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MFN 08-240

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Subject: Response to Portion of NRC Request for Additional Information Letter No. 152 Related to ESBWR Design Certification Application - Compliance with ASME Code - RAI Number 5.2-69

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
Vice President, ESBWR Licensing

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NRO

Reference:

1. MFN 08-121, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 152 Related to ESBWR Design Certification Application*, February 11, 2008

Enclosure:

1. MFN 08-240 - Response to Portion of NRC Request for Additional Information Letter No. 152 Related to ESBWR Design Certification Application - Compliance with ASME Code - RAI Number 5.2-69

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Enclosure 1

MFN 08-240

**Response to Portion of NRC Request for
Additional Information Letter No. 152
Related to ESBWR Design Certification Application**

Compliance with ASME Code

RAI Number 5.2-69

NRC RAI 5.2-69:

DCD Tier 2, Rev. 4, Section 10.1.1.2 provides a list of components in the balance of plant that are in accordance with the ASME BPV Section VIII. Please verify that the FWT control system piping is considered integral to the high pressure feedwater heaters and meets ASME BPV Section VIII requirements. Please update the DCD in the next revision to clarify that the FWT control system piping meets these requirements.

GEH Response:

The current design of the No.7 feedwater heaters is in accordance with the applicable ASME Boiler and Pressure Vessel Code Section. The following discussion is intended to clarify the system grouping of the various components and piping which comprises the Feedwater Temperature control system as it is referred to above.

The portion of the No. 7 feedwater heaters, which are comprised of the shell and tubes, are part of the condensate and feedwater system. This portion is designed in accordance with ASME Boiler and Pressure Vessel Code Section VIII "Rules for Construction of Pressure Vessels". Section VIII Subsection U-1(c)(2)(d) excludes structures whose primary function is the transport of fluids from one location to another within a system of which it is an integral part, that is, piping systems. DCD, Rev. 4, Subsection 10.4.7.2.2 states:

"All pressure retaining components of the C&FS are designed and constructed in accordance with applicable codes as referenced in Section 3.2"

DCD, Rev. 4, Subsection 3.2.3.4 states:

"Generally, design requirements for Nonsafety-Related equipment are based on applicable industry codes and standards as summarized in Table 3.2-3"

Table 3.2-3, "Quality Group Designations – Codes and Industry Standards" indicates Quality Group D pressure vessels and heat exchangers are to be designed in accordance with ASME Section VIII Division I.

The high pressure feedwater heaters are Quality Group D as shown on Figure 3.2-2 and in Table 3.2-1, "Classification Summary" for N21, and are designed in accordance with ASME BPV Section VIII per Table 3.2-3.

The piping and valves connecting the No.7 feedwater heater to the feedwater system are part of the condensate and feedwater system. This piping is designed in accordance with ASME B31.1 Power Piping, also as indicated in Table 3.2-3 for Quality Group D pipes and valves. DCD, Rev. 4, Subsection 10.4.7.2.1 includes a discussion of the piping arrangement in the general description of the Condensate and Feedwater System.

The piping that supplies heating steam to the No.7 feedwater heater is part of the Main Steam System. This portion of piping up to the first isolation valve is designed in accordance with ASME Boiler and Pressure Vessel Code, Section III, Class 2 requirements. The remaining piping to the feedwater heater is designed in accordance with ASME B31.1 Power Piping. DCD Rev. 4 Figure 10.3-1 depicts the Main Steam System that includes the piping up to the No.7 feedwater heater.

Based on the above, the components which make up the hardware necessary to perform power maneuvering via feedwater temperature control and the applicable design codes are currently adequately described in DCD Revision 4 and no further clarification is needed in Revision 5.

DCD Impact

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