



GE Energy

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MFN 06-431
Supplement 1

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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 Number 16.2-65 S01 – Supplement 1**

Enclosure 1 contains the subject supplemental RAI response resulting from an 11/28/06 e-mail from the NRC. GE's original response was provided in 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

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Reference:

1. MFN 06-431, Letter from David Hinds to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 63 Related to ESBWR Design Certification Application – Technical Specifications – RAI Numbers 16.0-2 through 16.0-7, 16.2-10, 16.2-12 through 16.2-22, 16.2-25, 16.2-31 through 16.2-40, 16.2-43, 16.2-44, 16.2-46 through 16.2-49, 16.2-51, 16.2-53, 16.2-55 through 16.2-72, and 16.2-78 through 16.2-80*, November 13, 2006

Enclosure:

1. MFN 06-431, Supplement 1 – Response to Portion of NRC Request for Additional Information Letter No. 63 Related to ESBWR Design Certification Application – Technical Specifications – RAI Number 16.2-65 S01

cc: AE Cabbage USNRC (with enclosures)
GB Stramback/GE/San Jose (with enclosures)
eDRF 0000-0059-5595/1

Enclosure 1

MFN 06-431, Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 63

Related to ESBWR Design Certification Application

- Technical Specifications -

RAI Number 16.2-65 S01

NRC RAI 16.2-65

TS 3.10.1, "Inservice Leak and Hydrostatic Testing Operations", entry into Condition A, could result in entering the applicable condition of the effected LCO immediately. If the effected LCO is 3.6.3.1, "Reactor Building" (RB), this would result in various completion times, up to 7 days, since according to the bases, minimal credit is taken for the existence of the RB surrounding the primary containment vessel in any radiological analyses. During this time TS 3.10.1 would still allow testing to occur. Standard Technical Specifications (STS) for secondary containment (NUREG-1434 TS 3.6.4.1) and secondary containment isolation valves (NUREG-1434 TS 3.6.4.2) recommend immediate suspension of testing, restore operability of secondary containment or secondary containment isolation valves within a matter of hours, and cooldown to below 200F within 36 hours if operability could not be restored. In consideration that TSTF-484 is under review and ESBWR seeks to use TS 3.10.1 for scram time testing activities, provide the technical justification for allowing testing to occur in Mode 5, with reactor coolant temperature greater than 200F, and with an inoperable Reactor Building for an extended period of time.

GE Response

DCD Tier 2, Rev.1 Chapter 16, LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation," allows reactor coolant temperatures greater than 93.3°C (200°F) when in Mode 5 to facilitate performance of inservice leak and hydrostatic testing if specified LCOs that are not normally required in Mode 5 are met. If one or more of the specified LCOs are not met, LCO 3.10.1, Required Action A.1, provides the option of immediately taking the Actions for the LCO not being met. Required Action A.1 is modified by a Note that clarifies that if the Actions for the LCO not being met include entry into Mode 5, then the allowance provided by LCO 3.10.1 to disregard Mode 5 temperature requirements is no longer applicable and reactor coolant temperature must be reduced to less than 93.3°C (200°F).

For the ESBWR Technical Specifications, the Note to LCO 3.10.1, Required Action A.1, may not always require that reactor coolant temperature be reduced to less than 93.3°C (200°F) because LCOs that are applicable in Modes 1, 2, 3 and 4 do not always require entry into Mode 5 when the LCO is not met. Therefore, GE will revise the Note to LCO 3.10.1, Required Action A.1, to state:

Required Actions to be in MODE 3 include reducing average reactor coolant temperature to $\leq 93.3^{\circ}\text{C}$ (200°F) within 36 hours.

This change will ensure that reactor coolant temperature will be reduced to less than 93.3°C (200°F) within 36 hours if LCO 3.10.1, Required Action A.1, is selected if any requirement of LCO 3.10.1 is not met.

DCD Impact

DCD Tier 2, Rev.1 Chapter 16, LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation," will be revised as described above in a future revision.

NRC RAI 16.2-65, Supplement 1

Issues Regarding RAI 16.2-65 GE Response

- *The GE response does not address the RAI regarding the fact that hydrostatic and scram time testing could continue for extended periods of time when required LCOs are not met.*

As an example, ESBWR TS 3.6.3.1, "Reactor Building", would allow testing to continue in Condition A for 7 days and would allow testing to continue in Condition B for 48 hours. Condition A is entered when one or more penetration flow paths have one Reactor Building boundary isolation damper inoperable, while Condition B is entered when one or more penetration flow paths have two Reactor Building boundary isolation dampers inoperable. For comparison purposes, BWR/6 STS 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs), lists an eight hour Completion Time for Condition A, and a four hour Completion Time for Condition B. Condition A is entered when one or more penetration flow paths have one SCIV inoperable, while Condition B is entered when one or more penetration flow paths have two SCIVs inoperable. Both LCOs are in place in order to satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

- *The GE response of providing a note in TS 3.10.1 Required Action A.1 that says "Required Actions to be in Mode 3 include reducing average reactor coolant temperature to less than or equal to 200F within 36 hours" does not reflect the desired stated end state of being in Mode 5 with average reactor coolant temperature less than or equal to 200F should the LCO not be met.*

For comparison purposes, BWR/6 STS 3.6.4.1, 3.6.4.2, and 3.6.4.3 have specific actions to be taken if operations with a potential for draining the reactor vessel (OPDRVs) are taking place. If Required Actions and Completion Times cannot be met during OPDRVs, the specific actions require suspension of testing, which should result in cold shutdown with average reactor coolant temperature being reduced to less than or equal to 200F. BWR/6 STS 3.3.6.2 refers to the above mentioned STS if Required Actions and associated Completion Times of STS 3.3.6.2 cannot be met.

In order to ensure that appropriate actions are taking place, recommend either modeling ESBWR TS after BWR STS regarding Applicability, Conditions, Required Actions and Completions Times during OPDRVs or eliminate ESBWR TS 3.10.1 Required Action A.1.

GE Response

GE will revise DCD Tier 2, Rev. 2, Chapter 16, LCO 3.10.1, Inservice Leak and Hydrostatic Testing Operation, to delete Required Action A.1 and the associated Note. This change will ensure immediate suspension of activities that could increase average reactor coolant temperature or pressure and reduction of average reactor coolant temperature to $\leq 93.3^{\circ}\text{C}$ (200°F) within 24 hours if the requirements of LCO 3.10.1 are not met. Elimination of Required Action A.1 from LCO 3.10.1, Revision 2, will establish Required Actions that are conservative compared to the Action required in the BWR/6 Standard Technical Specifications (STS), NUREG-1434, Revision 3.1, for the same condition.

DCD Impact

DCD Tier 2, Chapters 16 and 16B, will be revised as described above.