



HITACHI

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Proprietary Notice

This letter forwards proprietary information in accordance with 10CFR2.390. Upon the removal of Enclosure 1 and 3, the balance of this letter may be considered non-proprietary.

MFN 09-760

Docket No. 52-010

December 4, 2009

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

**Subject: Response to Portion of NRC RAI Letter No. 392 Related to ESBWR
Design Certification Application – DCD Tier 2 Section 3.9 –
Mechanical Systems and Components; RAI Number 3.9-214 S02**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to a portion of the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) letter number 392 sent by NRC letter dated November 5, 2009 (Reference 1). RAI Number 3.9-214 S02 is addressed in Enclosure 1.

Enclosure 3 contains the changes to the effected LTR as a result of GEH's response to this RAI. Verified LTR changes associated with this RAI response are identified in the enclosed markups by enclosing the text within a black box.

Enclosure 1 and Enclosure 3 contain GEH proprietary information as defined by 10 CFR 2.390. GEH customarily maintains this information in confidence and withholds it from public disclosure. Enclosure 2 and Enclosure 4 are the non-proprietary version, which does not contain proprietary information and is suitable for public disclosure.

The affidavit contained in Enclosure 5 identifies that the information contained in Enclosure 1 and Enclosure 3 has been handled and classified as proprietary to GEH. GEH hereby requests that the information in Enclosure 1 and Enclosure 3 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 9.17.

*DCD
NRD*

If you have any questions or require additional information, please contact me.

Sincerely,



Richard E. Kingston
Vice President, ESBWR Licensing

Reference:

1. MFN 09-699 Letter from U.S. Nuclear Regulatory Commission to J. G. Head, GEH, *Request For Additional Information Letter No. 392 Related to ESBWR Design Control Document* dated November 5, 2009

Enclosures:

1. Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application - DCD Tier 2 Section 3.9 – Mechanical Systems and Components; RAI Number 3.9-214 S02 - Proprietary Version
2. Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application - DCD Tier 2 Section 3.9 – Mechanical Systems and Components; RAI Number 3.9-214 S02 - Public Version
3. Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application - LTR Markups for RAI Number 3.9-214 S02 – Proprietary Version
4. Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application - LTR Markups for RAI Number 3.9-214 S02 - Public Version
5. Affidavit

| | | |
|-----|--------------|--------------------------------------|
| cc: | AE Cabbage | USNRC (with enclosures) |
| | JG Head | GEH/Wilmington (with enclosures) |
| | DH Hinds | GEH/Wilmington (with enclosures) |
| | HA Upton | GEH/San Jose (with enclosures) |
| | eDRF Section | 0000- 0092-7092 R3 (RAI 3.9-214 S02) |

Enclosure 2

MFN 09-760

**Response to Portion of NRC Request for
Additional Information Letter No. 392
Related to ESBWR Design Certification Application
DCD Tier 2 Section 3.9 – Mechanical Systems and
Components**

RAI Number 3.9-214 S02

Public Version

NRC RAI 3.9-214 S02

RAI Summary

Provide criteria that will be used to identify high stress locations.

RAI Text

(a) Please identify the significant improvements already incorporated in the ABWR steam dryers over the BWR-6 in maximizing the use of full penetration welds.

(b) Please provide the criteria that will be used to identify high-stress locations and confirm whether all the welds have been moved away from the high-stress locations or eliminated.

GEH is requested to include the information in response to part (b) in LTR NEDE-33313P

GEH Response

Part (a)

The BWR/6 to ABWR stream dryer weld joint design improvements implemented in ESBWR and BWR replacement steam dryer designs are listed [[

1.)

2.)

3.)

4.)

5.)

6.)

7.)

8.)

9.)

]]

Part (b)

As discussed [[

]] A more detailed discussion is provided in LTR NEDE-33313P markup, section 4.1, where the last paragraph was added.

References:

(1) Docket No. 052-000010, Regulatory Audit Report of GEH, August 25, 2009.

DCD Impact

LTR NEDE-33313P, Rev 1, section 4.1 will be revised as noted in the attached markup.

Enclosure 4

MFN 09-760

**Response to NRC Request for
Additional Information Letter No. 392
Related to ESBWR Design Certification Application
LTR Markups for RAI Number 3.9-214 S02
Public Version**

4.0 DESIGN CRITERIA

The steam dryer, including the dryer units, is a non-safety related item and is classified as an Internal Structure per Reference 3, as defined in Reference 4, Subsection NG, Paragraph NG-1122. The steam dryer is not an ASME Code component, but the design shall comply to the applicable requirements of ASME Code Subsection NG-3000 except for the weld quality and fatigue factors as discussed in Subsections 4.1 and 7.

4.1 Fatigue Criteria

The steam dryer fatigue evaluation consists of calculating the alternating stress intensity from FIV loading at all locations in the steam dryer structure and comparing it with the allowable design fatigue threshold stress intensity requirements from Reference 5. [[

]].

The [[

A.

-
-
-
-
-

B.

-
-
-

]].

The stress may also be obtained from the [[

¹ SPOINT, RSYS and NFORCE are ANSYS terms. See the ANSYS user manual for definitions.

]].

If the [[

]].

The specified SCF [[

]]

If [[

]]

4.2 Weld Quality Factor

For the case of the steam dryer, which is not a core support structure, it was [[

MFN 09-760

Enclosure 5

Affidavit

GE-Hitachi Nuclear Energy Americas, LLC

AFFIDAVIT

I, **Larry J. Tucker**, state as follows:

- (1) I am the Manager, ESBWR, GE Hitachi Nuclear Energy ("GEH"), 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 and Enclosure 3 of GEH letter MFN 09-760, Mr. Richard E. Kingston to U.S. Nuclear Regulatory Commission, entitled *Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application – DCD Tier 2 Section 3.9 – Mechanical Systems and Components; RAI Numbers 3.9-214 S02* dated December 4, 2009. The GEH proprietary information in Enclosure 1, which is entitled *Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application – DCD Tier 2 Section 3.9 – Mechanical Systems and Components; RAI Number 3.9-214 S02 – Proprietary Version* and in Enclosure 3, which is entitled *Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application - LTR Markups for RAI Number 3.9-214 S02 – Proprietary Version* is delineated by a [[dotted underline inside double square brackets...⁽³⁾]]. Figures and large equation objects are identified with double square brackets before and after the object. In each case, the superscript notation ⁽³⁾ refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination. A non-proprietary version of this information is provided in Enclosure 2 *Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application – DCD Tier 2 Section 3.9–Mechanical Systems and Components; RAI Number 3.9-214 S02 - Public Version* and in Enclosure 4 *Response to Portion of NRC RAI Letter No. 392 Related to ESBWR Design Certification Application - LTR Markups for RAI Number 3.9-214 S02- Public Version*.
- (3) In making this application for withholding of proprietary information of which it is the owner, 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 qualify 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, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).
- (4) Some examples of categories of information which 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 competitors without license from GEH constitutes a competitive economic advantage over other companies;
- b. Information which, if used 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 of a similar product;
- c. Information which reveals aspects of past, present, or future GEH customer-funded development plans and programs, resulting in potential products to GEH;
- d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a., and (4)b, above.

- (5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to 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, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or subject to the terms under which it was licensed to GEH. Access to such documents within GEH is limited on 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, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, 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 agreements.
- (8) The information identified in paragraph (2), above, is classified as proprietary because it identifies detailed GEH ESBWR design information. GEH utilized prior design information and experience from its fleet with significant resource allocation in developing the system over several years at a substantial cost.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GEH asset.

- (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.

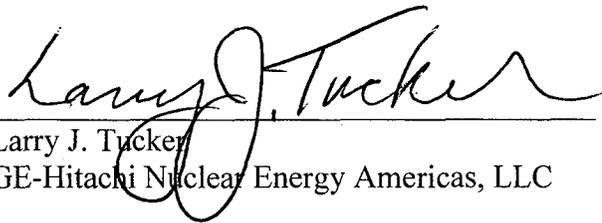
The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

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 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 4th day of December, 2009.


Larry J. Tucker
GE-Hitachi Nuclear Energy Americas, LLC