October 31, 2008

Mr. Robert E. Brown
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy Americas, LLC
3901 Castle Hayne Road MC A-50
Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 269 RELATED TO ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

By letter dated August 24, 2005, GE-Hitachi Nuclear Energy Americas, LLC (GEH) submitted an application for final design approval and standard design certification of the economic simplified boiling water reactor (ESBWR) standard plant design pursuant to 10 CFR Part 52. The Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed design.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3104 or mae1@nrc.gov or you may contact Eric Oesterle at (301) 415-1365 or eric.oesterle@nrc.gov.

Sincerely,

/RA/

Michael A. Eudy, Project Manager
ESBWR/ABWR Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-010

Enclosure:
Request for Additional Information

cc: See next page

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Dear Mr. Brown:

By letter dated August 24, 2005, GE-Hitachi Nuclear Energy Americas, LLC (GEH) submitted an application for final design approval and standard design certification of the economic simplified boiling water reactor (ESBWR) standard plant design pursuant to 10 CFR Part 52. The Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed design.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3104 or mae1@nrc.gov or you may contact Eric Oesterle at (301) 415-1365 or eric.oesterle@nrc.gov.

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Michael A. Eudy, Project Manager
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Docket No. 52-010

Enclosure:
Request for Additional Information

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Distribution: See next page

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 269
RELATED TO ESBWR DESIGN CERTIFICATION APPLICATION
DATED OCTOBER 31, 2008

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Requests for Additional Information (RAIs)
ESBWR Design Control Document (DCD), Revision 5

RAI No.	Reviewer	Summary	Comment
16.2-169	Harbuck C	Revise TS 3.1.7 SLC System Actions to require unit shutdown for a loss of ECCS function condition.	The staff requests that the applicant revise Action D of GTS 3.1.7 to require a unit shutdown. Actions Condition [D] could mean that at least one accumulator is unavailable for ECCS injection. Since both accumulator volumes are necessary for LOCA success, this condition represents a loss of ECCS function; therefore, shutdown actions should be specified, rather than an 8-hour completion time for restoring SLC system operability
16.2-170	Harbuck C	TS 3.1.7 SLC accumulator low level isolation instrumentation setting.	The staff requests that the applicant explain how the level trip setting is determined to ensure that isolation occurs before the SLC accumulator is drained. Change number 28 in the Table "Chapter 16 Changes From Revision 4 to Revision 5" states: "Added SR 3.1.7.8 to require calibration of SLC accumulator level instrument channels. This change supports new requirements for SLC accumulator isolation valves."
16.2-145S01	Harbuck C Li H	Revise surveillance frequencies for instrumentation channel checks and channel functional tests to be consistent with the STS.	RAI 16.2-145 Supplemental 1 The staff requests that the applicant revise frequencies for instrumentation channel checks and channel functional tests to be consistent with the STS. In its supplemental response to RAI 16.2-154 (MFN 08-372, dated April 21, 2008), and as indicated in Table entitled “Chapter 16 Changes From Revision 4 to Revision 5” change numbers 38, 53, 54, 59, 72, 76, 77, 81, 83, 86, 98, 99, 100, 103, 105, 112, 113, 117, 125, 135, 141, 147, 157, 164, 181, 184, 198, 199, 201, and 206, instrumentation channel checks have been revised with a 24-hour frequency, and channel functional tests (CFTs) have been revised with a 24-month frequency; both sets of relaxations are justified by capabilities of the online self diagnostic feature of the Q-DCIS. In response to RAI 16.2-145, in DCD Revision 5, the applicant revised DCD Section 7.1.3.4 with additional

RAI No.	Reviewer	Summary	Comment
			details of his feature and how it supports channel checks and CFTs. However, this DCD discussion does not address the justification for the surveillance frequency relaxations; this is only addressed in the proposed Bases for these surveillances in GTS Section 3.3. Pending NRO technical staff acceptance of this feature as a sufficient basis for these frequencies, the GTS should denote these frequencies with brackets containing frequency values consistent with those provided in NUREG-1434, Revision 3.1, along with a suitable reviewer's note for the combined license applicant's use. (Note that RAIs 16.2-152, 153, and 154 are considered resolved based on the revised Q-DCIS discussion in DCD 7.1.3.4; the issue of the frequency relaxations will be addressed under this supplement to RAI 16.2-145.)
16.2-171	Harbuck C	List in Table 3.3.1.4-1 the name of the document containing the OPRM instrumentation function settings.	The staff requests that the applicant replace the "N/A" in the Allowable Value column for Function 3, Oscillation Power Range Monitor (OPRM) - Upscale, in Table 3.3.1.4-1, with "As specified in the [name of the licensee-controlled document]," where the adjusted post-testing values should be specified. Rev 5 of DCD Tier 2 Table 4D-5 provides the OPRM defense-in-depth algorithm setpoints. The Note to this table states: "The set points in this table are initial settings, values may be adjusted based on startup testing results." (This was change number 65 in the table in DCD Rev 5, entitled "Chapter 16 Changes From Revision 4 to Revision 5.")
16.2-172	Ashkeboussi N	Justify frequency for generic TS SR 3.4.2.1 compared to STS SR 3.4.5.1.	The staff requests that the applicant justify the less restrictive 12-hour surveillance frequency of GTS SR 3.4.2.1. Equivalent STS SR 3.4.5.1 has a surveillance frequency of 8 hours. The bases references GL 88-01, Supplement 1 in both the STS and the GTS.
16.2-40S02	Ashkeboussi N Harbuck C	Provide a surveillance requirement for GDCS pool temperature in generic TS 3.5.2.	The staff requests that the applicant provide a surveillance requirement for GDCS pool temperature in generic TS 3.5.2 that is consistent with the highest and lowest initial temperatures and pressures in the drywell and temperatures in the GDCS pools assumed in the analyses of design basis events. This will likely require adding temperature monitoring instrumentation for the GDCS pools. This request is related to item 255 in the DCD Rev 5 table entitled "Chapter 16 Changes From Revision 4 to Revision 5," and GTS 3.5.2 and 3.6.1.4, and 3.6.1.5. Although a

RAI No.	Reviewer	Summary	Comment
			150 deg F initial drywell temperature is consistent with analysis assumptions, specifying a 150 deg F temperature limit in GTS LCO 3.6.1.5 implies that this is an acceptable temperature for normal operation. Please explain why TS should not require taking action to deal with degraded drywell cooling at temperatures much lower that this.
16.2-173	Harbuck C	Clarify generic TS SR 3.5.3.1 regarding whether the DPS actuator is required for ADS valve operability in Mode 5 and in Mode 6 with the RPV head in place.	The staff requests that the applicant clarify SR 3.5.3.1, "Perform applicable LCO 3.5.1, 'Automatic Depressurization System (ADS) - Operating,' SRs for ADS valves required for relief capacity equivalent to 6 depressurization valves (DPVs)." In GTS 3.5.1, an operable diverse protection system (DPS) valve requires an operable DPS actuator and two operable actuators associated with DC and Uninterruptable AC Electrical Power Distribution Divisions required by LCO 3.8.6, "Distribution Systems - Operating." Explain what is meant by "applicable SRs." For example, please specify if the phrase "applicable SR" means that LCO 3.8.6 must be met and that the DPS actuator for each required ADS valve must be operable, even though LCO 3.5.3 does not require DPS actuators for the GDCS injection and equalizing valves. The needed clarification should be provided in the SR statement and the Frequency statement and not only in the Bases for SR 3.5.3 1, to avoid confusion in meeting this SR.
16.2-174	Ashkeboussi N	Justify operability and action requirements for DPS actuators in ECCS and containment system generic TS.	In ECCS and containment system generic TS, the Actions provide a condition for “one or more ADS valves with DPS actuator inoperable.” The completion time for restoring DPS actuator(s) to operable status is “prior to entering Mode 2 or 4 from Mode 5.” This completion time could potentially allow a plant to operate 24 months (an entire cycle) with all DPS actuators inoperable for ECCS and containment system valves with DPS actuators. Generic TS 3.3.8.1 specifies a 30-day completion time to restore a DPS Function to operable status. An inoperable DPS Function would affect all ECCS and containment valves with DPS actuators. The staff requests that the applicant explain why there should not be any decrease in the completion time to restore all DPS actuators to operable status as the number of DPS actuators that are inoperable increases. In the Table entitled, "Chapter 16 Changes From Revision 4 to Revision 5," item 233 states "Evaluation completed subsequent to submission of RAI 16.2-32, Supplemental Response, determined that

RAI No.	Reviewer	Summary	Comment
			Diverse Protection System actuators for ICS did not meet criteria for high regulatory oversight and DPS actuators are not included in LCO 3.5.4." The staff requests that the applicant specify where this evaluation is documented. In addition, please clarify if the Availability Controls specify the DPS actuators for ICS automatic valves.
16.2-175	Ashkeboussi N	Revise SR 3.6.1.1.2 with correct in-leakage limit.	The staff requests that the applicant revise SR 3.6.1.1.2 to verify that the combined feedwater flow isolation valve pathway in-leakage is less than 900 cc per min, as stated in the DCD. Currently SR 3.6.1.1.2 lists 0.900 cc per min. Please revise SR 3.6.1.1.2 to correct this error.
16.2-176	Harbuck C	Justify the proposed 8-hour completion time for isolating the affected penetration flow path for the condition of one inoperable feedwater containment isolation valve as specified in Action B of generic TS 3.6.1.3.	The staff requests that the applicant justify the proposed 8-hour completion time for isolating the affected penetration flow path for the condition of one inoperable feedwater containment isolation valve as specified in Action B of generic TS 3.6.1.3. The reason given in item 248 of the table entitled "Chapter 16 Changes From Revision 4 to Revision 5" - the potential impact on plant operation when entering actions that may require isolation of the penetration - matches the reason for the 8-hour completion time for the isolating a main steam line with one inoperable MSIV. The bases for Required Action B.1 states the 8-hour completion time "provides additional time to attempt restoration before initiating the transient associated with the main steam line or main feedwater line isolation." Please clarify why operating reactor TS and the STS only allow 4 hours. In addition, please specify what is different about the ESBWR feed water system to justify this relaxation.
16.2-177	Harbuck C	Revise SR 3.6.1.3.10 to be consistent with phrasing of SR 3.6.1.3.9.	The staff requests that the applicant revise SR 3.6.1.3.10 to be consistent with phrasing of SR 3.6.1.3.9, as follows:

RAI No.	Reviewer	Summary	Comment
			Replace Verify the combined leakage rate for both feedwater lines is ≤ 7.00E-04 standard m^3/ min (2.47E-02 scfm) when tested at P_a.with Verify combined feedwater line CIV leakage rate through both feedwater lines is ≤ 7.00E-04 standard m^3/min (2.47E-02 scfm) when tested at P_a. The purpose of this editorial comment is to achieve consistency in the phrasing of similar requirements to promote clarity and standardization.
16.2-178	Harbuck C	Clarify the Background discussion in the Bases for generic TS 3.3.6.1, generic TS 3.3.6.2, and generic TS 3.6.1.3.	The staff requests that the applicant clarify the Background discussion in the Bases for generic TS 3.3.6.1, 3.3.6.2, and 3.6.1.3. In the table entitled "Chapter 16 Changes From Revision 4 to Revision 5," change number 154 states that main steamline (MSL) drain isolation valves have been added to the Background discussion in the Bases for generic TS 3.3.6.1 and 3.3.6.2. For example, the Background discussion in the Bases for generic TS 3.3.6.1 states; "The isolation instrumentation contained in this specification [main steam isolation valve (MSIV) Instrumentation] provides the capability to generate isolation signals to isolate the MSIVs and MSL drain isolation valves." The MSL drain isolation valves should also be added to the 4th paragraph of the Background discussion in the Bases for generic TS 3.6.1.3. Also, as an editorial clarification, the sentence quoted above, should be revised as follows: "The isolation instrumentation contained in this specification provides the capability to generate isolation signals to isolate the main steam lines and main steam drain lines by closing the MSIVs and MSL drain isolation valves." Similar changes should be made to the first sentence and last sentence of the first paragraph of the Background discussion in the Bases for generic TS 3.3.6.2.

16.2-179	Ashkeboussi N	Revise LCO 3.6.1.4 to use kpa and psia pressure units to match units in DCD Table 6.2-2.	The staff requests that the applicant revise LCO 3.6.1.4 units to match the pressure units used in Chapter 6 of the Design Control Document (DCD). in the LCO, the units used are KPAG AND PSIG. Table 6.2-2 of the DCD uses KPA AND PSIA. Revise the LCO to match the units of the DCD for consistency in units of measurement between the two documents.
16.2-180	Harbuck C	Revise generic TS 3.6.1.6 and Bases to clarify that an operable wetwell-to-drywell vacuum breaker flow path requires the associated isolation valve to be open and capable of automatically closing.	The staff requests that the applicant revise LCO 3.6.1.6 and the bases for LCO 3.6.1.6 to clearly state that an operable wetwell-to-drywell vacuum breaker flow path requires the associated isolation valve to be open and capable of automatically closing to ensure there is no ambiguity about not meeting LCO 3.6.1.6 if SR 3.6.1.2 is not met. The purpose of this request is to achieve unambiguous phrasing of generic TS requirements.
16.2-181	Harbuck C	Clarify the Actions Note of generic TS 3.6.3.1.	In the Actions Note of TS 3.6.3.1, the phrase "penetration flow paths" was not revised as described in item 265 of the table entitled "Chapter 16 Changes From Revision 4 to Revision 5," to clarify that the note only applies to penetration flow paths to the reactor building (CONAVS area). The item says, Revised "penetration flow paths" to "Reactor Building (CONAVS area) boundary" to more correctly reflect the scope of the Specification. This is consistent with phrasing in Specification 3.7.2. The staff requests that the applicant address this discrepancy and also clarify what is meant by the phrase, "This is consistent with phrasing in Specification 3.7.2."
16.2-182	Harbuck C	Revise action and surveillance requirements of generic TS 3.7.1.	The staff requests that the applicant revise the actions and surveillances of generic TS 3.7.1 to address the following comments: SR 3.7.1.3 requires verifying bulk average water temperature in IC/PCC pools is less than or equal to 110 deg F. Please clarify if this surveillance be met in the event the drywell temperature reaches and remains at the LCO 3.6.1.5 temperature limit of 150 deg F.

			Please clarify in the TS 3.7.1 Bases whether all IC/PCC subcompartment pools are connected by locked open manual valves, or whether they are divided into two groups with a closed manual valve. The staff requests that the applicant specify if in Condition B, C, or D of TS 3.7.1, that SR 3.7.1.3 can be met, because only the temperature of the water in each of the available pools should be used to determine the bulk average temperature. Please clarify that SR 3.7.1.5 is to be applied to the DPS and safety-related actuators on each IC/PCC expansion pool-to-equipment pool isolation valve in each connection line on each expansion pool. TS 3.7.1 Action C can correspond to a loss of redundancy. Therefore 7 days is an appropriate time to restore redundancy. However, Action C can also correspond to all four expansion pool-to-equipment pool connection lines being isolated and unable to be opened. This condition represents a loss of function. Action D is also a loss of function. Therefore, for these conditions, Action E should be entered to require a unit shutdown. Please provide a discussion and necessary revisions regarding this issue.
16.2-183	Harbuck C	In generic TS 3.7.2 and Bases, add requirements for CRHA air temperature, clarify and justify requirements for CRHA heat sink temperatures, and clarify requirements for normal and emergency CRHA ventilation isolation dampers.	Please note that the staff will use this RAI to track its continuing review of your recent response to the portion of RAI, 6.4-8 S01 (MFN 08-288 Supplement 2, 9/9/2008) regarding the staff's request for GEH to provide GTS surveillance requirements for the CRHA heat. In addition, the staff is both evaluating and awaiting responses to related RAIs; and therefore, more questions on these issues may be forthcoming. The staff requests that the applicant add a Condition, required actions, and a surveillance requirement for CRHA air temperature to be less than or equal to 78 deg F at all measured locations in the CRHA (that is, no areas above this limit). Specifying the CRHA heat sink average temperatures is not sufficient to ensure the assumed initial temperature of the CRHA, which is necessary because no active cooling system is relied upon for the 72-hour period post accident.

			In the event CRHA average heat sink temperature for one or more heat sinks is not within the specified temperature limit, proposed Required Action A.2 allows 24 hours to restore each CRHA heat sink temperature to within limit as long as Required Action A.1 is satisfied. Proposed Required Action A.1 requires verifying every 8 hours that each CRHA average heat sink temperature is less than or equal to 8.0 degrees F above the specified limit. The staff notes that 8.0 degrees F above the specified limit (e.g., 86 degrees F) is not consistent with the initial CRHA average heat sink temperatures assumed in your design basis calculations of CRHA air temperature post accident with no active air cooling system available to remove heat from the CRHA for 72 hours. Provide additional information to demonstrate that acceptable CRHA air temperatures will be maintained should a design basis event occur while the average temperatures for all CRHA heat sinks exceed the specified limits by 8.0 degrees F. The staff is continuing to evaluate this issue and more questions may be forthcoming. The staff requests that the applicant describe either in the Bases or the DCD (with a specific DCD reference in the Bases) how the heat sink temperatures are measured and why the average temperature computed from those measurements is appropriate for comparing to the acceptance criterion in Required Action A.1 and also in SR 3.7.2.1. The staff requests that the applicant explicitly state in SR 3.7.2.1 that the CRHA Heat Sink established design temperatures are stated in Table B 3.7.2-1; the Bases should reference the location of these design temperatures in the DCD. According to the Bases for LCO 3.7.2, an operable CRHAVS train requires just one of the two EFU fans to be operable, but all 4 isolation dampers - two on the discharge of each fan - must be operable; these dampers are normally closed.

			• The staff requests that the applicant Revise the Bases to explicitly state that the normal ventilation dampers are also required to be operable for automatic closure as a condition of CRHAVS train operability. • CRHA boundary operability requires the EFU isolation dampers associated with the standby EFU fan (in each CRHAVS train) to be either closed or operable. Clarify this statement because as it is written it appears to imply that for the standby fan, both isolation dampers could be left open during normal operation, as long as the dampers are operable for closing. In the operable EFU fan flow path, the dampers must be closed until the fan is started.
16.2-126S1	Dority D	Revise DCD Chapters 16 and 16B to conform to response to RAI 16.2-126, for generic TS 3.8.1 and generic TS 3.8.3.	RAI 16.2-126 Supplement 1 The staff requests that the applicant revise DCD Chapters 16 and 16B to conform to response to RAI 16.2-126. Page 4 of 13 of Enclosure 1 to MFN 07-634, the response to RAI 16.2-126, indicates that a reviewer's note will be included with edits of the Bases discussion of Required Actions A.1, A.2, and A.3 for generic TS 3.8.1. The same reviewer's note is also given on pages 6 and 8 of this Enclosure in the Bases for generic TS 3.8.3, Required Actions B.1 and B.2 and SR 3.8.3.1. Rev 5 of DCD Ch 16 and 16B moved all TS reviewer's notes to Table 16.0-1-A or Table 16.0-2-H, and placed a COL action item enumeration in the margin of the associated technical specification requirement or bases paragraph. However, neither the enumeration for the COL action item nor the reviewer's notes described above appear in DCD Rev 5 generic TS 3.8.1 or generic TS 3.8.3, or their Bases, or in Table 16.0-2-H. The staff requests that the applicant correct this discrepancy.

16.2-184	Harbuck C	Provide the required "Established Design Limits" IN generic TS 3.8.3 For battery terminal voltage and battery room temperature.	The staff requests that the applicant provide the required "Established Design Limits" in generic TS 3.8.3 for battery terminal voltage and battery room temperature. The table entitled "Chapter 16 Changes From Revision 4 TO Revision 5", Item 295 states "Removed brackets from {room} temperature in Condition D and SR 3.8.3.4 consistent with limits on minimum battery temperature needed to ensure battery capacity." However, the following surveillances do not state the acceptance criteria for battery terminal maximum voltage and battery room minimum temperature; neither do the associated bases for these requirements: SR 3.8.3.3 - Verify each required battery terminal voltage is less than or equal to maximum established design limit. SR 3.8.3.4 - Verify required battery room temperature is greater than or equal to minimum established design limit. Condition D and required Action D.1 also refer to battery room temperature minimum established design limit. The staff requests that the applicant revise either the SRS, the Bases, or the DCD (with a specific DCD reference in the Bases) with the numerical values of the above required "Established Design Limits."
16.2-185	Ashkeboussi N	Provide more specific references in the generic TS bases.	The staff requests that the applicant review the entire generic TS bases to provide more specific references. Writer's Guide TSTF-GG-05-01, Section 4.2.8, provides guidance for listing reference documents pertinent to a specific technical specification. The Writer's Guide states that references should be at the section level of the DCD. Please provide revised references to ensure that more detailed information pertinent to the technical specification bases information can be readily located in the DCD.

			The following are a few examples of changes the staff requests that GEH make: 1. Add DCD Section 6.3.3 to the list of references to B3.1.7 since credit is taken for the SLCS in the Loss of Coolant Accident (LOCA) analyses. 2. In the reference section of B3.1.5, item 4 is identified as Section 15.3. The DCD Section 15.3 contains several event analyses. Identify the applicable section of 15.3 rather than the whole Section 15.3. 3. In B3.4.1, the overpressure protection analyses description was transferred to 15.5.1 from 5.2.2 and hence reference should be Section 15.5.1 rather than Section 5.2.2. Correct Reference 3 from Section 15 to Section 15.5.1. Reference 2, Section 5.2.2 is still applicable and hence should be kept as a reference. Correct reference 2 from Section 5.2 to Section 5.2.2. 4. Change B3.4.5 reference 1 from Section 15 to Section 15.5.1. 5. Change B3.5.1, B3.5.2, and B3.5.3 references from Section 6 to Section 6.3.3 and change Section 15 to Section 15.4.4. 6. Change B3.5.4 Reference 1 from Section 5 to Section 5.4.6, Reference 2 from Section 6 to Section 6.3.3, and Reference 3 from Section 7 to Section 7.4.4. 7. Change B3.5.5 Reference 1 from Section 5 to Section 5.4.6.
16.2-156S2	Harbuck C	Satisfy the requirement of 10 CFR 50.36(c)(1)(ii)(A).	In consideration of the response to RAI 16.2-156 Supplement 1, the staff requests that the applicant revise the proposed setpoint control program specification by adopting the model specification provided in Enclosure 2. It is the staff's position that this will be necessary for the staff to conclude that the SCP satisfies 10 CFR 50.36(c)(1)(ii)(A). Note that the staff has removed its request to include a quarterly Channel Operational Test (COT) in the generic TS. It has also revised the SCP to state that the approved setpoint methodology will control changes to the specified setpoint program document, instead of 10 CFR 50.59. The model SCP

			also includes a requirement to submit the setpoint program document to the NRC on the same schedule that is specified for submitting the COLR. In addition, the model SCP reflects the recent change in 10 CFR 50.36 to restore the original paragraph designations (73 FR 54931, dated September 24, 2008; effective October 24, 2008).

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.11 Setpoint Control Program

a. The Setpoint Control Program (SCP) implements the regulatory requirement of 10 CFR 50.36(c)(1)(ii)(A) that technical specifications will include items in the category of limiting safety system settings (LSSS), which are settings for automatic protective devices related to those variables having significant safety functions.

b. The Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint ($NTSP_F$), Allowable Value (AV), As-Found Tolerance (AFT), and As-Left Tolerance (ALT) for each Technical Specification required automatic protection instrumentation function shall be calculated in conformance with the instrumentation setpoint methodology previously reviewed and approved by the NRC in NEDE-33304P-A, "GEH ABWR/ESBWR Setpoint Methodology," [Revision #, dated Month dd, yyyy, (MLxxxxxxxxx)], and the conditions stated in the associated NRC safety evaluation, [Letter to GEH from NRC, Title, dated Month, dd, yyyy, (MLxxxxxxxxx)].

c. Performance of a CHANNEL CALIBRATION surveillance shall include the following:

1. The as-left value of the instrument channel trip setting shall be the value at which the channel was set at the completion of the surveillance with no additional adjustment of the instrument channel. The as-found value of the instrument channel trip setting shall be the trip setting value measured during the subsequent performance of the surveillance before making any adjustment to the instrument channel that could change the trip setting value.

2. The as-found value of the instrument channel trip setting shall be compared with the previous as-left value or the specified $NTSP_F$. If the as-found value is compared with the specified $NTSP_F$ to meet this requirement, the following conditions apply:

i. the setting tolerance band (the specified ALT) must be less than or equal to the square root of the sum of the squares of reference accuracy, measurement and test equipment, and readability uncertainties;

ii. the setting tolerance band (the specified ALT) must be included in the total loop uncertainty; and

iii. the pre-defined test acceptance criteria band (the specified AFT) for the as-found value must include either the setting tolerance band (the specified ALT) or the uncertainties associated with the setting tolerance band (the specified ALT), but not both of these.

3. If the as-found value of the instrument channel trip setting differs from the previous as-left value or the specified $NTSP_F$ by more than the pre-defined test acceptance criteria band (the specified AFT), when compared in accordance with paragraph c.2 above, then this condition shall be dispositioned by the plant's corrective action program, and the instrument channel shall be evaluated to verify that it is functioning in accordance with its design basis before declaring the surveillance requirement met and returning the instrument channel to service.

4. If the as-found value of the instrument channel trip setting is less conservative than the specified AV, then the surveillance requirement is not met and the instrument channel shall be immediately declared inoperable.

5. The instrument channel trip setting shall be set to a value within the specified ALT around the specified $NTSP_F$ (a trip setting as or more conservative than the specified LTSP) at the completion of the surveillance; otherwise, the surveillance requirement is not met and the instrument channel shall be immediately declared inoperable.

d. The difference between the instrument channel trip setting as-found value and either the previous as-left value or the specified $NTSP_F$, for each Technical Specification required automatic protection instrumentation function shall be trended and evaluated to verify that the instrument channel is functioning in accordance with its design basis.

e. The SCP shall establish a document containing the current value of the specified LTSP, $NTSP_F$, AV, AFT, and ALT for each Technical Specification required automatic protection instrumentation function, a record of changes to those values, and references to the calculation documentation. Changes to this document shall be governed by the approved setpoint methodology. This document including any midcycle revisions or supplements shall be provided upon issuance for each reload cycle to the NRC.

cc:

Ms. Michele Boyd
Legislative Director
Energy Program
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

Mr. Ray Ganthner
Senior Vice President
AREVA, NP, Inc. 3315
Old Forest Road
P.O. Box 10935
Lynchburg, VA 24506-0935

DC GE - ESBWR Mailing List

Email

aec@nrc.gov (Amy Cubbage)
APH@NEI.org (Adrian Heymer)
art.alford@ge.com (Art Alford)
awc@nei.org (Anne W. Cottingham)
bevans@enercon.com (Bob Evans)
bob.brown@ge.com (Robert E. Brown)
BrinkmCB@westinghouse.com (Charles Brinkman)
cberger@energetics.com (Carl Berger)
charles.bagnal@ge.com
charles@blackburncarter.com (Charles Irvine)
chris.maslak@ge.com (Chris Maslak)
CumminWE@Westinghouse.com (Edward W. Cummins)
cwaltman@roe.com (C. Waltman)
dan1.williamson@ge.com (Dan Williamson)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
David.piepmeyer@ge.com (David Piepmeyer)
dlochbaum@UCSUSA.org (David Lochbaum)
don.lewis@ge.com (Don Lewis)
erg-xl@cox.net (Eddie R. Grant)
Eugene_Grecheck@dom.com (Eugene S. Grecheck)
Frostie.white@ge.com (Frostie White)
gcesare@enercon.com (Guy Cesare)
GEH-NRC@hse.gsi.gov.uk (Geoff Grint)
george.honma@ge.com (George Honma)
george.wadkins@ge.com (George Wadkins)
GovePA@BV.com (Patrick Gove)
greshaja@westinghouse.com (James Gresham)
gzinke@entergy.com (George Alan Zinke)
hickste@earthlink.net (Thomas Hicks)
james.beard@gene.ge.com (James Beard)
jeff.waal@ge.com (Jeff Waal)
jgutierrez@morganlewis.com (Jay M. Gutierrez)
Jim.Kinsey@inl.gov (James Kinsey)
jim.riccio@wdc.greenpeace.org (James Riccio)
JJNesrsta@cpsenergy.com (James J. Nesrsta)
joel.Friday@ge.com (Joel Friday)
John.O'Neill@pillsburylaw.com (John O'Neill)
john.sorensen@ge.com (John Sorensen)
Joseph_Hegner@dom.com (Joseph Hegner)
junichi_uchiyama@mnes-us.com (Junichi Uchiyama)
kenneth.ainger@exeloncorp.com (Kenneth Ainger)
kimberly.milchuck@ge.com (Kimberly Milchuck)
KSutton@morganlewis.com (Kathryn M. Sutton)

DC GE - ESBWR Mailing List

kurt.schaefer@ge.com (Kurt Schaefer)
kwaugh@impact-net.org (Kenneth O. Waugh)
laura.bello@ge.com (Laura Bello)
lchandler@morganlewis.com (Lawrence J. Chandler)
lee.dougherty@ge.com
lou.lanese@ge.com (Lou Lanese)
Marc.Brooks@dhs.gov (Marc Brooks)
maria.webb@pillsburylaw.com (Maria Webb)
mark.beaumont@wsms.com (Mark Beaumont)
Marvin.Smith@dom.com (Marvin L. Smith)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
media@nei.org (Scott Peterson)
mike_moran@fpl.com (Mike Moran)
MSF@nei.org (Marvin Fertel)
mwetterhahn@winston.com (M. Wetterhahn)
nirsnet@nirs.org (Michael Mariotte)
PAC2@nrc.gov (Peter Cochran)
pareez.golub@ge.com (Pareez Golub)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gaukler@pillsburylaw.com (Paul Gaukler)
Paul@beyondnuclear.org (Paul Gunter)
peter.jordan@ge.com (Peter Jordan)
phinnen@entergy.com (Paul Hinnenkamp)
pshastings@duke-energy.com (Peter Hastings)
randy.newton@ge.com (Randy Newton)
rick.kingston@ge.com (Rick Kingston)
RJB@NEI.org (Russell Bell)
RKTemple@cpsenergy.com (R.K. Temple)
roberta.swain@ge.com (Roberta Swain)
Russell.Wells@Areva.com (Russell Wells)
sabinski@suddenlink.net (Steve A. Bennett)
sandra.sloan@areva.com (Sandra Sloan)
SauerB@BV.com (Robert C. Sauer)
sfrantz@morganlewis.com (Stephen P. Frantz)
steven.hucik@ge.com (Steven Hucik)
tdurkin@energetics.com (Tim Durkin)
tom.childress@ge.com
tom.miller@hq.doe.gov (Tom Miller)
trsmith@winston.com (Tyson Smith)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
VictorB@bv.com (Bill Victor)
Wanda.K.Marshall@dom.com (Wanda K. Marshall)
wayne.cutright@ge.com (Wayne Cutright)
wayne.marquino@ge.com (Wayne Marquino)
whorin@winston.com (W. Horin)