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MFN 06-449
Supplement 1

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Subject: **Response to NRC Request for Additional Information Related to Letter No. 68, ESBWR Design Certification Application – DCD Section 8.3 –Electric Power - RAI Numbers 8.3-16 S01, 8.3-30 S01, and 8.3-31 S01**

Enclosure 1 contains supplemental responses to the subject RAIs resulting from a January 8, 2007 e-mail request from the NRC (Reference 1). GE's original response was transmitted via the Reference 2 letter.

If you have any questions or require additional information regarding the information provided here, please contact me.

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

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Reference:

1. Email from NRC, "*Staff Comments - Responses to Letter #65*", dated January 8, 2007
2. MFN 06-449, *Response to Portion of NRC Request for Additional Information Letter No. 68 – Electric Power – RAI Numbers 8.3-1 through 8.3-46 and 8.3-48,* dated November 21, 2006

Enclosure:

1. MFN 06-449 Supplement 1, Response to Portion of NRC Request for Additional Information Related to ESBWR Design Certification Application – DCD Section 8.3 – RAI Numbers 8.3-16 S01, 8.3-30 S01, and 8.3-31 S01

cc: AE Cubbage USNRC (with enclosures)
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MFN 06-449 Supplement 1

Enclosure 1

Response to Portion of NRC Request for Additional Information Related to ESBWR Design Certification Application

DCD Section 8.3
RAI Numbers 8.3-16 S01, 8.3-30 S01, and 8.3-31 S01

For historical purposes, the original text of RAIs 8.3-16, 8.3-30. 8.3-31 and the GE responses are included preceeding each supplemental response. Any original attachments or DCD mark-ups are not included to prevent confusion.

NRC RAI 8.3-16:
Standby Onsite ac Power Supply Consensus Standards (DCD Tier 2, Rev. 1, Section 8.3.1.1.8). Identify the industry consensus standards that will be used for the design, installation, pre-op testing, operation maintenance and surveillance testing. In particular, address each of the surveillance requirements of IEEE 387 and Regulatory Guide 1.9.

GE Response:
Revision 2 to DCD Tier 2, Subsection 8.3.1.1.8 was revised and clarified to reflect a diesel generator design with defense in depth and COL applicant requirement tables were added for loading and sequencing. The ESBWR standard design does not credit safety-related diesel generators; thus, the surveillance requirements of IEEE 387 and Regulatory Guide 1.9 is not applicable to the ESBWR standard design. The standby onsite AC Power system will be designed, constructed, maintained and tested to ensure that it is reliable and available. Refer to Chapter 14 for ESBWR pre-op testing.

No additional DCD Tier 2 changes will be made to Chapter 8 in response to this RAI.

NRC RAI 8.3-16 Supplement 1

The response should address the surveillance requirements in Regulatory Guide 1.9 and IEEE 387 applicable to the diesel generators.

GE Response:

As discussed with the Staff in the teleconference conducted March 20, 2007, the Staff has a better understanding why GE has concluded that an evaluation was performed of the ESBWR design in accordance with 10 CFR 50.36. This evaluation determined the SSCs requiring inclusion in the ESBWR Technical Specifications. The results of this evaluation did not require inclusion of the standby diesel generators into the ESBWR Technical Specifications (see RAI 16.0-1, transmitted to the NRC by letter MFN 06-263, dated August 8, 2006).

The RTNSS evaluation of the ESBWR has been completed and submitted to the NRC as the response to RAI 19.1.0-2 (see letter MFN 07-066, dated January 30, 2007). The standby diesel generator system has been classified as a RTNSS system and the level of regulatory oversight for this function should be Regulatory Availability Specifications.

These availability specifications will define the periodic surveillance and testing that will be performed. These specifications will be submitted to the NRC as part of the ESBWR's Chapter 19, Appendix-A submittal. Regulatory Guide 1.9 and IEEE 387 will be considered as input when developing these specifications, but will not be viewed as regulatory requirements, since they address safety-related emergency diesel generators and the ESBWR standby diesel generators are nonsafety-related.

DCD Impact:

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

NRC RAI 8.3-30:
GDC 17, Electric Power System (Loss of the Main Generator). Describe any limits on the main generator MVAR output such that loss of the main generator will not result in unacceptable voltage in the local switchyard. Describe any auxiliary transmission system equipment, such as capacitor banks, that may be required to offset loss of MVAR support on loss of the main generator.

GE Response:
Subsection 8.2.4.10 of DCD Tier 2, Revision 2, states, "The Reliability and Stability Study, will be provided in the COL application as a supporting document to the COLA." Currently, the ESBWR clients are providing the data required by FERC, to the grid owners, for the first phase of the feasibility study.

No additional DCD Tier 2 changes will be made in response to this RAI.

NRC RAI 8.3-30 Supplement 1

The response should confirm that the feasibility study will address the ESBWR minimum transmission voltage requirements in addition to the system stability requirements.

GE Response:

As discussed with the Staff in the teleconference conducted March 20, 2007, the Staff now understands why GE has concluded that Subsection 8.2.4.9 of DCD Tier 2, Revision 3 requires that the COL applicant conduct a Reliability and Stability Study. This study will address minimum transmission voltage requirements.

DCD Impact:

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

NRC RAI 8.3-31:
Physical Identification of Safety-Related Equipment (DCD Tier 2, Rev. 1, Section 8.3.1.3). Clarify the discussion on cable separation implies that there will be nine raceway separation classes: four Divisions, four Division-Associated and one non-Class 1E raceway.

GE Response:
DCD Tier 2, Revision 2, Subsection 8.3.1.3 deletes any discussion of nine raceway separation classes.

No additional DCD Tier 2 changes will be made in response to this RAI.

NRC RAI 8.3-31 Supplement 1

The response should be expanded to clarify how many separation groups will be required.

GE Response:

As discussed with the Staff in a teleconference conducted March 20, 2007, the staff has a better understanding why GE has concluded that the cables will be separated into four safety-related divisional cable raceways of 120 VAC and low voltage instrument cables, as stated in Subsection 8.3.1.3. Nonsafety-related cable raceways are separate from safety-related divisional raceways. In addition, circuits that are routed in individual unique conduits/raceways are identified in Subsection 8.3.1.4.1.

The ESBWR design has no associated cables, consistent with DCD Tier 2, Revision 3, Subsection 8.3.1.3.1.

During the teleconference of March 20, 2007, the Staff questioned if the ESBWR would reference IEEE 422. IEEE 422 was withdrawn by the IEEE on March 17, 1994 and is no longer endorsed by the IEEE. Therefore, IEEE 422 has not ever been included in the ESBWR design.

DCD Impact:

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