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MFN 06-431
Supplement 5

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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 16.0-3 S01**

Enclosure 1 contains the subject supplemental RAI response resulting from a March 27, 2007 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,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

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NRO

References:

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

Enclosures:

1. MFN 06-431, Supplement 5 – Response to Portion of NRC Request for Additional Information Letter No. 63 Related to ESBWR Design Certification Application – Technical Specifications – RAI Number 16.0-3 S01

cc:	AE Cubbage	USNRC (with enclosures)
	DH Hinds	GEH (with enclosures)
	RE Brown	GEH (w/o enclosures)
	eDRF	0069-3511

Enclosure 1

MFN 06-431, Supplement 5

Response to Portion of NRC Request for

Additional Information Letter No. 63

Related to ESBWR Design Certification Application

- Technical Specifications -

RAI Number 16.0-3 S01

NRC RAI 16.0-3

Provide a list of all the applicable TSTF travelers (including any currently under review), which have not been incorporated in the NUREG-1434, Rev. 3.1, Standard TS (STS), but are included in the ESBWR TS. Explain any ESBWR TS deviations from the TSTF travelers.

GE Response

ESBWR Technical Specifications (TS) have adopted the following Technical Specification Task Force (TSTF) travelers, which have not been incorporated into NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 3.1.

- TSTF-423-A, Revision 0, Technical Specification End States, NEDC-32988-A (The Consolidated Line Item Improvement Process (CLIIP) Notice of Availability for TSTF-423-A was published in the Federal Register (71 FR 14726) on March 23, 2006)
- TSTF-451-T, Revision 0, Correct the Battery Monitoring and Maintenance Program and the Bases for SR 3.8.4.2
- TSTF-458-T, Revision 0, Removing Restart of Shutdown Clock for Increasing Suppression Pool Temperature
- TSTF-484, Revision 0, Use of TS 3.10.1 for Scram Testing Activities

Deviations from the above listed TSTFs reflected in the ESBWR TS, Revision 1, are as follows.

TSTF-423-A revised TS end states for selected Required Actions. These Required Actions were revised to allow the plant to stay in Mode 3. During adoption into the ESBWR TS, TSTF-423-A was modified to reflect the ESBWR design. More detailed discussions of the applicability of TSTF-423-A to the ESBWR design and the deviations from the traveler will be addressed in the response to NRC RAI 16.0-7.

TSTF-451-T includes two changes. The first change is a revision to the NUREG-1434, TS 5.5.14, Battery Monitoring and Maintenance Program (ESBWR TS 5.5.10). This first change revises this program description to require actions to equalize and test battery cells with electrolyte level below the top of the plates, not below the minimum established design limit.

ESBWR TS 5.5.10 is consistent with this first change from TSTF-451-T. The second change revises the Bases for NUREG-1434 SR 3.8.4.2 (ESBWR SR 3.8.1.2 and SR 3.8.2.2) to be consistent with the associated TS Surveillance. The ESBWR Bases for SR 3.8.1.2 and SR 3.8.2.2 will be revised to adopt this second change from TSTF-451-T.

TSTF-458-T modifies Actions D and E of NUREG-1434 TS 3.6.2.1, "Suppression Pool Average Temperature" (ESBWR TS 3.6.2.1, "Suppression Pool Average Temperature"). TSTF-458-T revises the entry condition for NUREG-1434 TS 3.6.2.1 Action D to "Suppression pool average temperature > [110]°F" by eliminating the upper temperature limit of the condition (i.e., but < [120]°F) and removes the "Be in MODE 4" Required Action from NUREG-1434 TS 3.6.2.1 Action E. ESBWR TS 3.6.2.1 Action D reflects the adoption of the revised entry condition of TSTF-458-T, as modified by the ESBWR specific suppression pool temperature for this condition (i.e., 120°F). However, the change to NUREG-1434 TS 3.6.2.1 Action E reflected in TSTF-458-T has not been adopted in Revision 1 of ESBWR TS 3.6.2.1 Action E. ESBWR TS

3.6.2.1 will be revised to adopt this change by eliminating the "Be in MODE 5" Required Action MFN 06-431.

Enclosure 1 Page 4 of 67 from Action E. (It should be noted that ESBWR TS Mode 5 is equivalent to NUREG-1434 TS Mode 4.)

TSTF-484 revised NUREG-1434 TS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation" (ESBWR TS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation") to extend this special operation for inservice leak and hydrostatic testing to apply to include operations where reactor coolant temperature exceeds 200°F as a consequence of maintaining reactor pressure for inservice leak and hydrostatic test or as a consequence of maintaining reactor pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test. ESBWR TS 3.10.1 and the associated Bases reflect the adoption of TSTF-484, except for minor editorial changes. ESBWR TS 3.10.1 and associated Bases will be revised to eliminate these minor editorial differences from TSTF-484.

In addition, several NRC RAIs request GE incorporate other TSTFs that are not currently included in NUREG-1434, or address TSTFs (i.e., TSTF-360) that were previously approved and incorporated in NUREG-1434 and are currently being revised by the industry and the NRC. A brief summary of these is as follows.

- TSTF-493, Clarify Application of Setpoint Methodology for LSSS Functions, will be addressed in response to NRC RAI 16.2-25.
- TSTF-448, Control Room Habitability, will be addressed in response to NRC RAI 16.2- 54.
- TSTF-360, DC Electrical Rewrite, will be addressed in NRC RAIs 16.2-55, 16.2-56, 16.2-57, and 16.2-60.
- TSTF-497, Limit Inservice Testing Program SR 3.0.2 Application to Frequencies of 2 Years or Less, will be addressed in NRC RAI 16.2-69.

DCD Impact

DCD Tier 2, Chapters 16 and 16B, will be revised in a subsequent revision to the DCD as noted in the above discussion.

NRC RAI 16.0-3, Supplement 1

The ESBWR TS 3.6.2.1, "Suppression Pool Average Temperature," differs significantly from TSTF-458-T:

- *Required Action D.2 still requires verifying instead of determining temperature;*
- *STS Required Action D.3, to be in Cold Shutdown in 36 hours of entering Condition D, is deleted;*
- *Required Action E.2, to be in Cold Shutdown in 36 hours of entering Condition E, is not deleted; and*
- *Condition D applies when suppression pool average temperature exceeds 120 degrees F, instead of the STS value of 110 degrees F, and*

- *Condition E applies when suppression pool average temperature exceeds 130 degrees F, instead of the STS value of 120 degrees F.*

Please justify these differences, including the higher temperatures associated with Conditions D and E.

GEH Response

GEH will revise Design Control Document (DCD), Tier 2, Revision 3, Chapters 16 and 16B, LCO 3.6.2.1, "Suppression Pool Average Temperature," to incorporate Technical Specification Task Force (TSTF) Traveler 458-T, "Removing Restart of Shutdown Clock for Increasing Suppression Pool Temperature." LCO 3.6.2.1, Conditions D and E, will continue to use the ESBWR specific temperature limits, which are consistent with DCD, Tier 2, Revision 3, Chapters 6 and 15, in place of the bracketed values provided in BWR/6 Standard Technical Specifications (STS), NUREG-1434, Revision 3.1.

DCD Impact

DCD Tier 2, Chapters 16 and 16B, Revision 4, will include the following changes:

Chapter 16, Specification 3.6.2.1 Changes:

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Suppression pool average temperature > 48.9°C (120°F).	D.1	Place the reactor mode switch in the shutdown position.	Immediately
	AND		
	D.2	~~Verify~~ Determine suppression pool average temperature ~~is ≤ 54.4°C (130°F)~~.	Once per 30 minutes
	AND		
	D.3	Be in MODE 5.	36 hours
E. Suppression pool average temperature > 54.4°C (130°F).	E.1	Depressurize the reactor vessel to {< 1.38 MPaG (200 psig)}.	12 hours
	~~AND~~		
	~~E.2~~	~~Be in MODE 5.~~	~~36 hours~~

Chapter 16B, Bases 3.6.2.1 Changes:

D.1, D.2 and D.3~~2~~

If suppression pool average temperature is ≥ 48.9°C (120°F), an automatic reactor shutdown is initiated because suppression pool temperature exceeds safety analyses assumptions. Therefore, Required Action D.1 specifies placing the reactor mode switch in the shutdown position as a manual backup to the automatic function.

If the reactor is shutdown and suppression pool average temperature ≥ 48.9°C (120°F), the requirements of LCO 3.6.2.1.c are still not met. Therefore, Required Action D.2 requires ~~verification~~ monitoring suppression pool average temperature every 30 minutes ~~that suppression pool average temperature has not exceeded 54.4°C (130°F) because this temperature would require immediate entry into Condition E.~~

~~The Completion Time of once per 30 minutes for verification that the limits for entry into Condition E have not been exceeded is required~~ because of the degraded capacity of the suppression pool. This completion time is acceptable because other indications in the control room will alert the operator to ~~an~~ abnormal suppression pool temperature trends and alarms will alert operators if~~s~~ specified limits are exceeded. Additionally, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 5 within 36 hours.

E.1 ~~and E.2~~

If suppression pool average temperature is > 54.4°C (130°F), the capacity of the suppression pool is significantly degraded. Therefore, the plant must be placed in a condition in which overall plant risk is reduced. This is accomplished by reducing reactor pressure to {< 1.38 MPaG (200 psig)} within 12 hours. ~~Additionally, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 5 within 36 hours.~~ The allowed Completion Time~~s~~ ~~are~~ is reasonable, based on operating experience, to reach the required plant conditions from the reactor shutdown condition in an orderly manner and without challenging plant systems.