HITACHI

GE Hitachi Nuclear Energy

Richard E. Kingston
Vice President, ESBWR Licensing

PO Box 780 M/C A-65
Wilmington, NC 28402-0780
USA

T 910 819 6192
F 910 362 6192
rick.kingston@ge.com

Proprietary Notice
This letter forwards proprietary information in accordance with 10CFR2.390. Upon the removal of Enclosure 2, the balance of this letter may be considered non-proprietary.

MFN 08-344 Supplement 3

Docket No. 52-010

February 19, 2010

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

Subject: **Response to Portion of NRC Request for Additional Information Letter No. 406 Related to ESBWR Design Certification Application – Engineered Safety Features – RAI Number 6.2-148 S03**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by the Reference 1 NRC letter. GEH response to RAI Number 6.2-148 S03 is addressed in Enclosure 1.

Enclosure 2 contains 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 is proprietary in its entirety. GEH has not submitted a non-proprietary version of Enclosure 2 in accordance with NRC Information Notice 2009-07, Requirements for Submittals, (2): "In instances in which a non-proprietary version would be of no value to the public because of the extent of the proprietary information, the agency does not expect a non-proprietary version to be submitted."

The affidavit contained in Enclosure 3 identifies that the information contained in Enclosure 2 has been handled and classified as proprietary to GEH. GEH hereby requests that the information of Enclosure 2 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 9.17.

D068
NRO

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

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

Reference:

1. MFN 10-048, Letter from U.S. Nuclear Regulatory Commission to Jerald G. Head, *Request for Additional Information Letter No. 406 Related to ESBWR Design Certification Application,* January 21, 2010

Enclosures:

1. MFN 08-344 Supplement 3 - Response to Portion of NRC Request for Additional Information Letter No. *406* Related to ESBWR Design Certification Application – Engineered Safety Features – RAI Number 6.2-148 S03
2. MFN 08-344 Supplement 3 - Response to Portion of NRC Request for Additional Information Letter No. *406* Related to ESBWR Design Certification Application – Engineered Safety Features – RAI Number 6.2-148 S03 – Attachment 1 to Enclosure 1 – GEH Proprietary Information
3. MFN 08-344 Supplement 3 - Response to Portion of NRC Request for Additional Information Letter No. *406* Related to ESBWR Design Certification Application – Engineered Safety Features – RAI Number 6.2-148 S03 – Affidavit

cc:

AE Cubbage	USNRC (with enclosures)
JG Head	GEH (with enclosures)
DH Hinds	GEH (with enclosures)
SC Moen	GEH (w/o enclosures)
eDRFsection	0000-0113-1229

Enclosure 1

MFN 08-344 Supplement 3

Response to Portion of NRC Request for

Additional Information Letter No. 406

Related to ESBWR Design Certification Application

Engineered Safety Features

RAI Number 6.2-148 S03

NRC RAI 6.2-148 S03

Provide details of vacuum breaker leakage detection testing; use limiting conditions for the feasibility calculation.

A. In RAI 6.2-148 S02, the staff requested GEH to describe test conditions and how the tests will be performed for detecting vacuum breaker leakage following a loss-of-coolant accident. In response, GEH pointed to DCD sections which define type tests.

Description provided for type tests is not specific enough for the vacuum breaker leak detection tests that are to be used for making set points for the vacuum breaker isolation valve because the staff has not previously reviewed such tests. Provide details of the tests, detailed test description, test conditions, and test matrix for the staff's review and include this information in a licensing document.

B. GEH's TRACG modeling of the vacuum breaker leak detection appears to have not shown that the difference in temperature between the vacuum breaker extension pipe and the wetwell is sufficient to detect leakage under most limiting conditions. GEH should use all applicable conditions to demonstrate the feasibility of the method.

1. The calculation assumed drywell and wetwell conditions at 50 s when the vacuum breaker first opens. However, when the vacuum breaker opens later the drywell and wetwell temperature difference will be lower, and thus, leakage may be harder to detect using the temperature difference between the vacuum breaker extension pipe and the wetwell.

2. Both main steam break accident (MSLB) and feedwater line break accident (FWLB) bounding cases have similar accident responses. Therefore, GEH should consider both accident cases and use the conditions for the most limiting case. For example, FWLB may have lower temperature difference between the drywell and wetwell when the vacuum breakers are open, and therefore, more limiting than for MSLB for vacuum breaker leakage detection.

GEH Response

Item A – Attachment 1 to this response contains the preliminary information requested for the vacuum breaker leakage detection instrumentation confirmatory test. The test parameters included in Attachment 1 bound the event time frame from 50 seconds after initiation to 72 hours after initiation, and bound the spectrum of analyzed LOCA events including MSLB and FWLB. The preliminary test matrix is included as a part of

Attachment 1. The preliminary document, that is provided per conference call between GEH and the NRC held on February 4, 2010, contains GEH Proprietary Information. A completed document, upon approval, will be submitted by separate transmittal letter.

Item B – The vacuum breaker leakage detection instrumentation will be tested to confirm it is effective under the most limiting conditions as outlined in Attachment 1. This testing is required to satisfy a portion of DCD Tier 1, Table 2.15.1-2, ITAAC 16b. GEH is not relying on TRACG modeling to confirm the effectiveness of the vacuum breaker leakage detection under the design conditions. The TRACG modeling discussed in response to Supplement 1 and Supplement 2 of the RAI (MFN 08-344 Sup 1, dated June 10, 2009, and MFN 08-344 Sup 2, dated Nov. 17, 2009) is intended to only demonstrate that the method is feasible and suitable to the intended purpose. The test program outlined by Attachment 1 will satisfy the ITAAC, therefore additional analytical modeling is not required or planned for meeting the ITAAC.

DCD Impact

No DCD change will be made in response to this RAI.

Enclosure 3

MFN 08-344 Supplement 3

Response to Portion of NRC Request for

Additional Information Letter No. 406

Related to ESBWR Design Certification Application

Engineered Safety Features

RAI Number 6.2-148 S03

Affidavit

GE-Hitachi Nuclear Energy Americas LLC

AFFIDAVIT

I, Larry J. Tucker, state as follows:

(1) I am the Manager, ESBWR Engineering, GE Hitachi Nuclear Energy ("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 2 of GEH's letter, MFN 08-344 Supplement 3, Mr. Richard E. Kingston to U.S. Nuclear Energy Commission, entitled "*Response to Portion of NRC Request for Additional Information Letter No. 406 – Related to ESBWR Design Certification Application – Engineered Safety Features – RAI Number 6.2-148 S03,*" dated February 18, 2010. Enclosure 2, which is entitled "*MFN 08-344 Supplement 3 – Response to Portion of NRC Request for Additional Information Letter No. 406 – Related to ESBWR Design Certification Application – Engineered Safety Features – RAI Number 6.2-148 S03 – Attachment 1 to Enclosure 1 – GEH Proprietary Information,*" is proprietary in its entirety. Paragraph (3) of this affidavit provides the basis for the proprietary determination.

(3) In making this application for withholding 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 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's 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 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) is classified as proprietary because it contains details of GEH's design and licensing methodology. The development of the methods used in these analyses, along with the testing, development and approval of the supporting methodology was achieved at a significant cost to GEH.

(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 18th day of February 2010.

Larry J. Tucker

Larry J. Tucker
GE-Hitachi Nuclear Energy Americas LLC