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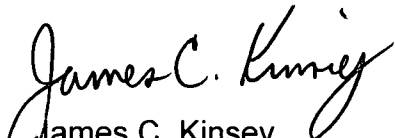
U.S. Nuclear Regulatory Commission
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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 132 Related to ESBWR Design Certification Application, RAI Number 19.1-116 S01**

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 NRC letter dated January 15, 2008 (Reference 1). Previous RAIs and responses were transmitted in References 2 and 3. The GEH response to RAI Number 19.1-116 S01 is in Enclosure 1.

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

Sincerely,


James C. Kinsey
Vice President, ESBWR Licensing

DO68
NRC

References:

1. MFN-08-040 – Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request For Additional Information Letter No. 132 Related To ESBWR Design Certification Application*. January 15, 2008.
2. MFN 07-507 – Response to Portion of NRC Request for Additional Information Letter No. 88 Related to ESBWR Design Certification Application – RAI Numbers 19.1-68, 19.1-70 through 19.1-80, 19.1-109 and 19.1-116. October 10, 2007.
3. MFN 06-551 – Letter from U.S. Nuclear Regulatory Commission to David H.Hinds, *Request for Additional Information Letter No. 88 Related to ESBWR Design Certification Application*. December 26, 2006.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 132 Related to ESBWR Design Certification Application, ESBWR Probabilistic Risk Assessment, RAI Number 19.1-116 S01

cc: AE Cabbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
DH Hinds GEH/Wilmington (with enclosure)
eDRFSection 0000-0081-6681

Enclosure 1

MFN 07-507, Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 132

Related to ESBWR Design Certification Application

ESBWR Probabilistic Risk Assessment

RAI Number 19.1-116 S01

NRC RAI 19.1-116

In Table 19.2-3 (Risk Insights and Assumptions) of Design Control Document (DCD) Tier 2, Chapter 19, please include a list of the design and operational requirements (e.g., ITAACs, Technical Specifications, reliability assurance program, COL action items) that can be identified through a systematic search of risk insights and assumptions in the PRA. Identification of such requirements is one objective pertaining to use of the PRA. The staff recognizes that identification of such requirements is an iterative process and the list cannot be finalized until all analyses, and staff review/evaluation, are completed and open issues are resolved. Please discuss.

GEH Response

DCD Chapter 19 Revision 4 Table 19.2-3 has been revised to identify design and operational requirements based on PRA risk insights and assumptions. A systematic method is used to identify the significant insights and assumptions of the PRA model. Sections 1.0 through 16.0 of NEDO-33201 are reviewed to identify instances where parametric, modeling and completeness uncertainties have required the use of assumptions. This provides a comprehensive accounting for assumptions from each phase of the PRA development. The final result is a list of assumptions that have a significant effect on the PRA model and its insights, and their dispositions. The dispositions are as follows:

- Design Requirement: an assumption that requires specific design details be preserved to maintain its validity.
- Operational Program: an assumption that requires specific operational procedures or training be served to maintain its validity.
- Insight: an assumption that provides significant information about the PRA model or its results that should be maintained in PRA model development, updates, and risk-informed applications.

Design Requirements are maintained through the design control process. Proposed design changes that affect the PRA are required to receive a PRA review to ensure that design requirements remain valid. Operational Program issues are incorporated into the human factors engineering program.

DCD/NEDO-33201 Impact

There is no impact to DCD Tier 2 Chapter 19 R4.

NEDO-33201 Table 19.2-3, Revision 2 has been revised to identify design and operational requirements based on PRA risk insights and assumptions

NRC RAI 19.1-116 S01

Assumptions in the ESBWR PRA pertaining to each of the systems modeled in the PRA are listed in Chapter 4 of NEDO-33201, Revision 2. These assumptions relate to the design, operation and control of the systems. In response to RAI 19.1-116, DCD, Chapter 19, Revision 4, Table 19.2-3 was revised to identify design and operational requirements based on PRA risk insights and assumptions. The staff requests additional information in order to understand why many of the assumptions in Chapter 4 of NEDO-33201, Revision 2 have not been reflected in Table 19.2-3 of Revision 4 to the Tier 2, DCD. The staff requests that GEH review the assumptions listed in each section of Chapter 4 of NEDO-33201, Revision 2; and, for those that relate to the design, operation and control of systems, structures and components, and have not been reflected in Table 19.2-3, to either disposition them in Table 19.2-3 or provide justification as to why they should not be reflected in Table 19.2-3.

GEH Response

NEDO-33201, Revision 2, Section 18-2 explains how the significant PRA assumptions in DCD, Revision 4, Table 19.2-3 were identified. It discusses the systematic method that is used to identify the significant assumptions of the PRA model. Sections 1.0 through 16.0 of NEDO-33201 are reviewed to identify instances where parametric, modeling and completeness uncertainties have required the use of assumptions. This includes the assumptions listed in each subsection of Section 4. Each assumption is evaluated for significance either qualitatively, or by means of a sensitivity study. An assumption is dispositioned as significant if an alternate method or value could be used that would affect the significant results and conclusions of the PRA that are discussed in DCD Tier 2 Section 19. NEDO 33201 Revision 2, Table 18-4 lists the PRA assumptions that are considered, including the ones that are dispositioned as not significant. DCD Tier 2 Table 19.2-3 contains the assumptions that are significant.

DCD/NEDO-33201 Impact

No change to DCD Tier 2, Revision 5 will be included in response to this RAI.

No change to NEDO-33201, Rev. 3 will be included in response to this RAI.