

BWR OWNERS' GROUP

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Proprietary Notice

This letter transmits GEH proprietary information in accordance with 10 CFR 2.390. Upon removal of Enclosure 1, the balance of the letter may be considered non-proprietary.

BWROG-13032
June 28, 2013

Project No. 691

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

Attention: Mr. Joe Golla (NRC)

SUBJECT: Submittal of Responses to Supplemental RAIs Associated with Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report NEDC-33608P, "Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects"

- REFERENCES:**
1. NRC Letter dated August 2, 2010 from Mr. J. E. Dyer to Mr. Frederick P. Schiffley regarding waived review fees
 2. BWROG Letter BWROG-10042 dated August 31, 2010, "BWROG ECCS Suction Strainer Issue Resolution Update"
 3. BWROG Letter BWROG-11005 dated January 13, 2011, "Submittal of Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report, 'Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects NEDC-33608P'"
 4. BWROG Letter BWROG-12005 dated March 22, 2012, "Submittal of Batch 1 Responses to RAIs Associated with Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report NEDC-33608P, "Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects"
 5. BWROG Letter BWROG-12016 dated May 22, 2012, "Submittal of Batch 2 Responses to RAIs Associated with Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report NEDC-33608P, "Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects"

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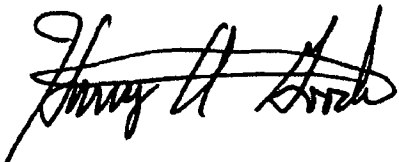
Enclosed for your review are the responses to the NRC supplemental requests for additional information (RAIs) associated with Licensing Topical Report (LTR) NEDC-33608P titled, "Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects," from the BWROG Emergency Core Cooling System Suction Strainers (ECCS SS) Committee. Earlier responses from the BWROG ECCS SS Committee were submitted in References 4 and 5.

As these responses (Enclosure 1) contain GE Hitachi Nuclear Energy (GEH) proprietary information, we are also providing the attached affidavit (Enclosure 3) from GEH to support NRC review of the BWROG document. The proprietary information includes GEH loss-of-coolant accident (LOCA) analysis inputs and assumptions. GEH hereby requests that information in Enclosure 1 be withheld from public disclosure in accordance with provisions of 10 CFR 2.390 and 9.17. We have attached a redacted version (Enclosure 2) for public disclosure.

The BWROG requests NRC staff review of the submittal in accordance with Reference 1. The overall ECCS Suction Strainer Project Plan Schedule is based on an NRC review and Safety Evaluation Report (SER) within six months.

If you have any questions regarding this letter, please do not hesitate to contact me or Michael Iannantuono, BWROG Project Manager, at (910) 819-1956.

Respectfully,



6/27/13

Harry A. Goodman
Vice Chairman
BWR Owners' Group

cc: J. Golla, NRC Project Manager
F. P. Schiffler, BWROG Chairman
S. L. Scammon, BWROG ECCS SS Committee Chairman
K. A. McCall, BWROG Program Manager
M. A. Iannantuono, BWROG ECCS SS Committee Project Manager
BWROG Primary Representatives

The following commitments are established in this letter and associated attachments:

- RAI 1 S1 (b) ii – The BWR Owners' Group (BWROG) will evaluate blockage consequences with respect to LTR approved analysis and justification documented in the test results report.
- RAI 6 S1 – A scale thickness effects assessment will be made based on the bench test results.

- RAI 21(j) – After the blockage and debris on hot surface tests are performed, the BWROG proposes a specific BWR/2 assessment of clad scale heat transfer be evaluated.
- RAI 24 S1(a) – The BWROG will evaluate observed conditions of non-uniformities in water entering the fuel bundle from above that are not representative of the assumed distributed value of 50% blockage.
- RAI 24 S1(b) – Should testing provide evidence of similar quantities of debris deposition at multiple spacer locations, the BWROG will address the issue of multiple CCFL locations and cumulative delta pressure effects in further detail.
- RAI 27 S1(a) – The BWROG is committed to examining the Test 4 results in greater detail than merely the degree of blockage area, and submitting conclusions in the test report to the NRC to justify that the analytical assumptions are valid or conservative.
- RAI 27 S1 (b) – The BWROG intends to apply the test results to the analytical evaluation such that the PCT consequences remain bounded with respect to LTR approved analysis. This application includes the full range of both coolant and air flows, as well as the characteristics of the blockage.
- RAI 33 S1 – It is agreed that significant porous blockage requires different hydraulic loss assumptions, which would be determined by post-test results examination and justified in the test report.
- RAI 36 S1 – Once critical test parameters and dominant effects have been defined by sensitivity studies, limiting test cases can be constructed from the known variation of the source term conditions for the BWR fleet. The test results will either confirm the conservative assumptions used in the LTR analysis or require changes in the analysis to match the experimentally determined limiting conditions.
- RAI 50 S1 – The BWROG is planning additional bench top tests beyond those listed in NEDC-33608P to provide information on debris accumulation at fuel bundle spacer grid locations.

Enclosures:

1. Responses to Supplemental RAIs Associated with LTR NEDC-33608P, “Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects” – GEH Proprietary Information – Class III (Confidential)
2. Responses to Supplemental RAIs Associated with LTR NEDC-33608P, “Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects” – Non-Proprietary Information – Class I (Public)
3. Affidavit, dated June 2013

ENCLOSURE 3

BWROG-13032

Affidavit

GE-Hitachi Nuclear Energy Americas LLC

AFFIDAVIT

I, **Linda C. Dolan**, state as follows:

- (1) I am the Manager of Regulatory Compliance, GE-Hitachi Nuclear Energy Americas LLC (“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 the letter BWROG-13032, H. A. Goodman (BWR Owners’ Group) to the Document Control Desk (USNRC), Subject: Submittal of Responses to Supplemental RAIs Associated with Boiling Water Reactor Owners’ Group (BWROG) Licensing Topical Report NEDC-33608P, “Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects,” which to the best of my knowledge is to be submitted on or around June 28, 2013. GEH proprietary text in Enclosure 1, which is entitled “Responses to Supplemental RAIs Associated with LTR NEDC 33608P, ‘Boiling Water Reactor Emergency Core Cooling Suction Strainer In-Vessel Downstream Effects,’” is identified by a dotted underline inside double square brackets. [[This sentence is an example.^{3}]]. Figures containing GEH proprietary information 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 U.S.C. Sec. 552(b)(4), and the *Trade Secrets Act*, 18 U.S.C. 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 qualifies 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, 975 F.2d 871 (D.C. Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F.2d 1280 (D.C. Cir. 1983).
- (4) The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. Some examples of categories of information that 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;

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- b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
 - c. Information that reveals aspects of past, present, or future GEH customer-funded development plans and programs, resulting in potential products to GEH;
 - d. Information that discloses trade secret or potentially patentable subject matter for which it may be desirable to obtain patent protection.
- (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, not been disclosed publicly, and not been made available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary or confidentiality agreements that provide for maintaining the information in confidence. The initial designation of this information as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in the following paragraphs (6) and (7).
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, who is the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or who is the person most likely to be subject to the terms under which it was licensed to GEH. Access to such documents within GEH is limited to 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 or confidentiality agreements.
- (8) The information identified in paragraph (2), above, is classified as proprietary because it contains detailed methods, results, and conclusions regarding supporting evaluations of the effects on nuclear fuel performance of containment debris that bypasses the ECCS Suction Strainers for a GEH BWR. The analysis utilized analytical models and methods, including computer codes that GEH has developed, obtained NRC approval of, and applied to perform evaluations of containment debris effects on the nuclear fuel for a GEH BWR.

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The development of the evaluation processes along with the interpretation and application of the analytical results is derived from the extensive experience databases that constitute 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 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 20th day of June 2013.



Linda C. Dolan
Manager of Regulatory Compliance
GE-Hitachi Nuclear Energy Americas LLC