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MFN 07-172 Supplement 1

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U.S. Nuclear Regulatory Commission
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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 16.2-89 S01**

Enclosures 1 and 2 contain 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,

Kathy Sedney for

James C. Kinsey
Vice President, ESBWR Licensing

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NRO

Reference:

1. MFN 07-172, Letter from James C. Kinsey to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 69 Related to ESBWR Design Certification Application – Technical Specifications – RAI Numbers 16.2-86, 16.2-87, and **16.2-89***, March 27, 2007

Enclosures:

1. MFN 07-172, Supplement 1 – Response to Portion of NRC Request for Additional Information Letter No. 107 Related to ESBWR Design Certification Application – Technical Specifications – RAI Number 16.2-89 S01
2. MFN 07-172, Supplement 1 – DCD Tier 2, Chapter 16, Specification 5.5.10 Draft Revisions for RAI Number 16.2-89 S01

cc:

AE Cubbage	USNRC (with enclosures)
DH Hinds	GEH (with enclosures)
RE Brown	GEH (with enclosures)
eDRFs	77-7461

Enclosure 1

MFN 07-172, Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 107

Related to ESBWR Design Certification Application

- Technical Specifications -

RAI Number 16.2-89 S01

NRC RAI 16.2-89

TS Section 5.5.10 contains a reference to the Institute of Electrical and Electronics Engineers (IEEE) Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications." The most recent version of IEEE Standard 450 that has been endorsed by the NRC through Regulatory Guides (RGs) is IEEE Standard 450-1975. The RGs of mention are: RG 1.128, "Installation, Design, and Installation of Large Lead Storage Batteries for Nuclear Power Plants," and RG 1.129, "Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Nuclear Power Plants."

a. Provide the justification for referencing the IEEE Standard 450-1995.

b. Provide assurance that all essential maintenance parameters have been included in battery monitoring and maintenance program identified in proposed TS 5.5.10.

GE Response

RAI 16.2-89 addresses requirements in DCD, Chapter 16, Revision 1, associated with Vented Lead-Acid batteries. DCD, Chapter 16, Revision 3 proposed changes to Technical Specification Section 5.5.10 based on the ESBWR change incorporating the use of Valve Regulated Lead Acid (VRLA) batteries. Therefore, GE recommends closure of this request for additional information regarding the DCD Revision 1 presentation of vented lead-acid batteries.

DCD Impact

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

NRC RAI 16.2-89, S01

Provide justification for referencing IEEE 450-1995, and considering the battery maintenance program in proposed TS 5.5.10 to be comprehensive. In a followup question, the staff stated that it had not yet endorsed IEEE Standard 1188-2005, and requested the applicant to revise the program to state the following:

"This Program provides for battery restoration and maintenance which includes the following:

a. Actions to restore battery cells with float voltage < 2.18 VDC,

b. Actions to determine the cause and correct when cell temperatures deviate more than 3°C (5°F) from each other.

c. Actions to verify that remaining cells are ≥ 2.14 VDC when a cell or cells have been found to be < 2.18 VDC."

GEH Response

The ESBWR Chapter 16 Specification 5.5.10, "Battery Monitoring and Maintenance Program," is being revised to eliminate reference to IEEE Standard 1188 as recommended by the Staff in the RAI (note previous reference to IEEE Standard 450 was changed to IEEE Standard 1188 in DCD Revision 3). Additionally, the Bases for Specification 3.8.3 reference the Battery Monitoring and Maintenance Program in the Background section, and also describe its basis as IEEE Standard 1188. This Bases reference to the IEEE basis is also being deleted consistent with the intent of this requested change.

The Items "a" and "b" shown in the supplemental request (above) are currently implemented in DCD Revision 4 Specification 5.5.10. The supplemental request adds item "c" as a recommended additional requirement. GEH will revise Specification 5.5.10, Item "a" to include this additional requirement. This is being formatted within Item "a" since it is related to the same condition of discovering one or more battery cells < 2.18 V. The reformatted Item "a" will state: "With battery cell float voltage < 2.18 V, actions to restore cell(s) to > 2.18 V and perform SR 3.8.3.5." Surveillance Requirement (SR) 3.8.3.5 requires verifying that each required battery connected cell float voltage is > 2.14 V. Presenting the requirement to "verify remaining cells are > 2.14 V" by reference to SR 3.8.3.5 (which requires this verification) will provide more direct connection to the appropriate actions if a cell is discovered < 2.14 V, i.e., Action A of Specification 3.8.3.

DCD Impact

See the DCD Tier 2 proposed changes in Enclosure 2.

Enclosure 2

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DCD Tier 2, Chapter 16, Specification 5.5.10 Draft Revisions for RAI 16.2-89 S01

5.5 Programs and Manuals

5.5.10 Battery Monitoring and Maintenance Program

This Program provides for battery restoration and maintenance, ~~based on the recommendations of IEEE Standard 1188-2005, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications," of~~ which includes the following:

a. ~~Actions to restore~~ With battery cells ~~with~~ float voltage < 2.18 V, actions to restore cell(s) to ≥ 2.18 V and perform SR 3.8.3.5, and

b. Actions to determine the cause and correct when cell temperatures deviate more than 3°C (5°F) from each other.

5.5.11 Setpoint Control Program (SCP)

a. The Nominal Trip Setpoints (NTSPs), Allowable Values (AVs), and As-Found and Leave Alone Tolerance Bands, and the methodologies used to determine these values shall be established and shall be documented in the SCP for each of the required Technical Specification Instrumentation Functions in the following:

1. Specification 3.3.1.1, "Reactor Protection System (RPS) Instrumentation,"
2. Specification 3.3.1.4, "Neutron Monitoring System (NMS) Instrumentation,"
3. Specification 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation,"
4. Specification 3.3.5.3, "Isolation Condenser System (ICS) Instrumentation,"
5. Specification 3.3.6.1, "Main Steam Isolation Valve (MSIV) Instrumentation,"
6. Specification 3.3.6.3, "Isolation Instrumentation," and
7. Specification 3.3.7.1, "Control Room Habitability Area (CRHA) Heating, Ventilation, and Air Conditioning (HVAC) Subsystem (CRHAVS) Instrumentation."

b. The analytical methods used to determine the NTSPs, and AVs, and As-Found and Leave Alone Tolerance Bands shall be those previously reviewed and approved by the NRC, specifically those described in the following document[s]: