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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 50 Related to ESBWR Design Certification Application – Initial Test Program – RAI Numbers 14.2-15 through 14.2-21**

Enclosure 1 contains GE's response to the subject NRC RAIs transmitted via the Reference 1 letter.

If you have any questions about the information provided here, please let me know.

Sincerely,

Kathy Sedney for

David H. Hinds
Manager, ESBWR

D068

Reference:

1. MFN 06-300, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 50 Related to ESBWR Design Certification Application,* August 16, 2006

Enclosure:

1. MFN 06-430 – Response to Portion of NRC Request for Additional Information Letter No. 50 Related to ESBWR Design Certification Application – Initial Test Program – RAI Numbers 14.2-15 through 14.2-21

cc: AE Cubbage USNRC (with enclosures)
GB Stramback GE/San Jose (with enclosures)
eDRF 0000-0059-5734

Enclosure 1

MFN 06-430

Response to Portion of NRC Request for

Additional Information Letter No. 50

Related to ESBWR Design Certification Application

Initial Test Program

RAI Numbers 14.2-15 through 14.2-21

NRC RAI 14.2-15

The staff requests additional information concerning the structures, systems,and components (SSCs), and design features which are candidates for proposed exemptions from operating license conditions requiring NRC prior approval for major test changes. These SSCs and design features are listed in Subsection 14.2.9 of the ESBWR DCD Tier 2, "COL Information." Provide the basis for exemption of each of the systems listed in Subsection 14.2.9.

GE Response

This paragraph (3rd paragraph in 14.2.9, beginning with "The COL Applicant shall...") will be deleted. The 4th paragraph will be revised as shown below. The list of specific SSCs that are candidates for proposed exemptions will be removed from 14.2.9.

DCD Impact

DCD Tier 2, Subsection 14.2.9, fourth paragraph, will be revised as follows:

> Regulatory Guide 1.68 specifies criteria (see Regulatory Position C.1) for determining what structures, systems, components and design features are required to be tested during the power ascension test phase in accordance with the requirements therein. Testing of such structures, systems, components and design features is then subject to license conditions requiring NRC prior approval for major test changes. The COL applicant shall provide a list of any tests to be performed as part of the power ascension test phase that are proposed to be exempt from operating license conditions requiring NRC prior approval for major test changes, and the basis for the exemption.

NRC RAI 14.2-16

Please include a COL action item to provide complete, detailed information regarding the staff responsibilities, authorities, and personnel qualifications for conducting the initial test program in accordance with RG 1.68, to ensure the plant owner/operator provides the necessary information to be reviewed by the NRC staff at the time of the COL application.

GE Response

An action item will be added in Subsection 14.2.9 for the COL Holder to make available 60 days prior to use, the responsibilities of the organization that will carry out the test program, methods and plans for providing the necessary manpower, and a description of the staff responsibilities, authorities and personnel qualifications for conducting the initial test program.

DCD Impact

DCD Tier 2, Subsection 14.2.9 will be revised as noted.

NRC RAI 14.2-17

Please include a COL action item to provide complete, detailed information regarding the development, review, and approval of test procedures in accordance with RG 1.68, to ensure the plant owner/operator provides the necessary information to be reviewed by the NRC staff at the time of the COL application.

GE Response

An action item will be added in Subsection 14.2.9 to provide a startup administrative manual that delineates the development, review and approval of test procedures per Appendix C of RG 1.68. The approved test procedures will be provided by the COL Holder for NRC staff review approximately 60 days before their intended use.

DCD Impact

DCD Tier 2, Subsection 14.2.9 will be revised as noted.

NRC RAI 14.2-18

Please include a COL action item to provide complete, detailed information regarding the utilization of reactor operating and testing experience in accordance with RG 1.68, to ensure the plant owner/operator provides the necessary information to be reviewed by the NRC staff at the time of the COL application.

GE Response

An action item will be added in Subsection 14.2.9 for the COL Holder to make available 60 days prior to use, a startup administrative manual that delineates the utilization of previous reactor operating and testing experience in the development of the test procedures in accordance with RG 1.68.

DCD Impact

DCD Tier 2, Subsection 14.2.9 will be revised as noted.

NRC RAI 14.2-19

Please include a COL action item to provide complete, detailed information regarding the trial use of operating and emergency procedures in accordance with RG 1.68, to ensure the plant owner/operator provides the necessary information to be reviewed by the NRC staff at the time of the COL application.

GE Response

An action item will be added in Subsection 14.2.9, for the COL Holder to make available 60 days prior to use, a startup administrative manual that requires the development of plant operating and emergency procedures prior to fuel loading, and their application during the test program, consistent with section C.7 of RG 1.68.

DCD Impact

DCD Tier 2, Subsection 14.2.9 will be revised as noted.

NRC RAI 14.2-20

Please include a COL action item to provide complete, detailed information regarding the development of the test program schedule and sequence in accordance with RG 1.68, to ensure the plant owner/operator provides the necessary information to be reviewed by the NRC staff at the time of the COL application.

GE Response

An action item will be added in Subsection 14.2.9 for the COL Holder to make available 60 days prior to use, a startup administrative manual that defines requirements for the test program schedule consistent with section C.5 of RG 1.68 and the test sequence, consistent with Appendix A of RG 1.68.

DCD Impact

DCD Tier 2, Subsection 14.2.9 will be revised as noted.

NRC RAI 14.2-21

The specifics of the startup tests relating to test methodology, plant prerequisites, initial conditions, acceptance criteria, and analysis techniques are responsibility of the plant owner/operator. Please include a COL action item to provide complete, detailed information regarding the initial startup testing phase in accordance with RG 1.68, to ensure the plant owner/operator provides the necessary information to be reviewed by the NRC staff at the time of the COL application.

GE Response

An action item will be added in Subsection 14.2.9 for the COL Holder to make available 60 days prior to use, a startup administrative manual that defines requirements for the test methodology, prerequisites, initial conditions, acceptance criteria, and analysis techniques consistent with RG 1.68

DCD Impact

DCD Tier 2, Subsection 14.2.9 will be revised as noted.

14.2.9 COL Information

The preceding discussion of preoperational and startup tests was limited to those systems and components within, or directly related to, the ESBWR. Other testing, with respect to site-specific aspects of the plant, is necessary. Testing of such systems and components should be adequate to demonstrate conformance to such requirements as defined throughout the specific chapters of the SSAR. Below are systems that may require such testing:

- Electrical switchyard and equipment;
- The site security plan;
- Personnel monitors and radiation survey instruments; and
- The automatic dispatcher control system (if applicable).

Also to be supplied by the COL applicant is the startup administration manual described in Subsection 14.2.2, which describes, among other things, what specific permissions are required for the approval of test results and the permission to proceed to the next testing plateau.

Regulatory Guide 1.68 specifies criteria (see Regulatory Position C.1) for determining what structures, systems, components and design features are required to be tested during the power ascension test phase in accordance with the requirements therein. Testing of such structures, systems, components and design features is then subject to license conditions requiring NRC prior approval for major test changes. The COL applicant shall also provide a list of those tests to be performed as part of the power ascension test phase that are proposed to be exempt from operating license conditions requiring NRC prior approval for major test changes, and the basis for the exemption.

14.2.9.1 Test Procedures/Test Program/Startup Administrative Manual

The COL holder will make a startup administrative manual available to the NRC 60 days prior to use that:

(1) the responsibilities of the organization that will carry out the test program, methods and plans for providing the necessary manpower, and a description of the staff responsibilities, authorities and personnel qualifications for conducting the initial test program.
(2) Delineates the development, review and approval of test procedures per Appendix C of RG 1.68. The site approved test procedures will be provided for NRC staff review approximately 60 days before their intended use.
(3) Delineates utilization of reactor operating and testing experience in the development of the test procedures.
(4) Requires the development of plant operating and emergency procedures prior to fuel loading, and their application during the test program, consistent with section C.7 of RG 1.68.
(5) Defines requirements for the test program schedule consistent with section C.5 of RG 1.68 and the test sequence, consistent with sections 1 through 5 in Appendix A of RG 1.68.

(6) Defines requirements for the test methodology, prerequisites, initial conditions, acceptance criteria, and analysis techniques consistent with RG 1.68.

14.2.10 References

See Subsection 14.2.3 for a list of applicable Regulatory Guides.