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MFN 06-431 Supplement 10

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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 107 Related to ESBWR Design Certification Application - Technical Specifications - RAI Number 16.0-7 S01**

Enclosure 1 contains the subject supplemental RAI response resulting from NRC RAI Letter No. 107. The GE Hitachi Nuclear Energy (GEH) response to the original RAI 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

James C. Kinsey
Vice President, ESBWR Licensing

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NRO

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 10 – Response to Portion of NRC Request for Additional Information Letter No. 107 Related to ESBWR Design Certification Application – Technical Specifications – RAI Number 16.0-7 S01

cc:

AE Cubbage	USNRC (with enclosure)
DH Hinds	GEH (with enclosure)
RE Brown	GEH (with enclosure)
eDRFs	81-4757

Enclosure 1

MFN 06-431, Supplement 10

Response to Portion of NRC Request for

Additional Information Letter No. 107

Related to ESBWR Design Certification Application

- Technical Specifications -

RAI Number 16.0-7 S01

NRC RAI 16.0-7

The Abstract to NEDC-32988-A (ML030170060) states, "the analyses conclude that plant safety and operational improvements can be achieved by remaining in hot shutdown for several inoperable conditions while equipment is being restored. The proposed end state improvements provide more systems and operational flexibility while avoiding risk sensitive cold shutdown required actions and alignments. The conclusions are applicable for all BWR products (BWR-2 through 6)." Justify applying the topical report to the ESBWR design.

The NRC's letter regarding this topical report states, "licensees requesting a license amendment to revise their end states must include in their amendment requests plant-specific information addressing the stipulations identified in Section 7.0 of the SE." Address these stipulations.

Identify LCOs where TSTF-423 is applied to the ESBWR. For each LCO where TSTF-423 end states are requested, provide justification. Follow the example provided as item 17 on page 46 of NEDC-32988-A.

GE Response

The basis for TSTF-423-A, Revision 0, "Technical Specifications End States, NEDC-32988-A," is considered to be applicable to the ESBWR. As such, the concepts reflected in TSTF-423-A, Revision 0, have been adopted in the ESBWR Technical Specifications (TS). A revision to topical report, NEDO-33201, "ESBWR Design Certification Probabilistic Risk Assessment," or a separate topical report concerning ESBWR TS end states will be provided that will include risk-based support for the application of each of the end state relaxations in the ESBWR TS. The topical report will also provide justifications, equivalent in scope to those provided in NEDC-32988-A, for the application of each of the end state relaxations in the ESBWR TS. It is anticipated that the justifications provided in the topical report will support the current qualitative assessments justifying the application of the proposed end state relaxations in the ESBWR TS discussed below. It is expected that the topical report revision, or separate topical report, will be submitted to the NRC for review and approval by September 2007.

The stipulations identified in Section 7.0 of the NRC Safety Evaluation for NEDC-32988 and addressed in TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A" will be referenced and committed to in a subsequent revision to each of the associated ESBWR Bases for the TS for which the end state allowances are adopted.

The ESBWR TS identified below are presented in Revision 1 of DCD Chapters 16 and 16B with an end state of Mode 3, which is consistent with corresponding requirements presented in TSTF-423-A for the comparable ESBWR system.

TS 3.6.1.1	Containment
TS 3.6.3.1	Reactor Building
TS 3.7.1	Emergency Breathing Air System (EBAS)

The ESBWR TS identified below will be revised in a subsequent revision to the DCD to align with allowances justified in TSTF-423-A for the comparable ESBWR system.

TS 3.4.1 Safety Relief Valves (SRVs)
(In a subsequent revision to the DCD, a Mode 3 end state relaxation will be applied and the requirement to proceed to Mode 5 will be applied when 16 or more SRVs are inoperable.)

TS 3.5.1 Automatic Depressurization System (ADS) – Operating
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5 when [three] or more ADS SRVs are inoperable or when [three] or more Depressurization Valves are inoperable.)

TS 3.5.2 Gravity-Driven Cooling System (GDCS) – Operating
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5 when [three] or more branch lines of the injection subsystem are inoperable or when [three] or more equalizing trains are inoperable.)

TS 3.6.1.6 Wetwell-to-Drywell Vacuum Breakers
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5 when two or more vacuum breakers are inoperable.)

The ESBWR TS identified below will be reformatted, in a subsequent revision to the DCD, to more closely align with the TSTF-423-A format (for the comparable ESBWR system) for splitting Actions applicable to remain in Mode 3 versus Actions requiring shutdown to Mode 5. No new technical change will be introduced with the revision to these Specifications.

TS 3.8.1 24-hour DC Sources – Operating

TS 3.8.5 Inverters – Operating

TS 3.8.7 Distribution Systems – Operating

The ESBWR TS identified below are Specifications for systems that support the primary containment function assumed in design basis events. While these support systems were not addressed in TSTF-423-A or the associated NEDC-32988, the justification for the end state relaxation for primary containment inoperability also applies to these primary containment support systems. As such, the Mode 3 end state relaxation has been applied to these Specifications.

TS 3.6.1.2 Containment Air Lock

TS 3.6.1.3 Containment Isolation Valves (CIVs)
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5 when two CIVs are inoperable in a two-valve penetration and not isolated within the specified Completion Time.)

TS 3.6.1.4 Drywell Pressure

TS 3.6.1.5 Drywell Air Temperature

The ESBWR TS identified below, and reflected in Revision 1 of DCD Chapters 16 and 16B, presents an end state relaxation (i.e., to Mode 3) that was not addressed in TSTF-423-A. Given

that Reactor Coolant System (RCS) leakage continues to be monitored to be within limits in accordance with LCO 3.4.2, RCS Operational LEAKAGE, the risk of operation in Mode 3 versus Mode 4 with inoperable RCS leakage detection system(s) is bounded by evaluations made with other more risk significant systems inoperable.

TS 3.3.4.1 Reactor Coolant System (RCS) Leakage Detection Instrumentation

The ESBWR TS identified below had proposed end state relaxations that will be eliminated in a subsequent revision to the DCD such that the end state relaxations of TSTF-423-A will not apply:

TS 3.3.6.1 Main Steam Isolation Valve (MSIV) Instrumentation
(In a subsequent revision to the DCD, the end states will be revised to reflect declaring the associated MSIV(s) inoperable.)

TS 3.3.6.2 Main Steam Isolation Valve (MSIV) Actuation
(In a subsequent revision to the DCD, the end states will be revised to reflect declaring the associated MSIV(s) inoperable.)

TS 3.3.6.3 Isolation Instrumentation
(In a subsequent revision to the DCD, the end states will be revised to reflect declaring the associated CIV(s) inoperable.)

TS 3.3.6.4 Isolation Actuation
(In a subsequent revision to the DCD, the end states will be revised to reflect declaring the associated CIV(s) inoperable.)

TS 3.4.2 RCS Operational LEAKAGE
(In a subsequent revision to the DCD, the end states will be revised by removing the brackets from the requirement to proceed to Mode 5.)

TS 3.4.4 RCS Pressure and Temperature (P/T) Limits
(In a subsequent revision to the DCD, the end states will be revised by removing the brackets from the requirement to proceed to Mode 5.)

TS 3.6.1.7 Passive Containment Cooling System (PCCS)
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5.)

TS 3.6.2.2 Suppression Pool Water Level
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5.)

TS 3.7.5 Isolation Condenser (IC)/Passive Containment Cooling (PCC) Pools
(In a subsequent revision to the DCD, the end states will be revised to add a requirement to proceed to Mode 5.)

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 16.0-7, Supplement 1

Identify where modified end states are applied to the ESBWR generic TS Actions. For each Action where a Mode 3 end state is proposed, provide justification, regardless of whether the modified end state was included in TSTF-423-A. See attached table.

Revise Bases for TS 3.7.3 (Main Condenser Offgas) Action B to explain that entry into Mode 3 is acceptable from a risk perspective as stated in TSTF-423-A.

GEH Response

DCD Revision 5 will remove previously included 'modified end state' Actions and corresponding Bases, including those applicable to TS 3.7.3. The Actions and associated Bases will be returned to appropriately match those in the BWR6 Standard Technical Specifications, NUREG-1434, Revision 3.1, without inclusion of TSTF-423-A end state changes.

DCD Impact

DCD Tier 2, Chapter 16 and Chapter 16B will be revised as discussed above in DCD Revision 5.