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**Subject: Response to Portion of NRC Request for Additional Information
Letter No. 258 - Related To ESBWR Design Certification
Application – RAI Numbers 14.2-70 Supplement 1 and 14.2-73
Supplement 1**

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 Numbers 14.2-70 Supplement 1 and 14.2-73 Supplement 1 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

DOB
NRC

References:

1. MFN 08-746, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request For Additional Information Letter No. 258 Related To ESBWR Design Certification Application*, dated September 25, 2008.
2. MFN 07-473, Letter from James C. Kinsey to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 95 – Related to ESBWR Design Certification Application – RAI Numbers 14.2-64 through 14.2-66, 14.2-68 through 14.2-73, 14.2-76, 14.2-80*, dated September 11, 2007.
3. MFN 08-188, Letter from James C. Kinsey to U.S. Nuclear Regulatory Commission, *Response to January 16, 2008 Telephone Call with NRC Staff Regarding ESBWR DCD Section 14.2 RAIs*, dated March 1, 2008.

Enclosure:

1. MFN 09-016 – Response to Portion of NRC Request for Additional Information Letter No. 258 - Related To ESBWR Design Certification Application – RAI Numbers 14.2-70 S01 and 14.2-73 S01

cc: AE Cubbage USNRC (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
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Enclosure 1

MFN 09-016

Response to Portion of NRC Request for

Additional Information Letter No. 258

Related to ESBWR Design Certification Application

RAI Numbers 14.2-70 S01 and 14.2-73 S01

NRC RAI 14.2-70 S01

Describe the SSLC major functions that will be tested.

The staff determined that, regardless of I&C hardware/software that will be used, the DC applicant should describe the safety system logic control (SSLC) major functions that will be tested in DCD Tier 2 Section 14.2.8.1.6.

In accordance with RG 1.68 and SRP 14.2, the DC applicant should include testing of the channel response time or sensor calibration and testing for the (SSLC) system channels and sensors in the SSLC preoperational test description.

GEH Response

GEH understands the request but feels that further revisions to Subsection 14.2.8.1.2 are not required. MFN 08-188 ("Response to January 16, 2008 Telephone Call with NRC Staff Regarding ESBWR DCD Section 14.2 RAIs" dated March 1, 2008) responded to RAI 14.2-70 stating that DCD Tier 2 Subsection 14.2.8.1.6 was a generic test plan and would not contain specific tests that will be conducted. However GEH committed to revising Subsection 14.2.8.1.6 to include, under "General Test Methods and Acceptance Criteria", the following:

- Verify proper operation of instrumentation and controls in appropriate design combinations of logic and instrument channel trip; and
- Verify bypass logic and bypass indications.

This addition to Subsection 14.2.8.1.6 was implemented in DCD Tier 2 Revision 5.

The referenced letter also discussed why Subsection 14.2.8.1.6 was not specific depending on the hardware/software platform selected. It was also pointed out that the NRC would have access to the detailed preoperational tests as part of the design implementation process. DCD Tier 2 Revision 5 currently reflects that commitment.

In addition, DCD Tier 2 Subsection 7.2.1.4.2 is an example of the specific types of tests that verify proper operation of instrumentation and controls in appropriate design combinations of logic and instrument channel trips, including channel response time or sensor calibration and testing in the preoperational test phase.

DCD Impact

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

NRC RAI 14.2-73 S01

Describe the major function of the LD&IS controls, interlocks, and bypasses

In DCD Tier 2, Section 14.2.8.1.8, the DC applicant should describe the major functions of the leak detection and isolation system (LD&IS) and reactor protection system (RPS) controls, interlocks and bypasses that are verified in the LD&IS and RPS ITAAC. This includes the major LD&IS and RPS control, interlock and bypass functions described in Tier 1 Tables 2.2.7-3, 2.2.7-4, 2.2.12-4 and 2.2.12-5.

GEH Response

GEH understands the request but feels that further revisions to Subsection 14.2.8.1.9 are not required. MFN 08-188 responded to RAI 14.2-73 stating that DCD Tier 2 Revision 4 (and 5) Subsection 14.2.8.1.8 lists the LD&IS preoperational functional logic tests that address your concerns. Similarly Subsection 14.2.8.1.9 documents the RPS preoperational tests. These overlapping tests are also addressed in DCD Tier 1 Table 2.2.12-5 as part of LD&IS ITAAC # 4 and DCD Tier 1 Table 2.2.7.4 as part of the RPS Controls, Interlocks (System Interfaces), and Bypasses ITAAC # 3.

The LD&IS and RPS controls, interlocks and bypasses are also described in DCD Tier 1 Tables 2.2.12-4 and 2.2.7-3 respectively.

DCD Impact

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