GE Hitachi Nuclear Energy

Richard E. Kingston
Vice President, ESBWR Licensing

PO Box 780 M/C A-65
Wilmington, NC 28402-0780
USA

T 910 819 6192
F 910 362 6192
rick.kingston@ge.com

MFN 09-189 Docket No. 52-010

March 18, 2009

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. 105 - Related To ESBWR Design Certification Application – RAI Number 21.6-105**

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 21.6-105 is addressed in Enclosure 1.

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

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

Reference:

1. MFN 07-460, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request For Additional Information Letter No. 105 Related To ESBWR Design Certification Application*, dated August 16, 2007.

Enclosure:

1. MFN 09-189 – Response to Portion of NRC Request for Additional Information Letter No. 105 - Related To ESBWR Design Certification Application – RAI Number 21.6-105

cc:	AE Cubbage	USNRC (with enclosure)
	RE Brown	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	eDRF	0000-0098-9326

Enclosure 1

MFN 09-189

Response to Portion of NRC Request for

Additional Information Letter No. 105

Related to ESBWR Design Certification Application

RAI Number 21.6-105

NRC RAI 21.6-105

Include a COL Applicant Item independently review the analysis of record In the COL application and provide the results of the review to the NRC.

Include a COL Applicant Item that requires the COL applicant to independently review the analysis of record in the COL application and provide the results of the review to the NRC. The purpose of the review is to determine if any changes have occurred In the codes that implement the NRC approved methods used in establishing the design basis or in the safety analysis for the ESBWR that would result in: (1) changes to any of the elements of the methods described in the DCD and associated licensing topical reports (as referenced); or (2) changes from a method described in the DCD and associated licensing topical reports (as referenced) to another method unless that method has been specifically approved by the NRC for the intended application for the ESBWR; or (3) changes in the execution of a methodology contrary to the conditions, limitations, or restrictions as described in the associated staff safety evaluation reports approving those methods specifically for the ESBWR.

GEH Response

No DCD changes will be made in response to this RAI because existing regulatory requirements ensure that current and future COL applications will be based upon the analysis of record for the ESBWR.

GEH already appropriately tracks methodology changes:

- Version and revision numbers are uniquely identified
- GEH obtains NRC approval for application
- GEH informs licensees

Regulations already impose sufficient controls:

- Regulatory Guide 1.206, C.IV.3.3 describes change process
- The COL applicant is already required to identify parts of the DCD not incorporated by reference
- The COL applicant is already required to identify departures from certified design including departure from methodology conditions, limitations or restrictions that are identified in Safety Evaluation Reports (SERs) for Licensing Topical Reports (LTRs) referenced in the DCD or SERs for specific sections of the DCD

Basis for GEH Position

GEH has discussed the action requested in this RAI with the initial COL applicants referencing the ESBWR to gain insights on the implementation of the ongoing regulatory processes that already require applicants or licensees to identify and manage departures and changes from the licensing and design basis of the certified design.

In summary, the regulations already impose (or will impose in the design certification rule) sufficient controls for handling changes and notifying the NRC. Because there are or will be specific regulatory requirements to address the concern discussed in the RAI, a COL action item, which does not have the force of a regulation, is not necessary to accomplish the initial and ongoing control of changes to codes and methods. Finally, it is GEH's responsibility to appropriately track changes to codes and methods and to inform our customers of such changes. GEH will seek NRC approval of such changes, when required. Regulatory processes govern those activities.

<u>How does GEH control changes to NRC-approved codes and methods, including conditions, limitations, and restrictions imposed by the NRC on the implementation of these codes and methods?</u>

First, GEH tracks all changes to its codes and methods of analyses and identifies each version and revision with a unique number. Therefore, it is and will be clear which version and revision was used for any evaluations reported in the DCD and in the future. It will also be clear whether there have been any changes since the NRC approved the DCD with specific versions/revisions identified within the DCD references, and whether the change constituted a change that requires NRC approval. This includes changes which affect Tier 2* designated LTRs requiring NRC approval prior to change implementation. GEH maintains a master of all codes and methods in accordance with the GEH and Global Nuclear Fuels (GNF) implemented 10 CFR 50, Appendix B Quality Assurance program. In limited circumstances, GEH/GNF may revise codes and methods for some reason deemed appropriate. All changes are evaluated for the impact on the results of the codes and standards and are tracked such that GEH/GNF is able to identify the original NRC-approved code or method and all subsequent changes, whether submitted for NRC review or not.

For ESBWR codes and methods, GEH may later determine that a generic change to the then-issued ESBWR design certification rule is warranted and may seek to amend the rule on the basis of standardization enhancement in accordance with 10 CFR 52.63. However, the regulatory process allows that Combined License applicants and licensees may include departures in an application or may make changes under the appropriate change process for any of the GEH codes and method changes.

<u>What Part 52 regulatory processes for departures or changes address this issue?</u>

Although the ESBWR design is not yet certified through rulemaking, the current COLA applicants are following regulatory processes outlined in existing design certification rules. These rules describe how to identify and request approval for departures and exemptions during the initial licensing phase, as well as for the change process during the construction and operational phases. For example, see Appendix A to Part 52. GEH expects that the ESBWR design certification rule will contain the requirements that are in Appendix A of Part 52 for the ABWR design certification and which are generic to all design certification rules for the controls placed on departures from the certified design and the change process once the design has been certified. The change process is also discussed in detail in NRC Regulatory Guide 1.206, C.IV.3.3.

The regulatory process for submitting a Combined License application referencing a standard Design Certification Document (generic DCD) begins with the incorporation by reference of the applicable appendix to Part 52 (i.e., the design certification rule). Alternately the applicant may reference a design certification application, as is the case for current applications referencing the ESBWR design certification application. The COLA must contain a plant-specific DCD based on the generic DCD (and in cases to date, incorporating by reference the generic DCD), with a report identifying any departures from and updates to the generic DCD. In this manner, the applicant would identify any instances where it is not incorporating by reference the DCD and its underlying information that is referenced therein. These instances include codes and methods that may have been changed since the original certification and for which the certification design has not been amended.

The COLA may seek an exemption (Tier 1) (see 10 CFR 52.63 (b)(1)) or request NRC approval of a departure (see 10 CFR 52.63 (b)(2)) in accordance with Section VIII, "Processes for Changes and Departures," where necessary. Further, the change process will include provisions to depart from Tier 2 for changes other than those that affect resolution of a severe accident issue or those requiring a license amendment. One of the criteria for a proposed Tier 2 departure following issuance of the Combined License is that a license amendment would be required if the proposed change would "[r]esult in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses." 10 CFR Part 52, Appendix A, Section VIII.B.5.b(8). The "Definitions" section of the ABWR rule defines a "departure from a method of evaluation" as follows:

> G. Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses means:
>
> (1) Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or
>
> (2) Changing from a method described in the plant-specific DCD to another method unless that method has been approved by NRC for the intended application.

Because codes and methods may change throughout the life of a plant, when and if a licensee uses an updated or a new and different code or method, the licensee would evaluate whether it is departing from a method of evaluation and whether NRC prior approval is necessary.

How does GEH treat conditions, limitations, or restrictions imposed by the NRC on the use of codes and methods?

GEH incorporates conditions, limitation, or restrictions identified in the NRC SER into the applicable LTR and will do the same for the ESBWR, either in the LTR or in the DCD itself. Under all circumstances, the conditions, limitations, or restrictions imposed

through the NRC approval would apply to the use of NRC-approved GEH codes and methods by any COL applicant. For any methodology that is incorporated by reference, the applicant or licensee would perform an assessment of any proposed changes to either depart or modify any of these conditions, limitations, or restrictions under the appropriate requirements of the design certification throughout the life of the plant in accordance with 10 CFR52.63 (b)(1) or (b)(2).

Why is the addition of a COL Applicant Item, as requested in the NRC RAI, not necessary?

As described in the design certification rule for the ABWR (10 CFR Part 52, Appendix A), Combined License action items "constitute information requirements but are not the only acceptable set of information in the FSAR" and an applicant "may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR." See 10 CFR 52.63 (b)(2). In addition, after issuance of a Combined License, "these items are not requirements for the licensee unless such items are restated in the FSAR." 10 CFR Part 52, Appendix A, II.E.3. Also see NRC Regulatory Guide 1.206, C.III.4 for more detailed guidance regarding COL action items.

Because the regulations require Combined License applicants to identify any departures in a COLA, an applicant is already required to ensure that the NRC is notified of any departures from the certified design, which would include any departures from conditions, limitations, or restrictions that are identified in the NRC Safety Evaluation Reports approving those methods for the ESBWR, which will be included in the LTR or in the DCD. The regulations also impose an ongoing requirement for the future that the licensees evaluate any proposed changes and determine if they might be departures from a method of evaluation and process any such changes in accordance with the change process that will be identified in the ESBWR design certification rule.

Thus, while including a COL action item in the DCD would alert a COLA applicant that it needs to review the analyses of record for the DCD, an applicant may depart from or omit that action item if it identifies such to the NRC. However, because the regulations impose a requirement that must be met, an applicant must identify to the NRC any departures from the certified design, including any changes in codes or methods. Upon issuance of a Combined License, the licensee must submit periodic reports of changes made under the change processes outlined in the design certification rule.

DCD Impact

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