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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 08-710

Docket No. 52-010

September 22, 2008

U.S. Nuclear Regulatory Commission

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Subject: Response to Portion of NRC Request for Additional Information
Letter No. 120 – Related to ESBWR Design Certification Application
– RAI Number 21.6-109

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 21.6-109 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.

Level 2 status for TRACG04P will be obtained no later than October 31, 2008.

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

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NRC

References:

1. MFN 07-717 Letter from U.S. Nuclear Regulatory Commission to David H. Hinds, GEH, *Request For Additional Information Letter No. 120 Related To ESBWR Design Certification Application*, dated December 19, 2007

Enclosures:

1. MFN 08-710 – Response to Portion of NRC Request for Additional Information Letter No. 111 – Related to ESBWR Design Certification Application – RAI Number 21.6-109 – GEH Proprietary Information
2. MFN 08-710 – Response to Portion of NRC Request for Additional Information Letter No. 111 – Related to ESBWR Design Certification Application – RAI Number 21.6-109 – Non-Proprietary Version
3. MFN 08-710 – Response to Portion of NRC Request for Additional Information Letter No. 111 – Related to ESBWR Design Certification Application – RAI Number 21.6-109 – Affidavit

cc: AE Cubbage USNRC (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
DH Hinds GEH/Wilmington (with enclosure)
eDRF 0000-0090-2757

Enclosure 2

MFN 08-710

Response to Portion of NRC Request for

Additional Information Letter No. 120

Related to ESBWR Design Certification Application

RAI Number 21.6-109

Non-Proprietary Version

NRC RAI 21.6-109

Inform staff when TRACG04 freezes and provide information to the staff sufficient for the staff to review and approve the version of TRACG04

During an audit conducted at the GEH facility in January 2007, the NRC audit team found that GEH controlled changes to TRACG04P PL 52 code under a level 2R code change control process to support code development that did not have QA controls for independent verification and validation (V&V) of code calculations. Considering planned model revisions disclosed during the audit, the final ESBWR DCD revision will likely be based on a later TRACG code revision that the staff has not reviewed. After changes to the TRACG04P code are complete, GEH is required to place the TRACG04 code under a QA approved code change control process (such as Level 2) where independent V&V is performed in accordance with 10 CFR Part 50, Appendix B, Criterion III, Design Control. Inform the staff when GEH places the TRACG04 code under a QA approved code change control process and provide sufficient information for the staff to review and approve the version of TRACG04 used to develop the final ESBWR DCD submittal.

GEH Response

GEH has provided and will continue to provide sufficient detailed information related to TRACG04 and its ESBWR applications so that the NRC staff can assess that the application methodologies being used for the ESBWR design and licensing meet regulatory requirements. It is acknowledged that NRC review and approval of the ESBWR applications for TRACG04 are based in part on specific assessment of the capability of the TRACG04 code.

The NRC audit of the quality assurance (QA) records for TRACG04A and TRACG04P was conducted at the GEH facility in December 2006 and continued at a GE office in Washington in January 2007. The TRACG04 codes (TRACG04A and TRACG04P) were at that time and are at the present time controlled under the GNF common procedure CP 23-01 governing Engineering Computer Programs (ECPs). This procedure satisfies the quality assurance (QA) requirements of NQA-1 that addresses the entire life cycle of software from conception to end of life spanning *Level 0* through *Level 4*. The absence of *Level 2* status does not mean that a code is outside an *approved code change control process*. The NRC staff audited the ECP electronic records (ECPER) numbers 0000-0009-7147 for TRACG04A and 0000-0009-7189 for TRACG04P. Both of these QA records were initiated on November 4, 2002 at which time both of these codes had an initial ECP status of *Level 0* under CP 23-01 and were under an approved code change control process that satisfies the design control requirements of 10 CFR 50, Appendix B as well as NQA-1.

Under the definition employed in CP 23-01, TRACG04A and TRACG04P are treated as separate entities because they are executed on two different computing platforms. Collectively, TRACG04A and TRACG04P are referred to in the ESBWR application documents as *TRACG04* since they share common source code, a common qualification basis, and many common documents such as the *Model Description LTR*

(NEDE-32176P), *Qualification LTR* (NEDE-32177P) and the *Users Manual* (UM-0136). These documents have all been provided to the NRC along with several different versions of the TRACG04 source code and many input files used to perform ESBWR analyses. Several updates have been provided to the NRC documenting the changes that have occurred to TRACG04 as a result of maintenance and development activities. Some of the key development activities have in fact been in response to NRC RAIs. When appropriate, GEH has redone calculations and provided updated results to the NRC either in RAI responses or revisions to the Design Certification Document (DCD) and the licensing topical reports (LTRs) that support the DCD. A continuous series of common version numbers shared by TRACG04A and TRACG04P has been used to assist in the tracking of the code changes; therefore, the "A" and "P" distinctions are irrelevant except to indicate the target computing platform and ECP status.

The designation *PL 52* as applied to TRACG04A denotes the *Program Library* load that had been frozen since June 27, 2005. TRACG04A had a *Level 2R* status from August 2, 2005 until January 16, 2006 during which time the code was not changing but some required documentation elements such as the Software Test Report (STR) and User's Manual were undergoing revision to reflect the frozen code. This was the reason for the restricted (*R* suffix) in the designation *Level 2R*. The TRACG04A code was released for unrestricted production usage as designated within CP 23-01 by its *Level 2* status that was conferred on January 16, 2006 at least eleven months prior to the NRC audit.

At the time of the NRC audit, the TRACG04P code had an ECP status of *Level 1* indicating it was still under development. Additional developments in TRACG04P are an extension to the source code that up to PL 52 had remained in common with TRACG04A. Under the GNF and GEH QA procedures, the use of TRACG04P as a non-Level-2 code requires additional verification that is dictated under GNF common procedure CP 03-09 and GEH Engineering Operating Procedure EOP 42-6.00. These additional requirements do not apply to TRACG04A after it achieved Level 2 status.

Development of TRACG04P beyond TRACG04A (PL 52) has continued under GNF common procedure CP 23-01 governing Engineering Computer Programs (ECPs). These developments are documented in ECPER number 0000-0009-7189 for TRACG04P (same record as audited by the NRC staff in December 2006). This QA record contains a detailed accounting of all differences both prior to and after the split from TRACG04A (PL 52). A summary of all changes since TRACG04A (PL 52) is provided in **Table 21.6-109-1**. Note that the changes are presented in *release notes* format with the most recent changes listed at the top.

With only a few exceptions, the changes summarized in **Table 21.6-109-1** are typical of normal maintenance activities. The impact of the four important exceptions will now be discussed. [[

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In the last year there have been several program library loads for TRACG04P consistent with what usually happens as a code approaches the Level 2 milestone. On the PC these loads to the program library under the control of the ECP Control Component are referred to as "PERM" versions. Final software testing is performed using the final PERM version and the results are documented in the *Software Test Report* (STR). The STR is the bases upon which the Level 2, Phase 2 (L2.2) Design Review team will recommend *Level 2* status. The L2.2 design review for TRACG04P (PERM 57.11) was initiated on August 21, 2008 and is expected to conclude so that Level 2 status for TRACG04P will be granted no later than October 31, 2008.

It is our intention that TRACG04 be a dual-platform code; consequently, TRACG04A and TRACG04P should not be distinct with respect to ESBWR (or any other) applications. Toward this end, TRACG04A (PL 52) will be superseded by TRACG04P (PERM version 57.11) once the latter achieves Level 2 status. At that point, TRACG04A will either go into Level 3 status (indicating it has been superseded) or it will be updated to be identical to the Level 2 PC version, TRACG04P.

DCD Impact

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

Table 21.6-109 Summary of TRACG04P Code Changes since TRACG04A Level 2

Modification Date	Description	Affected Modules and Comments
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Enclosure 3

MFN 08-710

**Response to Portion of NRC Request for
Additional Information Letter No. 120
Related to ESBWR Design Certification Application**

RAI Number 21.6-109

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 08-710, Mr. Richard E. Kingston to U.S. Nuclear Energy Commission, entitled "*Response to Portion of NRC Request for Additional Information Letter No. 120 – Related to ESBWR Design Certification Application – RAI Number 21.6-109,*" dated September 22, 2008. The proprietary information in enclosure 1, which is entitled "*MFN 08-710 – Response to Portion of NRC Request for Additional Information Letter No. 120 – Related to ESBWR Design Certification Application – RAI Number 21.6-109 – 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) above is classified as proprietary because it contains the results of TRACG analytical models, methods and processes, including computer codes, that GEH has developed and applied to ESBWR evaluations. GEH has developed this TRACG code for over fifteen years, at a significant cost. The reporting, evaluation and interpretation of the results, as they relate to evaluations for the ESBWR 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 22nd day of September 2008.



David H. Hinds
GE-Hitachi Nuclear Energy Americas LLC