



GE Energy

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Subject: **Response to Portion of NRC Request for Additional Information
Letter No. 63 Related to ESBWR Design Certification Application –
Technical Specifications – RAI Numbers 16.2-24 and 16.2-42**

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

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

Sincerely,

James C. Kinsey
Project Manager, ESBWR Licensing

Reference:

1. MFN 06-375, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 63 Related to ESBWR Design Certification Application*, October 4, 2006

Enclosure:

1. MFN 07-210 – Response to Portion of NRC Request for Additional Information Letter No. 63 Related to ESBWR Design Certification Application – Technical Specifications – RAI Numbers 16.2-24 and 16.2-42

cc: AE Cubbage USNRC (with enclosures)
 DH Hinds GE (with enclosures)
 RE Brown GE (w/o enclosures)
 eDRFs 0000-0065-6832, 0000-0059-5595/2

Enclosure 1

MFN 07-210

**Response to Portion of NRC Request for
Additional Information Letter No. 63
Related to ESBWR Design Certification Application
- Technical Specifications -
RAI Numbers 16.2-24 and 16.2-42**

NRC RAI 16.2-24

Explain why NUREG-1434, Rev. 3.1, TS 3.2.1, "Average Planar Linear Heat Generation Rate (APLHGR)" and STS 3.2.4, "Average Power Range Monitor (APRM) Gain and Setpoints" are not included in the proposed ESBWR TS.

GE Response

As stated in Revision 2 of the Design Control Document (DCD) Tier 2, Sections 4.3.1.3 and 4.4.1, the ESBWR reactor core overpower and thermal and hydraulic design basis use only two limits for determining if the acceptable fuel design requirements are being met. These limits are minimum critical power ratio (MCPR) greater than the operating limit (OLMCPR) and linear heat generation rate (LHGR) below the maximum LHGR (MLHGR) limit(s). The steady-state OLMCPR and MLHGR limits are based on the most severe anticipated operational occurrences (AOOs) and include uncertainties that provide reasonable assurance that no fuel damage results during AOOs. These limits are required by the Technical Specification (TS) 3.2.1 for LHGR (equivalent to NUREG-1434 TS 3.2.3) and TS 3.2.2 for MCPR (equivalent to NUREG-1434 TS 3.2.2).

As described in the Bases for NUREG-1434 TS 3.2.3, "Average Planar Linear Heat Generation Rate (APLHGR)," APLHGR limits are established to ensure 10 CFR 50.46 limits for peak clad temperature and oxidation are met when using analysis assumptions consistent with the requirements of 10 CFR 50, Appendix K. Limits on APLHGR are not necessary for the ESBWR to meet 10 CFR 50.46 limits for peak clad temperature and oxidation during a design basis loss of coolant accident because, as stated in DCD Tier 2, Sections 6.3.3 and 15.4, water level never falls below the top of the core during any ESBWR design basis accident.

Justification for ESBWR TSs not including requirements equivalent to NUREG-1434, Revision 3.1, TS 3.2.4, Average Power Range Monitor (APRM) Gain and Setpoints (Optional), is being provided in the response to RAI 16.2-11.

DCD Impact

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

NRC RAI 16.2-42

10 CFR 50.36(c)(3) states that TS will include items surveillance requirements, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

Provide justification for not having Isolation Condenser System SR requiring verification every 60 months of the ICS capability to remove the design heat load.

GE Response

Revision 3 to Design Control Document (DCD) Tier 2, Chapter 16, LCO 3.5.4, "Isolation Condenser System (ICS) – Operating," added Surveillance Requirement (SR) 3.5.4.5, which requires verification of the heat removal capability of each IC train. The associated Bases specify that the purpose of this SR is to demonstrate that the heat removal capability of each IC train satisfies design requirements specified in DCD Tier 2, Chapter 5.

Revision 3 to LCO 3.5.4, SR 3.5.4.5, specifies the frequency for IC heat capacity testing as "24 months on a staggered test basis." This frequency will ensure timely identification of any degradation in ICS performance by testing one IC train every 24 months, such that each IC train is tested once every eight years. This frequency was enclosed in brackets pending changes to DCD Tier 2, Subsection 5.4.6.4, which are described in a pending supplemental response to RAI 5.4-52. Revision 4 to LCO 3.5.4, SR 3.5.4.5, will remove the brackets from the frequency for SR 3.5.4.5, coincident with the pending changes to DCD Tier 2, Subsection 5.4.6.4.

DCD Impact

DCD Tier 2, Chapter 16, LCO 3.5.4, "Isolation Condenser System (ICS) – Operating," Revision 4, will remove the brackets from the SR frequency for IC heat capacity testing. Related changes to DCD Tier 2, Subsection 5.4.6.4 are addressed in a pending supplemental response to RAI 5.4-52 and, therefore, are not addressed in this response.