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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.

GE Hitachi Nuclear Energy

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MFN 10-295

Docket No. 52-010

September 30, 2010

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

Subject: **Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2**

The purpose of this letter is to submit additional information regarding the hot rod model in the ESBWR ATWS Analyses LTR NEDE-33083P, Supplement 2, Revision 2. The additional information is contained in Enclosure 1.

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 of Enclosure 1 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 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

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NRO

Enclosures:

1. Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2 – Discussion - GEH Proprietary Information
2. Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2 – Discussion – Public Version
3. Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2 – Affidavit

cc: AE Cubbage USNRC (with enclosures)
JG Head GEH/Wilmington (with enclosures)
DH Hinds GEH/Wilmington (with enclosures)
TL Enfinger GEH/Wilmington (with enclosures)
eDRF Section 0000-0123-4250

Enclosure 2

MFN 10-295

Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2

Discussion

Public Version

Non-Proprietary Information Notice

This is a non-proprietary version of Enclosure 1 to MFN 10-295, which has the proprietary information removed. Portions of the document that have been removed are indicated as shown here [[ ]].

ADDITIONAL INFORMATION REGARDING THE HOT ROD MODEL IN ESBWR ATWS ANALYSES – "TRACG APPLICATION FOR ESBWR ANTICIPATED TRANSIENT WITHOUT SCRAM ANALYSES," NEDE-33083P, SUPPLEMENT 2, REVISION 2

The hot rod model has been implemented in ESBWR TRACG ATWS analyses as stated in NEDE-33083P, SUPPLEMENT 2, REVISION 2 Section 8.1.1.

TRACG uses a one-dimensional thermal hydraulic model for the fuel channel as well as the other one-dimensional components. Experience from the qualification of TRACG has shown that TRACG calculates the average fuel rod temperatures very well based on the average hydraulic conditions. Cross-sectional variations in the hydraulic conditions, however, can lead to variations in the heat transfer and fuel temperatures. This is particularly the case for high void fractions where the flow is in the annular flow regime and where the rods are in film boiling heat transfer. This is typically only important for the reflood phase of a LOCA prior to the quenching of the fuel rods. An optional hot rod model has been implemented into TRACG to account for this phenomenon.

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Enclosure 3

MFN 10-295

Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2

Affidavit

GE-Hitachi Nuclear Energy Americas LLC

AFFIDAVIT

I, **Mark J. Colby**, state as follows:

(1) I am the Manager, New Plants 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 10-295, Supplement 1, Mr. Richard E. Kingston to U.S. Nuclear Regulatory Commission, entitled "Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – "TRACG Application For ESBWR Anticipated Transient Without Scram Analyses," NEDE-33083P, Supplement 2, Revision 2" dated September 30, 2010. The proprietary information in enclosure 1, entitled "*Transmittal of Additional Information Regarding The Hot Rod Model In ESBWR ATWS Analyses – 'TRACG Application For ESBWR Anticipated Transient Without Scram Analyses,' NEDE-33083P, Supplement 2, Revision 2 – Discussion - 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 30th day of September 2010.

Mark J. Colby
GE-Hitachi Nuclear Energy Americas LLC