



# HITACHI

## GE Hitachi Nuclear Energy

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### Proprietary Notice

This letter forwards proprietary information in accordance with 10 CFR 2.390. Upon the removal of Enclosure 1, the balance of this letter may be considered non-proprietary.

MFN 12-055

Docket number: 05200010

June 5, 2012

Attn: David Misenhimer  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

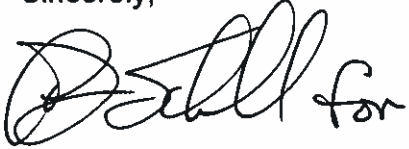
**Subject: NRC Requests for Additional Information (RAI) Related to the Audit of the Economic Simplified Boiling Water Reactor (ESBWR) Steam Dryer Design Methodology Supporting Chapter 3 of the ESBWR Design Control Document – Draft Response for RAI 3.9-284**

In regard to the Requests for Additional Information transmitted in your May 1, 2012 Letter, Reference 1, to support the NRC ESBWR Steam Dryer Methodology Audit conducted March 21–23, 2012, Docket 05200010, please find attached the draft response for RAI 3.9-284.

Enclosure 1 contains proprietary information. The proprietary information is contained within brackets [[ ]] and designated in red and dotted underline text, to assist in identification. This RAI contains proprietary information identified by GE-Hitachi Nuclear Energy, Americas LLC, and should be protected accordingly. Enclosure 2 contains the response with the proprietary information redacted and is acceptable for public release. The affidavit provided in Enclosure 3 sets forth the basis for requesting that information identified in Enclosure 1 be withheld from the public.

If you have any questions concerning this letter, please contact Peter Yandow at 910-819-6378.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Head for".

Jerald G. Head  
Senior Vice President, Regulatory Affairs

Commitments: None

Reference:

1. Letter from USNRC to Jerald G. Head, GEH, Subject: Requests for Additional Information Letter NO. 414 Related to ESBWR Design Certification Application (DCD) Revision 9, received May 1, 2012

Enclosures:

1. Draft Response for RAI 3.9-284 - Proprietary Version
2. Draft Response for RAI 3.9-284 – Non-Proprietary Version
3. Affidavit for MFN 12-055

cc: Glen Watford, GEH  
Peter Yandow, GEH  
Patricia Campbell, GEH  
Mark Colby, GEH  
Tim Enfinger, GEH  
Gerald Deaver, GEH  
David Keck, GEH  
Joel Melito, GEH  
eDRF Section: 0000-0146-2688 R1

## **Enclosure 2**

**MFN 12-055**

### **Draft Response for RAI 3.9-284**

#### **Public Version**

##### **NON-PROPRIETARY VERSION**

This is a non-proprietary version of Enclosure 1, from which the proprietary information has been removed. Portions of the document that have been removed are identified by white space within double brackets, as shown here [[ ]].

#### **IMPORTANT NOTICE REGARDING CONTENTS OF THIS DOCUMENT**

##### **Please Read Carefully**

The information contained in this document is furnished solely for the purpose(s) stated in the transmittal letter. The only undertakings of GEH with respect to information in this document are contained in the contracts between GEH and its customers or participating utilities, and nothing contained in this document shall be construed as changing that contract. The use of this information by anyone for any purpose other than that for which it is intended is not authorized; and with respect to any unauthorized use, GEH makes no representation or warranty, and assumes no liability as to the completeness, accuracy, or usefulness of the information contained in this document.

**DRAFT RESPONSE FOR REVIEW**

**NRC RAI 3.9-284**

During the audit, the staff inquired about changes made to the SSES ANSYS structural model during the SSES benchmarking effort. Following the exit meeting for the audit, the staff had the opportunity to review DRF 0000-0087- 2787, "SSES Dryer FEM with [[  
]] Representations and Other Modifications", dated 09/20/2008. Based on its review, the staff sheet 4 of the document):

- 1) Element Nos. 99 and 199 are specified as [[  
]]. In a subsequent table, the element thicknesses are listed as [[  
]]. There is no information about stiffness or mass associated with these elements. Based on the complete description, it appears that these [[

]]. The staff requests GEH to (1) describe in detail the purpose of these elements and why they are needed; (2) confirm the thickness and specify the stiffness (E, nu) and mass density; (3) describe in detail the technical basis for determining that these [[  
]] do not affect the structural response of the steam dryer; and (4) if they do affect the structural response, provide the detailed technical basis for why this is acceptable.

- 2) Element No. 5 is specified as [[  
]] and is [[  
]]. The staff could not find information about the thickness, stiffness or mass associated with these elements. The staff requests GEH to (1) describe in detail the implementation of this technique to [[

]]. provide the detailed technical basis for why this is acceptable. (3) GEH is requested to provide the purpose for utilizing any fictitious [[  
]].

GEH is requested to specifically describe the extent to which the elements identified in items (1) and (2) above will be implemented in the ANSYS structural analysis of the ESBWR steam dryer. GEH should also discuss any planned changes for ESBWR, and the technical basis for the changes.

**DRAFT RESPONSE FOR REVIEW**

**GEH Response**

Summary:

A response was provided to an RAI for GGNS Replacement Steam Dryer licensing review that addresses this RAI. That RAI was EMCB-GGNS1-SD-7-RAI-04 transmitted by GNRO-2012/00023 dated April 5<sup>th</sup> 2012]. No changes in the Steam Dryer analysis process are anticipated, so this response (provided below) also applies to the ESBWR Steam Dryer design.

Description:

In the Susquehanna Steam Electric Station (SSES) replacement dryer global Finite Element Model (FEM), [[

]]. The skin shell elements are not included in the solution of the structural analysis. Therefore, these skin shell elements have no impact on the SSES dryer stress calculations.

[[

]]

Figure 1: Skin Shell Overlay Elements in SSES Finite Element Model

**DRAFT RESPONSE FOR REVIEW**

In the Grand Gulf Nuclear Station (GGNS) FEM, [[

]] They are not used in the structural solution. There are no overlay elements used in the GGNS FEM other than those used for the [[ ]] locations as described in previous GGNS RAI responses.

[[

]]

Figure 2: Skin Shell Overlay Elements in GGNS Finite Element Model

In summary, [[

]] The skin shell overlay elements are not used in the structural solution and do not have any impact on the stresses determined for either SSES or GGNS.

**DCD Impact**

None.

**DRAFT RESPONSE FOR REVIEW**

**Licensing Topical Report Impact**

None.

**DRAFT RESPONSE FOR REVIEW**

**Enclosure 3**

**MFN 12-055**

**Affidavit**



# GE-Hitachi Nuclear Energy Americas LLC

## AFFIDAVIT

I, **Edward D. Schrull, PE**, state as follows:

- (1) I am the Vice President, Regulatory Affairs of GE-Hitachi Nuclear Energy Americas LLC (GEH), and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in Enclosure 1 of GEH's letter, MFN 12-055, J. Head (GEH) to D. Misenhimer (NRC), entitled "NRC Requests for Additional Information (RAI) Related to the Audit of the Economic Simplified Boiling Water Reactor (ESBWR) Steam Dryer Design Methodology Supporting Chapter 3 of the ESBWR Design Control Document – Draft Response for RAI 3.9-284," dated June 5, 2012. The GEH proprietary information in Enclosure 1 of MFN 12-055 is identified by a dotted underline inside double square brackets. [[This sentence is an example.<sup>{3}</sup>]] GEH proprietary information in figures is identified with double square brackets before and after the object. In each case, the superscript notation <sup>{3}</sup> refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.

GEH does not consider this document to be transmitted to the NRC as a record. Rather, the document is provided solely for purposes of facilitating NRC/GEH discussions in a timely manner. GEH will submit final responses using its normal process and include a separate affidavit accordingly. Providing this affidavit to cover proprietary information that the NRC may have in its possession for purposes of performing a review of information during said discussions is consistent with NRC guidance (see NRC MC 0620).

- (3) In making this application for withholding and determination of proprietary information of which it is the owner or licensee, GEH relies upon the exemption from disclosure set forth in the Freedom of Information Act (FOIA), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for trade secrets (Exemption 4). The material for which exemption from disclosure is here sought also qualifies under the narrower definition of trade secret, within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975 F2d 871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F2d 1280 (DC Cir. 1983).
- (4) The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a and (4)b. Some examples of categories of information that fit into the definition of proprietary information are:

- a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GEH's competitors without license from GEH constitutes a competitive economic advantage over GEH and/or other companies.
  - b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.
  - c. Information that reveals aspects of past, present, or future GEH customer-funded development plans and programs, that may include potential products of GEH.
  - d. Information that discloses trade secret and/or potentially patentable subject matter for which it may be desirable to obtain patent protection.
- (5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to the NRC in confidence. The information is of a sort customarily held in confidence by GEH, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GEH, not been disclosed publicly, and not been made available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary and/or confidentiality agreements that provide for maintaining the information in confidence. The initial designation of this information as proprietary information and the subsequent steps taken to prevent its unauthorized disclosure are as set forth in the following paragraphs (6) and (7).
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, who is the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or who is the person most likely to be subject to the terms under which it was licensed to GEH. Access to such documents within GEH is limited to a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist, or other equivalent authority for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary and/or confidentiality agreements.
- (8) The information identified in paragraph (2) above is classified as proprietary because it communicates sensitive business information regarding commercial communications, plans, and strategies associated with future actions related to GEH's extensive body of technology, design, and regulatory information.

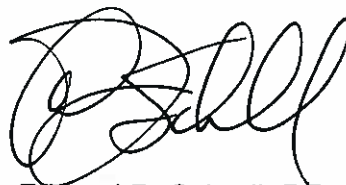
- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GEH's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GEH. The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial. GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GEH would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GEH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 5<sup>th</sup> day of June 2012.



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