCAP-17838), which used the square-cell model. It is not clear from the report if the square-cell model was actually used for this analysis, or if just the 11 segment lengths defined in the prior analysis were used, and the actual analysis of the functional relationship between loss coefficient and contact pressure was performed using the new 3DSM. Please clarify. If the square-cell model was used for the analysis, please address the reason why the 3DSM was not used, and any differences that might be expected in the result, had the 3DSM been used.

Response:

The contact pressures used in the parametric approach for the leakage analysis are calculated using the new three-dimensional submodel (3DSM). The contact pressures calculated using the 3DSM are provided in Tables 1 (as documented in Reference 5) and 2 (as documented in Reference 1). Tables 1 and 2 are provided for information only and are considered supplemental information that may be helpful to the NRC reviewer in making the determination of acceptability. The contact pressures included in Table 1 do not appear in any of the previously docketed submittals. Table 2 reflects the contact pressures included in Table 4-3 of Reference 1.

Table 1
Contact Pressures (psi) Generated for High T_{avg} NOP Condition

a,c,e

Radius (in) / Elevation (in)	7.126	28.11	40.454	47.861	51.564
0					
2					
3.523					
5.442					
7					
9					
10.905					
13					
16.368					
18.287					
19.81					
21.81					

Table 2
Contact Pressures (psi) Generated for Selected Elevations during SLB

Radius (in) / Elevation (in)	7.126	28.11	40.454	47.861	51.564
0					
2					
3.523					
5.442					
7					
9					
10.905					
13					
16.368					
18.287					
19.81					
21.81					

a,c,e

REFERENCES:

1. WCAP-18089-P, Revision 0, "Point Beach Unit 1 Steam Generator Tube Alternate Repair Criterion, H*," March 2016.

2. NRC email from Mahesh Chawla, NRC Project Manager, to NextEra Energy Point Beach, LLC, Bryan Woyak, Steve Catron, Gary Kilby, "FINAL Request for Additional Information – Steam Generator License Amendment Request for H* Alternate Repair Criteria for Steam Generator Tube Sheet Expansion Region (CAC No. MF8218)," February 13, 2017, 11:07 AM *(attached in EDMS)*.

3. LTR-SGMP-17-24, Revision 0, "Finite Element Analysis Result Images for Request for Additional Information from the Nuclear Regulatory Commission Staff (NRC) Concerning the Point Beach Unit 1 H* License Amendment Request Submittal," March 2017.

4. LTR-SGMP-09-92, Revision 4, "Tubesheet Sector Definition for H* Revised Probabilistic Analysis," July 2016.

5. CN-SGMP-15-4, Revision 0, "3D Submodel for H* Analysis and Point Beach Unit 1 H* Contact Pressure and Mean H* Results," July 2015.

Attachment 3 Contains Proprietary Information
Withhold Attachment 3 from Public Disclosure in Accordance with 10 CFR 2.390

ATTACHMENT 3

Responses to Request for Additional Information from the Nuclear Regulatory Commission Staff (NRC) Concerning the Point Beach Unit 1 H* License Amendment Request Submittal"
(Proprietary)

15 pages follow