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

MFN 08-793

Docket No. 52-010

October 31, 2008

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. 234 – Related to ESBWR Design Certification Application – RAI Number 21.6-115**

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 21.6-115 is addressed in Enclosures 1, 2 and 3.

Enclosure 1 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 the non-proprietary version, which does not contain proprietary information and is suitable for public disclosure.

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

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

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

D068
NRO

References:

1. MFN 08-629 Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, GEH, *Request For Additional Information Letter No. 234 Related To ESBWR Design Certification Application,* dated August 5, 2008

Enclosures:

1. MFN 08-793 – Response to Portion of NRC Request for Additional Information Letter No. 234 – Related to ESBWR Design Certification Application – RAI Number 21.6-115 – GEH Proprietary Information
2. MFN 08-793 – Response to Portion of NRC Request for Additional Information Letter No. 234 – Related to ESBWR Design Certification Application – RAI Number 21.6-115 – Non-Proprietary Version
3. MFN 08-793 – Response to Portion of NRC Request for Additional Information Letter No. 234 – Related to ESBWR Design Certification Application – RAI Number 21.6-115 – Affidavit

cc: AE Cubbage USNRC (with enclosures)
RE Brown GEH/Wilmington (with enclosures)
DH Hinds GEH/Wilmington (with enclosures)
eDRF 0000-0091-2865

Enclosure 2

MFN 08-793

Response to Portion of NRC Request for

Additional Information Letter No. 234

Related to ESBWR Design Certification Application

RAI Number 21.6-115

Non-Proprietary Version

NRC RAI 21.6-115

Justify removing outliers for TGBLA-6/MCNP comparisons.

NEDE 33083P, Supp. 3: Chapter 5 - C1AX (page 41-42): In determining biases and uncertainties between TGBLA-6 and MCNP, [[ ]] outliers were not used. Removing outliers from an experimental data base is typical practice due to error or uncertainty associated with specific tests. However, this is a code to code comparison used to estimate the uncertainty in k8. Please explain the justification for removing the [[ ]] outliers for the TGBLA-6/MCNP comparisons.

GEH Response

There are two main parts to this response. The first part of this response explains that the excluded outliers referred to in the RAI are from the original database that was subsequently superseded by a database where no points were excluded. The second part of the response justifies why it was appropriate to exclude outliers from the original database that has now been superseded.

Firstly, the RAI refers to the original database [[ ]]. This database has been superseded by a new database containing [[ ]] lattices where calculations were performed [[ ]] in order to include the impact of void history on the void coefficient correction model that the NRC staff requested. See the response for ESBWR RAI 21.6-111 (MFN 08-504) which references its duplicate RAI #30 for which the detailed response was provided via MFN-08-483 tracked under TAC # MD2569 for NEDE-32906P, Supplement 3: "Migration to TRACG04/PANAC11 from TRACG02/PANAC10 for TRACG AOO and ATWS Overpressure Transients". In addition to including the impact of void history, the new database addresses some of the shortcomings of the original database that made it necessary to reject some calculated values in the original database that it supersedes. The updated database contains many more calculated points, and **none of them have been excluded**. The response for RAI #30 (tracked under TAC # MD2569 for NEDE-32906P, Supplement 3) included a sample calculation to show how the updated void coefficient model impacts the response for ΔCPR/iCPR for a limiting CPR transient.

The second part of this response (everything from this point forward) justifies why it was appropriate to exclude some calculated points from the original database. The justification is being provided as requested although such justification is irrelevant now that the original database has been superseded. Section C1AX in Chapter 5 of NEDE-33083P, Supplement 3 describes the database of lattices originally used to define the TRACG04 void coefficient correction model. The rejection of [[ ]] outliers does not refer to k-infinity values; rather, it refers to calculated void coefficient values derived from fitting the k-infinity values. It is appropriate to reject these outliers in determining the statistics for the response surface describing the expected error in void coefficients for the reasons that are given in the following four paragraphs.

The [[ ]] lattices provide only a small sample for each discrete point in the grid so outlying values due to non-representative lattices can inappropriately skew the

characterization of the response surface for the void coefficient error. Of the [[ ]] points that were excluded, [[ ]] originate from [[ ]] that is not representative of the population as a whole. Natural enrichment lattices designed for use at the upper extreme of the bundle produce void coefficients that are very close to zero or even positive for small in-channel void fractions, [[

]] Rejection of the [[ ]] void points for lattices of this type is justified because these lattices are [[

]] and should not experience zero in-channel instantaneous void (IV) values for the AOO and stability applications for which use of the void coefficient correction model is allowed.

Another calculated void coefficient value for a zero in-channel IV value was excluded from a low-reactivity GE9 lattice for a similar reason. It is inappropriate that a GE9 lattice evaluated at an atypical condition be allowed to skew the small database so that typical applications are biased.

Of the [[ ]] points that were excluded, [[ ]] more originated from [[

]] lattice. The [[ ]] calculated values that were excluded all occur at in-channel IV values of zero. These points for this lattice were rejected because they are not consistent with the average projected trend from 40% to 0% established from all the other lattices. Because partially-rodded lattices occur in the upper part of the bundle, they are not expected to experience in-channel IV values approaching zero; therefore, it is inappropriate to allow void coefficient values from this lattice to skew the small database.

The final rejected point occurred [[ ]] at an in-channel IV value of [[ ]]. Such a large IV is not expected for fully-rodded lattices because these lattices occur in the lower two-thirds of the core. The excluded point was inconsistent with the average projected trend from 70% to 100% IV values established from all the other lattices. If this point were retained, it would have inappropriately biased the small population in a non-conservative way; so, excluding the point adds conservatism to the model.

DCD Impact

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

LTR Impact

The section titled ***C1AX Void Coefficient*** in LTR NEDE-33083P, Supplements 2 and 3 will be replaced by the section with the same title from the response to RAI 30 for NEDE-32906P, Supplement 3. The replacement information was previously transmitted to the NRC via MFN-08-483 and is being tracked under TAC # MD2569.

Enclosure 3

MFN 08-793

Response to Portion of NRC Request for

Additional Information Letter No. 234

Related to ESBWR Design Certification Application

RAI Number 21.6-115

Affidavit

GE-Hitachi Nuclear Energy Americas LLC

AFFIDAVIT

I, David H. Hinds, state as follows:

(1) I am General Manager, New Units 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 1 of GEH's letter, MFN 08-793, Mr. Richard E. Kingston to U.S. Nuclear Energy Commission, entitled "*Response to Portion of NRC Request for Additional Information Letter No. 234 – Related to ESBWR Design Certification Application – RAI Number 21.6-115,*" dated October 31, 2008. The proprietary information in enclosure 1, which is entitled "*MFN 08-793 – Response to Portion of NRC Request for Additional Information Letter No. 234 – Related to ESBWR Design Certification Application – RAI Number 21.6-115– GEH Proprietary Information,*" 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.

(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.

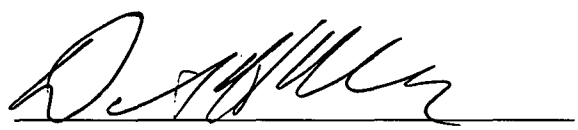
The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

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 31st day of October 2008.



David H. Hinds
GE-Hitachi Nuclear Energy Americas LLC