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MFN 07-698

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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application - Preservice and Inservice Inspection and Testing - RAI Number 6.6-8**

Enclosure 1 contains the GE Hitachi Nuclear Energy (GEH) response to the subject NRC RAI transmitted via the Reference 1 letter.

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

Sincerely,

James C. Kinsey

James C. Kinsey
Vice President, ESBWR Licensing

D068
NRO

Reference:

1. MFN 07-327, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application*, May 30, 2007

Enclosure:

1. MFN 07-698 - Response to Portion of NRC Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application - Preservice and Inservice Inspection and Testing - RAI Number 6.6-8

cc:

AE Cubbage	USNRC (with enclosures)
GB Stramback	GEH/San Jose (with enclosures)
RE Brown	GEH/Wilmington (with enclosures)
eDRF	0000-0076-4184

Enclosure 1

MFN 07-698

Response to Portion of NRC Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application

Preservice and Inservice Inspection and Testing

RAI Number 6.6-8

NRC RAI 6.6-8:

DCD, Tier 2, Revision 3, Section 6.6.3.1 indicates that all of the items selected for inservice examination will receive a preservice examination in accordance with ASME Section XI, IWC-2200 and IWD-2200 with the exception of the examinations specifically excluded by ASME Section XI from preservice examination. For the aforementioned exception to preservice examination, the applicant provides examples such as the visual VT-2 examinations for Category C-H and D-A. DCD, Tier 2, Revision 3, Section 5.2.4 indicates that the design to perform preservice inspection is based on the requirements of ASME Code, Section XI, as specified in Table 1.9-22. Table 1.9-22 indicates that the above referenced Code is the ASME Code, Section XI, 2001 Edition through the 2003 Addenda. The 2001 Edition through 2003 Addenda of ASME Code, Section XI, IWD-2200, Preservice Examination, states that all examinations required by this Article (with the exception of Examination Category D-B of Table IWD-2500-1) shall be performed completely, once, as a preservice examination requirement prior to initial plant startup.

It appears that the applicant has made references to the 1989 Edition of ASME Code, Section XI, regarding examination Category D-A. The staff notes that there have been other instances where the applicant referenced examination categories from the 1989 ASME Code. In RAI 5.2-56, the staff requested that the applicant update references to examination categories that were apparently referenced from the 1989 Code.

Given that GE has indicated that the information it has supplied is based on the 2001 Edition, through the 2003 Addenda of ASME Section XI:

A. Revise the DCD, Tier 2, Section 6.6 to reference the appropriate examination categories for the 2001 Edition through the 2003 Addenda.

B. Verify that a complete review has been conducted of the DCD Sections 5.2.4 and 6.6 to ensure that all references to ASME Section XI are consistent with the 2001 edition through the 2003 Addenda of ASME Section XI.

GEH Response:

A complete review of DCD Tier 2, Revision 4, Subsection 5.2.4 and Section 6.6 was performed, and DCD Tier 2, Subsections 5.2.4.5, 6.6.3.1, 6.6.5, 6.6.6.1, and 6.6.6.2 will be revised consistent with ASME B&PV Code Section XI, 2001 Edition through the 2003 Addenda. These changes include the correction of "D-A" to "D-B" in Subsection 6.6.3.1, as requested.

DCD Impact:

DCD Tier 2, Subsections 5.2.4.5, 6.6.3.1, 6.6.5, 6.6.6.1, and 6.6.6.2 will be revised as shown in the attached markup.

5.2.4 Preservice and Inservice Inspection and Testing of Reactor Coolant Pressure Boundary

5.2.4.5 Evaluation of Examination Results

[DCD Tier 2, Subsection 5.2.4.5, Second Paragraph]

Components containing flaws or relevant conditions and accepted for continued service in accordance with the requirements of IWB-3132.43 or IWB-3142.4 are subjected to successive period examinations in accordance with the requirements of IWB-2420 (b) and (c). Examinations that reveal flaws or relevant conditions exceeding Table IWB-3410-1 acceptance standards are extended to include additional examinations in accordance with the requirements of IWB-2430.

6.6.3 Examination Categories and Methods

6.6.3.1 Examination Categories

[DCD Tier 2, Subsection 6.6.3.1, Second Paragraph]

For preservice examination, all of the items selected for inservice examination are performed once in accordance with ASME Section XI, IWC-2200 and IWD-2200, with the exception of the examinations specifically excluded by ASME Section XI from preservice requirements, such as the visual VT-2 examinations for Category C-H and D-~~A~~B.

6.6.5 Evaluation of Examination Results

[DCD Tier 2, Subsection 6.6.5]

The evaluation of Class 2 component examination results is consistent with ASME Section XI, IWA-~~2~~3000. Examination results are evaluated in accordance with ASME Section XI, IWC-3000 for Class 2 components, with repairs based on the requirements of IWA-4000. Examination results are evaluated in accordance with ASME Section XI, IWD-3000 for Class 3 components, with repairs based on the requirements of IWA-4000.

Class 2 components containing flaws or relevant conditions and accepted for continued service in accordance with the requirements of IWC-3122.3 or IWC-3132.3, and Class 3 components in accordance with IWD-3000 requirements, are subjected to successive period examinations in accordance with the requirements of IWC/IWD-2420 (b) and (c). Examinations of Class 2 and 3 components that reveal flaws or relevant conditions exceeding Table IWC-3410-1 or IWD-3000 acceptance standards, respectively, are extended to include additional examinations in accordance with the requirements of IWC/IWD-2430.

6.6.6 System Pressure Tests

6.6.6.1 System Leakage Test

[DCD Tier 2, Subsection 6.6.6.1]

As required by Section XI, IWC-2500 for category C-H and by IWD-2500 for category D-B a system leakage test is performed in accordance with IWC-5220 on Class 2 systems, and IWD-5220~~0~~1 on Class 3 systems. The test includes all Class 2 or 3 pressure retaining components and piping within the boundaries defined by IWC-5222 and IWD-52~~22~~40. The test is performed once during each inspection period as defined in Tables IWC-2412-1 and IWD-2412-1 for Program B. The system leakage test includes a VT-2 examination in accordance with IWA-5240. The system leakage test is conducted at the system pressure during operation or the test pressure used for systems that are not required to function during normal operation. The system hydrostatic test, when performed, is acceptable in lieu of the system leakage test.

6.6.6 System Pressure Tests

6.6.6.2 Hydrostatic Pressure Tests

[DCD Tier 2, Subsection 6.6.6.2]

A system hydrostatic test may be performed in lieu of a system leakage test, and when required for repairs, replacements, and modifications per IWA-4540. The test includes all Class 2 or 3 pressure retaining components and piping within the boundaries defined by IWC-5222 and IWD-52~~22~~40 or the boundary of a repair or replacement as applicable.