

ENCLOSURE 1

Response to Request for Additional Information for License Amendment Request 14-04
Revised Reactor Coolant System Pressure - Temperature Limits Applicable for 55 Effective
Full Power Years

(Non-proprietary)

**Response to Request for Additional Information for License Amendment Request 14-04
Revised Reactor Coolant System Pressure - Temperature Limits Applicable for 55 Effective
Full Power Years**

NRC RAI-2.1.1: *Table 4-2 of WCAP-17444-P (the WCAP) lists values for the reference nil-ductility temperature (RT_{NDT}) for the Seabrook closure head region.* //

// are measured heat-specific values from certified material test reports that were obtained in accordance with ASME Code, Section III, NB-2331 requirements. If not, identify whether NUREG-0800 Branch Technical Position (BTP) 5-3 was used to establish the RT_{NDT} values listed in Table 4-2 for these base metal components. If BTP 5-3 was used, identify the specific position of that document that was used, and provide the calculations used to determine the RT_{NDT} for each of these materials.

Response to RAI-2.1.1: Table 4-2 contains proprietary information. The values for the reference nil-ductility temperature (RT_{NDT}) for the Seabrook reactor vessel (RV) closure head region base metal component (closure head dome, closure head ring (torus) segments, closure head flange, and vessel flange) are measured heat specific values reported on Certified Material Test Reports (CMTRs). The Seabrook reactor vessel was designed in accordance with ASME Section III, 1971 Edition through Winter 1972 addenda and incorporated the changes to the requirements included in the Summer 1972 Addenda to ASME Section III, NB-2300 including testing of Charpy specimens in the transverse (weak) direction.

NRC RAI-2.1.2: //

//

Response to RAI-2.1.2: [

]

NRC RAI-2.1.3: *Section 4 of the WCAP indicates that the stress analysis of the flange region was carried out with both temperature and pressure varying with time, for heatup and cooldown transients of 100°F per hour. Additionally, the proposed TS P-T limits for 55 EFPY were developed based on a maximum allowable heatup and cooldown rate of 100°F per hour.*

//

//

Response to RAI-2.1.3: For the fracture mechanics evaluation, the heatup process begins at a temperature of [

] which represents standard design plant heatup conditions. [

] In actual practice, the rates of heatup are much lower especially at initial conditions.

The heatup rate used in the evaluation is therefore: [

]

NRC RAI-2.1.4: [I

II] The staff's calculations show that the fracture toughness increases as heatup progresses reaching the upper shelf value of 200 ksi in by 82 minutes. However, the staff is concerned that the applied K_I values could peak at some time between boltup and 82 minutes due to a combination of boltup stress plus pressure and thermal stresses while the toughness is still relatively low, resulting in a more limiting ratio of K_{Ic} to 2 times K_I .

II

II] Provide the values of K_{Ic} and K_I at several intermediate times between boltup and 82 minutes for the same location. If the most limiting ratio does not occur at boltup, provide the limiting K_{Ic} to 2 times K_I ratio, the corresponding time, and the values of K_I and K_{Ic} at that time.

Response to RAI-2.1.4: The design transient for heatup as specified in Seabrook [

] This design transient specification is used in the evaluation for WCAP-17444, where the heatup process begins [

]

[

] This is consistent with plant operation standards, where Technical Specifications Table 1.2 defines that 200°F or below with the reactor vessel head tensioned is Mode 5 (Cold Shutdown). Evolutions in Mode 5 such as reactor coolant system evacuation and fill or pressurizer bubble formation do not produce rapid temperature changes below 120°F. In addition, heatup from ambient conditions is inherently limited as reactor heat is not available.

until Mode 2 (i.e., sole source of heatup is reactor coolant pump heat and decay heat). For example (based on the most recent plant startup from refueling in March 2014, readings from the wide range cold leg A0344V_RCLP2 indicator), the initial heatup from ambient conditions occurred from 88.5°F to 155.7°F over 11 hours (i.e., approximately 6.1°F/hr heatup) which was followed by a second heatup from 187.3°F to 332.2°F over 5.3 hours (i.e., approximately 27.3°F/hr heatup). Both heatups occurred far below the 100°F/hr heatup limit described in the []

]

Furthermore, in the fracture mechanics evaluation for WCAP-17444, []

] Therefore, the K_{Ic} value of 70.98 ksi-in^{1/2} is applied to both the boltup and initial heatup time step, []

]

Based on the comparison between K_I and K_{Ic} for the two limiting time steps for the entire heatup and cooldown transient, it demonstrated that the Section XI Appendix G criteria are satisfied and it is concluded that the integrity of the closure head/vessel flange region is not a concern for Seabrook.

Enclosure 2

Application for Withholding Proprietary Information from Public Disclosure
and
Affidavit



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Engineering, Equipment and Major Projects
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USA

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Proj letter: NEXT-15-27

CAW-15-4115
March 6, 2015

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: LTR-PAFM-15-17, Rev. 0, Attachment A, "Responses to NRC RAIs Pertaining to Pressure-Temperature Limit Curves at Seabrook" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-15-4115 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. 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 Seabrook, LLC.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse Affidavit should reference CAW-15-4115, 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.

Very truly yours,

A handwritten signature in black ink, appearing to read "James A. Gresham".

James A. Gresham, Manager
Regulatory Compliance

Enclosures

March 6, 2015

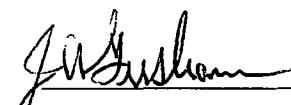
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared James A. Gresham, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:



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 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, it 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-PAFM-15-17, Rev. 0, Attachment A, "Responses to NRC RAIs Pertaining to Pressure-Temperature Limit Curves at Seabrook" (Proprietary)" for submittal to the Commission, being transmitted by NextEra Energy Seabrook, LLC letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with NRC letter SEABROOK STATION, UNIT 1- REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST TO REVISE THE TECHNICAL SPECIFICATION PRESSURE-TEMPERATURE LIMITS AND REQUEST FOR EXEMPTION FROM 10 CFR PART 50, APPENDIX G MINIMUM TEMPERATURE REQUIREMENTS (TAC NOS. MF4576 AND MF4577), and may be used only for that purpose.

- (a) This information is part of that which will enable Westinghouse to:
 - (i) Generate Pressure-Temperature Limit Curves
 - (ii) Address low-temperature operation
- (b) Further this information has substantial commercial value as follows:
 - (i) Westinghouse plans to sell the capability to generate Pressure-Temperature Limit curves.
 - (ii) The information requested to be withheld reveals Seabrook-specific information that was used 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 environmental fatigue screening 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 documents furnished to the NRC in connection with NRC letter SEABROOK STATION, UNIT 1- REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST TO REVISE THE TECHNICAL SPECIFICATION PRESSURE-TEMPERATURE LIMITS AND REQUEST FOR EXEMPTION FROM 10 CFR PART 50, APPENDIX G MINIMUM TEMPERATURE REQUIREMENTS (TAC NOS. MF4576 AND MF4577), and may be used only for that purpose.

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).

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