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Proprietary and Security Information Notice
This letter forwards proprietary information in accordance with 10CFR2.390. The balance of this letter may be considered non-proprietary and non-security-related upon the removal of Enclosures 2 and 4.

MFN 06-455 Supplement 1
Revision 1

Docket No. 52-010

August 20, 2008

U.S. Nuclear Regulatory Commission
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Subject: **Response to Portion of NRC Request for Additional Information Letter Number 37 Related to ESBWR Design Certification Application – Siting Issues – RAI Number 2.3-9 S01**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) revised response to the U.S. Nuclear Regulatory Commission (NRC) Supplemental Request for Additional Information (RAI) sent by NRC e-mail dated May 30, 2007 (Reference 2). The original response to RAI 2.3-9 S01 was provided in Reference 1. The revised response to RAI Number 2.3-9 S01 is addressed in Enclosures 1 and 2. The original RAI Number 2.3-9 was provided in Reference 3 to which the GEH response was provided in Reference 4.

Enclosure 1 contains GEH proprietary and sensitive information as defined by 10 CFR 2.390. GEH customarily maintains this information in confidence and withholds it from public disclosure. A non-proprietary version is provided in Enclosure 2.

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 proprietary and sensitive information in Enclosure 1 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 9.17. Enclosure 2 is the non-proprietary and non-sensitive version which is suitable for public disclosure.

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

References:

1. MFN 06-455 S01, *Response to Portion of NRC Request for Additional Information Letter Number 37 Related to ESBWR Design Certification Application – Siting Issues – RAI Number 2.3-9*, April 18, 2008.
2. E-mail from NRC (A. Johnson) to GE, RAI 2.3-9 S01, dated May 30, 2007.
3. MFN 06-201, Letter from U.S. Nuclear Regulatory Commission to David H. Hinds, GE, *Request for Additional Information Letter Number 37 Related to ESBWR Design Certification Application*, June 21, 2006.
4. MFN 06-455, *Response to Portion of NRC Request for Additional Information Letter Number 37 Related to ESBWR Design Certification Application – Siting Issues – RAI Number 2.3-9*, November 13, 2006.

Enclosures:

1. Response to Portion of NRC Request for Additional Information Letter No. 37 Related to ESBWR Design Certification Application – Siting Issues - RAI Number 2.3-9 S01– Proprietary and Security-Related Information

2. Response to Portion of NRC Request for Additional Information Letter No. 37 Related to ESBWR Design Certification Application – Siting Issues - RAI Number 2.3-9 S01 – Non-Proprietary and Non-Security-Related Version

3. Affidavit – David H. Hinds

cc:

AE Cubbage	USNRC (with enclosure)
RE Brown	GEH/Wilmington (with enclosure)
DH Hinds	GEH/Wilmington (with enclosure)
eDRF	0000-0081-1706 R2

MFN 06-455 S01
Revision 1

Enclosure 2

Response to Portion of NRC Request for Additional Information Letter No. 37 Related to ESBWR Design Certification Application

Siting Issues

RAI Number 2.3-9 S01

Non-Proprietary and Non Security-Related Version

Original response previously submitted under MFN 06-455 is included to provide historical continuity during review. Tables and figures from the original RAI response are not included.

NRC RAI 2.3-9

Provide figures drawn to scale and a description from which distance and heights may be approximated, highlighting postulated release locations to the environment, the location of the control room intake(s) and assumed unfiltered inleakage location(s). Include consideration of potential release locations resulting from loss of offsite power or other single failure. Are any of the straightline horizontal distances from a release location to the environment to a receptor less than 10 meters?

Response to RAI

The X/Q values assumed in DCD, Revision 1 did not take into account any ESBWR specific design considerations. Recently GE has performed a more detailed review of the ESBWR design and its impact to potential on-site dispersion factors (i.e., control room). GE has recently initiated design changes to ensure that the distance between the Reactor Building and the Control Building is at least 10 m.

Two locations were considered as potential unfiltered inleakage locations. The first is the louver located on the west wall on the 4650 mm elevation (Point "A"). These louvers are intended to provide cooling through natural circulation for the non-safety related equipment located on the 4650 mm elevation. For leakage from the turbine building (and condenser) the assumed inleakage is the closest point on the Control Building (Point "B"). [[

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The Control Room Air Intake location assumed for dispersion analyses was 3m west of line CA, located at the center of the building (Line C3). Control Building HVAC specification will be revised to ensure the intake location is within 3 m of

line CA. The Control Room Air Intakes are assumed to be located on the Control Building roof (Elevation 13500 mm). See Figure 2.
Several release locations were reviewed for the various events:

- Loss of Coolant Accident
  - Containment leakage to the Reactor Building was assumed to be a diffuse source released through the east face of the building. The Reactor Building face was projected to the east side of the stairwell in accordance with Regulatory Guide 1.194 guidance. [[ ]] As discussed previously, GE is pursuing design changes to ensure this distance is at least 10 m. See Figure 3.
  - Containment leakage though the PCCS was assumed to be released through the moisture separators located on the 27500 mm elevation. GE is implementing design changes to route the leakage through Seismic Category I ductwork to the Reactor Building roof. See Figure 4.
  - MSIV Leakage is released via the main Condenser, which is located in the Turbine Building. Two separate release scenarios are evaluated. First a diffuse release is assumed from the main Condenser. [[ ]] A second scenario is evaluated which assumes the Turbine Building remains intact. This scenario evaluates a diffuse source over the entire area of the Turbine Building [[ ]] See Figure 5.
- Fuel Handling Accident
  - One potential release location for a FHA is the Reactor Building, which was previously discussed for the LOCA.
  - The other postulated release location for a FHA is the Equipment (Cask) Doors that are located on the west side of the Fuel Building. [[ ]]
- Main Steam Line Break
  - The MSLB release location is assumed to be the Turbine Building [[ ]]
- Liquid Radwaste Tank Failure
  - The release point assumed for this event is the Radwaste Building, which is west of the Turbine Building. [[ ]]
- Instrument Line Break
  - The Instrument Line Break release location is assumed to be the Turbine Building [[ ]]

- Feedwater Line Break
  - The Feedwater Line Break release location is assumed to be the Turbine Building [[ ]].
- Reactor Water Cleanup Line Break
  - The RWCU line break is assumed to occur in the Reactor Building [[ ]]
- 1000 Failed Fuel Rods Analysis
  - There are two release locations for this event. One is the main condenser [[ ]] and the other is the off-gas system that vents through the main plant stack. Dispersion factors are only calculated for the main condenser, therefore those values are used in the analysis.
- Depressurization Valve Opening Event
  - The DPV event release is assumed from the Reactor Building [[ ]]

Table 1 contains inputs to evaluate dispersion factors using the ARCON96 computer code. A number of inputs are not included in the list since they will require site-specific information. The inputs are

- Direction of receptor to source (since the ESBWR "plant" north may not correspond to "true" north),
- Meteorological instrumentation information.

No changes to the DCD will be made as a result of this RAI.

NRC RAI 2.3-9 S01

Full Text [[Contains PROPRIETARY / SENSITIVE information]]:

a. *One of the release pathways discussed in the response to RAI 2.3-9 dated November 13, 2006, is the main plant stack, which is not part of the ESBWR standard plant design. Because the main plant stack is not part of the ESBWR standard plant design, the DCD should explicitly state that the COL applicant should confirm at the COL stage that the main plant stack EAB and LPZ X/Q site characteristic values are less than or equal to the ESBWR EAB and LPZ X/Q standard plant site design parameters.*

b. *The response to RAI 2.3-9 dated November 13, 2006 discusses potential release pathways to the environment (e.g., reactor building leakage; reactor building roof; turbine building condenser; turbine building leakage; fuel building cask door; radwaste building) and control room receptors (e.g., control room air intake; CB inleakage locations) for various infrequent events and accidents.*

   (i) *Please provide one scaled general arrangement drawing showing all potential release pathways and receptors. Plant north should be indicated on this drawing.*

   (ii) *Please provide bounding control room X/Q values for all source/receptor combinations as standard plant site design parameters in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1.*

c. *The response to RAI 2.3-9 dated November 13, 2006 provides a table of source/receptor inputs to the ARCON96 computer code for each source/receptor combination.*

   (i) *For each source/receptor combination, please add to the table of ARCON96 source/receptor inputs the building vertical cross-sectional area perpendicular to the wind for the buildings that have the largest impact on building wakes as discussed in the fifth item listed in Table A-2 of Regulatory Guide 1.194. This building area is used by ARCON96 to account for enhanced dispersion in the wake of buildings and may be different from the building area used to establish the initial diffusion coefficients for a diffuse area source.*

   (ii) *For each source/receptor combination, please add the direction from the receptor to the source in degrees from plant north to the table of ARCON96 source/receptor inputs.*

   (iii) *Please confirm that the "calculated distance to receptor" parameter identified in the table of ARCON96 source/receptor inputs is the horizontal distance to the release point.*

   (iv) *Please add the table of ARCON96 source/receptor inputs to the DCD for use by future COL applicants. A non-proprietary version of this table should be included in the DCD.*

d. *Several accidents are assumed to have release pathways to the environment through a diffuse area source (e.g., the FHA, LOCA containment leakage, and instrument line break are assumed to be diffuse source releases from the reactor building; the LOCA MSIV leakage, MSLB, and instrument line break are assumed to be diffuse source releases from the turbine building). Regulatory position 3.2.4.1 of Regulatory Guide 1.194 states that diffuse source modeling should be used only for those situations in which the activity being released is homogeneously distributed throughout the building and when the assume release rate from the building surface would be reasonably constant over the surface of the building.*

   (i) *Regulatory position 3.2.4.5 of Regulatory Guide 1.194 states that the height and width of the diffuse area source (e.g., the building surface) should be the maximum vertical and horizontal dimensions of the above-grade building cross-sectional area perpendicular to the line of sight from the building center to the control room intake. These dimensions should projected onto a vertical plane perpendicular to the line of sight and located at the closest point on the building surface to the receptor. Please confirm that this is the approach used to calculate the diffuse area sources for the reactor building and turbine building leakage pathways. [[*

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   (ii) *Since leakage is more likely to occur at a penetration, consideration should be given to the potential impact of building penetrations exposed to the environment. If the penetration release would be more limiting, the diffuse area source model should not be used. In particular, one of the assumed release pathways for the LOCA inside containment radiological analysis is MSIV leakage to the turbine building condenser. DCD Tier 2 Chapter 15.4.4.5.2.4 states that the two major points of release from the turbine building are expected to be (1) the truck doors at the far end of the turbine building and (2) the turbine building vent panels located midway on the turbine building on the side away from the reactor building. In contrast, the response to RAI 2.3-9 states that one of the release scenarios evaluated for MSIV leakage to the turbine building condenser is a diffuse release over the entire area of the turbine building. Please resolve this apparent conflict in the assumed MSIV leakage pathways to the environment by identifying all potential release pathways from the turbine building for all those accidents that have airborne releases in the turbine building and provide the appropriate ARCON96 source/receptor inputs.*

(iii) *The response to RAI 2.3-9 dated November 13, 2006 states that one potential release location for the FHA is the reactor building which was assumed to be a diffuse source. ESBWR Technical Specification 3.6.3.1 does not require the reactor building to be operable during Mode 6 (refueling). Please confirm that there are no other potential release pathways from the reactor building during refueling (e.g. and control room X/Q values that are higher than assuming a diffuse source release from the reactor building. If such release pathways are possible, provide the appropriate ARCON96 source/receptor inputs.*

e. *Airborne radiological releases from a number of the infrequent events (e.g., 1000 failed fuel rods, liquid containing tank failure) and accidents (e.g., FHA, instrument line break, MSLB) are assumed to occur in buildings (e.g., reactor building, turbine building, fuel building, radwaste building) whose exhaust may be discharged to the main plant stack. Please identify these infrequent event and accident scenarios and state in the DCD that the COL applicant should calculate and compare the main plant stack control room X/Q values to the control room X/Q values for all the other possible release pathways to ensure the bounding control room X/Q values are identified.*

f. The response to RAI 2.3-9 dated November 13, 2006 states that the instrument line break release location is assumed to be the turbine building whereas DCD Tier 2 Chapter 15.4.8.5.1 and Table 15.4-7 state that the release location for the instrument line break is assumed to be via the reactor building. Please clarify this apparent discrepancy.

g. [[

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h. One of the three potential unfiltered inleakage locations identified in the response to RAI 2.3-9 dated November 13, 2006 is the closest point from the turbine building and condenser to the control building (e.g., point "B" or the northwest corner of the control building). Please explain why this receptor location was not used to define the source/receptor configuration information presented in Table 1 to the response to RAI 2.3-9 for the turbine building condenser and turbine building leakage release pathways.

i. DCD Tier 2 Chapter 6.4.4 states that the initiation of the emergency mode of operation of the control room habitability area HVAC subsystem consists of (1) isolating the normal outside air intake and restroom exhaust and (2) starting one of the two emergency filter units which delivers filtered air from one of the two unique safety-related outside air intake locations. Please describe the relative location of these three outside air intakes (i.e., the normal mode air intake and the two emergency mode air intakes) to determine if they should be modeled as

one or more separate receptors. Also discuss whether the isolated normal outside air intake and restroom exhaust can be potential inleakage locations during the emergency mode of operation.

GEH Response, Revision 1:

Item a.
Since the issuance of MFN-06-455 (dated November 13, 2006), an ESBWR design change has occurred which removes the main plant stack and replaces it with three ventilation stacks. DCD Revision 5 includes detailed descriptions of the three ventilation stacks in the HVAC system description. Given that the three ventilation stacks are now part of the ESBWR standard plant design the reasoning for including an explicit statement about confirming the main plant stack X/Q is precluded. The locations and heights of the stacks are shown below.

Building Stack	Above Grade Stack Heights	Stack Location (Column-Line)

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The ARCON96 inputs associated with the three stacks have been included in Revision 5 of the DCD, Appendix 2A for use by future COL applicants in the confirmation of ESBWR bounding X/Q values. Appendix 2A directs the COL applicant to model all source\receptor pairs listed in Table 2A-2 in order to ensure that the X/Q values provided in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1 are bounding.

It is important to note that there is an existing COL applicant instruction provided in Subsection 2.0-1A of the DCD Tier 2, included in Revision 4, which states, "A COL applicant referencing the ESBWR DCD demonstrates that site characteristics for a given site fall within the ESBWR DCD site parameter values per 10 CFR 52.79 (Section 2.0)." In order to comply with 10 CRF 52.79 the COL applicant must confirm that site-specific X/Q values fall within corresponding values in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1 of Revision 5 of the DCD.

Item b.(i)
A scaled drawing showing all potential release pathways and receptors for use with Control Room radiological dose evaluations indicating ESBWR Plant North based on General Arrangement Drawing in Figure 2A-1 of DCD is provided in Revision 5 of the DCD in Appendix 2A.

Item b.(ii)
The assumed bounding control room X/Q values used for all dose consequence analyses presented in Chapter 15 of the DCD were included in Revision 4 of the in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1. Not all X/Q values for all of the source/receptor combinations are appropriate to include in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1 as they are bounded by the values already provided in those tables and are not utilized in a DBA analysis in Chapter 15 of the DCD. Revision 5 of the DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1 includes the addition of the X/Q values for the Technical Support Center.

Item c.(i through iv)
The DCD Tier 2 Table 2A-3 providing ARCON96 inputs has been revised to include the following.

- The building vertical cross-sectional areas perpendicular to the wind for the building that has the largest impact on building wakes as described in the fifth item listed in Table A-2 of Regulatory Guide 1.194.
- A clarification that the distance to receptor inputs are the horizontal distances to the release points in Appendix 2A Subsection 2A.2.3.

The DCD Tier 2 Appendix 2A, Table 2A-4 has been created to provide the directions from the receptors to the sources in degrees from ESBWR Plant North for all source receptor pairs in Table 2A-3.

Revision 5 of the DCD includes Appendix 2A for use by future COL applicants.

Item d.(i)
The values provided in MFN 06-455 submitted on November 13, 2006, reported the ARCON96 default value of [[

]] The plume-spread parameters (σ_y and σ_z) were conservatively established based on the length and height of the shortest face of the buildings containing the diffuse sources.

While the previous approach to the diffuse sources was conservative, in response to this RAI the heights and widths of the diffuse sources have been refined as described in Regulatory position 3.2.4.5 of Regulatory Guide 1.194 for accuracy and consistency

with the guidance. The refined values for the diffuse source widths, areas, and initial diffusion coefficients will not change bounding ESBWR X/Q values, however, they will be listed in the associated ARCON96 inputs for use by future COL applicants for verification of the ESBWR X/Q values that are provided in DCD Revision 5 Appendix 2A. Diffuse source areas are established based on dominant intake location. The diffuse sources modeled for DCD dose analyses for the Control Room are depicted in the figures below.

{{{ }}}

{{{ }}}

{{{ }}}

Item d.(ii)

During preparation of this RAI response, it was confirmed that the TB vent panels are not part of the ESBWR design. The text in DCD Subsection 15.4.4.5.2.4 was incorrectly stated. The TB truck doors have been included in Figure 2A-1 and in Table 2A-2, and the bounding TSC receptor (TSCW)/ TB truck door pair has been included in Tables 2A-3 and 2A-4.

GEH agrees that if the point source release from a penetration would be more limiting, the TB diffuse area source model should not be used. It has been assumed that the ESBWR Turbine Building should be conservatively treated as a diffuse source because preliminary analysis of the Turbine Building using ARCON96 indicated that the diffuse source model was more limiting than releases from the TB truck doors. The validity of the TB diffuse source model can be demonstrated by performing ARCON96 runs for point sources in the TB at those locations. Since Appendix 2A directs the COL

applicant to model all source\receptor pairs listed in Table 2A-3 in order to ensure that the X/Q values provided in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1 are bounding, the table of ARCON96 inputs includes parameters for the TB truck doors.

Since Appendix 2A contains the aforementioned instructions and parameters, DCD Revision 5 Chapter 15, Subsection 15.4.4.5.2.4, has been reworded to simply state that the releases from the Condenser/Turbine Building pathway are assumed to be ground level releases from a diffuse source in the Turbine Building.

Item d.(iii)

GEH agrees that if the point source release from a Reactor Building opening (an open equipment hatch, personnel air lock, open door, etc.) would be more limiting than the RB diffuse area source model should not be used.

The access doors are designed with self-closing devices, which close and latch the doors automatically and egress, and as such would not likely act as a point source for releases in the Reactor Building.

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For that reason, the COL applicant is instructed as shown below which is included in Subsection 2A.2.5 in Appendix 2A which is included in DCD Revision 5.

"The COL applicant shall confirm that during refueling none of the doors or personnel air locks on the East sides of the Reactor Building or Fuel Building could act as a point source that could result in Control Room X/Q values that are higher than the ESBWR X/Q values for a release in the Reactor Building. If X/Q values for a release from any door on the East sides of the Reactor Building or Fuel Building are not bounded by the ESBWR X/Q values for a release in the Reactor Building, the doors must be administratively controlled prior to movement of irradiated fuel bundles and during movement of irradiated fuel bundles. The administrative controls must be such that the doors and personnel air locks on the East sides of the Reactor Building or Fuel Building are promptly closed under conditions indicative of a fuel handling accident." (Section 2A.3, Item 2A.2.2-A)

Item e.
The main plant stack was considered as a release location for the Fuel Assembly Loading Error and the 1000 Failed Fuel Rod Analyses discussed in DCD Revision 4 Subsections 15.3.1 and 15.3.10 respectively. The main plant stack is no longer part of the ESBWR design (see the response to Item a).

The COL applicant is instructed to confirm all X/Q values provided in DCD Tier 1 Table 5.1-1 and Tier 2 Table 2.0-1 as previously discussed in Item a of this response, and executed by the instructions in Appendix 2A in Subsections 2A.2.4 and 2A.2.5 which state how the confirmation should be performed.

Item f.
The response to RAI 2.3-9 incorrectly identified the release location as the Turbine Building. The release location for the instrument line break (ILB) is the Reactor Building as a diffuse source. The response to RAI 2.3-9 (MFN-06-455 dated November 13, 2006) is superseded by this response.

Item g.
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Item h.
As a result of refinements to the ARCON96 modeling of the ESBWR, the Control Building louvers are considered to be the dominant inleakage pathway for all releases. The assumption is valid for the following reasons.

- Based on a review of CRHA Boundary penetration locations [[.

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- [[

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- [[

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Item i.
It has been judged that the three intakes should be modeled separately. The locations of the three outside intakes are as described in MFN-07-687 dated December 21, 2007. Based on the description provided there, the EFU intakes are assumed to be approximately [[ ]]. The Control Room Habitability Area HVAC (CRHAVs) is described in DCD Subsection 9.4.1.1, which states the following.

"The CRHAVS provides the following safety-related design basis functions:

- Monitors the CRHA air supply for smoke and radioactive particulate and/or iodine concentrations;
- Isolates the normal CRHA air supply and restroom exhaust, starts an EFU fan, and aligns the air supply through an EFU, upon a high radiation detection signal in the CRHA normal air supply, or upon an extended loss of AC power to support operation of a CRHA normal air supply fan; and
- Isolates the normal CRHA air supply and restroom exhaust upon detection of smoke in the CRHA normal air supply."

DCD Subsection 9.4.1.2 further states that the CRHAVS consists of two trains. Each train consists of one 100% capacity recirculation AHU, one 100% capacity outside air supply fan, one 100% capacity safety-related EFU, one 100% capacity safety-related EFU fan, and a redundant set of safety-related CRHA isolation dampers. While it is possible to have both trains running at the same

time, it would not be necessary to ever do so as either of them can supply 100% capacity. In addition, the X/Q values provided for the Control Building louver location bound the potential normal intake vent and bathroom exhaust inleakage locations (see Item h.).

The CRHAVS is the subject of Technical Specification 3.7.2, which has the following surveillance requirements.

- SR 3.7.2.4 Verify CRHA isolation dampers and each CRHAVS train actuate.
- SR 3.7.2.6 Perform required CRHA unfiltered air inleakage testing in accordance with the Control Room Habitability Area (CRHA) Boundary Program.

The COL applicant will identify any other possible inleakage locations during the tracer gas test performed for Technical Specification 5.5.13, as provided by DCD Chapter 16.

DCD IMPACT

DCD Tier 1, Table 5.1-1, and DCD Tier 2, Table 2.0-1 and Subsection 15.4.4.5.2.4 have been revised in Revision 5. In addition, new Appendix 2A is added to DCD Tier 2.

MFN 06-455 S01
Revision 1

Enclosure 3

Affidavit

GE Hitachi Nuclear Energy

AFFIDAVIT

I, **David H. Hinds**, state as follows:

(1) I am the 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 letter MFN 06-455, Supplement 1, Revision 1, Mr. Richard E. Kingston to U.S. Nuclear Regulatory Commission, "Response to Portion of NRC Request for Additional Information Letter No. 37 Related to ESBWR Design Certification Application ESBWR – Siting Issues - RAI Number 2.3-9, Supplement 1," dated August 20, 2008. GEH Proprietary Information is identified in Enclosure 1, "Response to Portion of NRC Request for Additional Information Letter No. 37 Related to ESBWR Design Certification Application – Siting Issues - RAI Number 2.3-9, Supplement 1 – GEH Proprietary Information," in dark red font and a dashed underline inside double square brackets. [[This sentence is an example.{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 of the proprietary determination. Specific information that is not so marked is not GEH proprietary. A non-proprietary version of this information is provided in Enclosure 2, "Response to Portion of NRC Request for Additional Information Letter No. 37 Related to ESBWR Design Certification Application – Siting Issues - RAI Number 2.3-9, Supplement 1 – Non-Proprietary Version."

(3) In making this application for withholding of proprietary information of which it is the owner, 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, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, 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 identifies the models and methodologies GEH will use in evaluating the consequences of design basis accidents (DBAs) for the ESBWR. GEH and its partners performed significant additional research and evaluation to develop a basis

for these revised methodologies to be used in evaluating the ESBWR over a period of several years at a substantial cost.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a 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 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 August 2008.

David H. Hinds
GE Hitachi Nuclear Energy