August 5, 2008

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 236 RELATED TO ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

By letter dated August 24, 2005, GE-Hitachi Nuclear Energy (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.

The staff notes that numerous inconsistencies were identified between Tier 1 and Tier 2 and within Tier 2 for instrumentation and control systems which need to be addressed. The staff has provided representative examples of the types of inconsistencies that GEH should address on a comprehensive basis. The associated RAIs 14.3-265 Supplement 1, 14.3-403, 7.1-99, 7.1-100, and 7.1-101 are interrelated and should be considered collectively but for ease of tracking were split into multiple RAIs.

If you have any questions or comments concerning this matter, you may contact me at 301-415-6256 or Dennis.Galvin@nrc.gov or you may contact Amy Cubbage at 301-415-2875 or Amy.Cubbage@nrc.gov.

Sincerely,

/RA/

Dennis Galvin, 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

If you have any questions or comments concerning this matter, you may contact me at 301-415-6256 or Dennis.Galvin@nrc.gov or you may contact Amy Cubbage at 301-415-2875 or Amy.Cubbage@nrc.gov.

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 236 RELATED TO ESBWR DESIGN CERTIFICATION APPLICATION DATED AUGUST 5, 2008

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

RAI Number	Reviewer	Question Summary	Full Text
RAI 9.4-29 Supplement 2 (MFN 08-348, April 15, 2008)	Forrest E	Adequacy of EFU supply and circulation	In order to support the safety evaluation with reference to the adequacy of the emergency filter unit (EFU) air supply and circulation in the control room, the staff needs additional information and clarification on the response to the RAI and needs to have the key information summarized in the DCD. The GEH response to RAI 9.4-29 states that "EFU air flow will be optimized during detailed design with several methods available to ensure adequate mixing. EFU air distribution will be enhanced by extending the EFU ductwork, attached to flexible air trunks above the ceiling towards the center of the control room and terminating with ceiling diffusers." A. The staff does not have sufficient information as to how mixing of air occurs. Mixing affects both passive cooling and the freshness of the air that the operator breathes. Based on an 88,000 cubic foot control room with 15-foot ceilings, the floor area of the control room would be about 6000 square feet. One EFU ceiling register per 1000 square feet would deliver about 70 cfm if equally balanced. With 1/8 inch w.g. discharge pressure, the velocity of discharge would be very low and not effective at promoting mixing. If it were a hot day (117 def F max design temperature) thermal stratification and flow upward into the ceiling plenum would be probable. Although air is being removed by a leakage path in the floor plenum and leakage paths around the access doors, it is not clear that the leakage path facilitates mixing. ASHRAE 62-1989 based on the figure provided in the standard applies to a well mixed HVAC system which has a portion of the air being recirculated. The ESBWR has no recirculation in the first 72 hours. It is also not clear if the bathroom, kitchen, shift supervisors office or other areas are being provided with supply air from the EFU system. Please provide in the DCD sufficient design details to provide reasonable assurance that the air would mix uniformly by the EFU distribution to support the conclusion that the operators would have sufficient fresh air and that the assumption used in passive cooling analysis for uniform temperature in the control room is

RAI Number	Reviewer	Question Summary	Full Text
			reasonable. A process flow diagram which shows EFU operation, flow rates, mixing of air capability and key controls would enhance the understanding in the DCD. B. The staff is concerned that the reverse of the air flow in EFU operation which occurs because there is no recirculation AHU operation and the great reduction in flow from 11,000 cfm being recirculated from the floor up to 424 cfm being supplied from the ceiling down with unconditioned (potentially hot) air will not provide adequate cooling for electrical cabinets and components and that the temperatures inside the cabinets will increase. Please provide information on the temperature response inside CR safety related cabinets and assurance that it will not cause spurious or erratic operation or failure. Please make an appropriate statement in the DCD. C. The RAI response identifies a carbon dioxide 5000 ppm threshold value limit. Five thousand (5000) ppm of carbon dioxide has not been established as a limit for the conditions of a control room which does not have substantial mixing or carbon dioxide monitoring. The principal source of carbon dioxide is breath being exhaled by personnel in the room which also carries with it other aromatic and biological effluents. The staff notes that ASHRAE 62-1989 suggest a limit of 1000 ppm as a comfort level beyond which individuals may start feeling sick or have headaches. Considering the fact that control room temperatures could and probably would be rising and the stress level caused by a design basis accident would be high, operator performance might better be assured if the ASHRAE 62-1989 guidance limit was used. Please clarify how operator performance is assured in the enclosed confines of the CRHA with the limited fresh air supply being proposed. What defense-in-depth measures are available to increase fresh air supply in the event that the air becomes stale and lacking in freshness?

RAI 9.4-31 Supplement 1 (MFN 08-343, April 11, 2008)	Forrest E	CRHA EFU power by Ancillary Diesels	In order to complete its review of the control building HVAC system which includes the emergency filter units (EFUs) for the control room habitability area (CRHA) and their source of power for a design basis accident with loss of offsite power, the staff submitted RAI 9.4-31 to obtain information on operation after 72 hours. GEH responded to this RAI on April 11, 2008 stating that the portable AC power generators had been replaced by "ancillary diesels." A. Are manual operator actions required to connect the ancillary diesel power with the EFU system? Can this be done in the CRHA or would it require action in other areas of the plant? If outside the CRHA, where would the actions take place? How much time would be required? Will appropriate instructions be included in the emergency operation procedures to require this action? B. Please describe the Main Control Room A/C unit in sufficient detail in the DCD for the staff to make a determination of its adequacy for post 72-hour cooling. The staff's understanding is that this Main Control Room A/C unit is independent of and being supplied in addition to the existing chilled water cooling coils in the recirculation air handling unit (AHU). Please include the Main Control Room A/C unit and the recirculation AHU that drives the flow in the Availability and Controls manual. Are there any new penetrations to the CRHA barrier and are they suitably protected, seismic, safety related, and isolatable? C. Please clarify in the DCD that the post 72-hour operation of the EFU and other functions related to habitability such as cooling capacity and air recirculation are safety-related functions for the full duration of the accident which is typically taken as 30 days even though RTNSS qualified systems are being used after 72 hours. D. Please be consistent in terminology. The staff assumes that "Main Control Room A/C unit" mentioned in the first paragraph of item A in the GEH response is the same as the "auxiliary air conditioning unit" mentioned at the bottom of the last paragraph of item A in the GEH response. Please confirm.

			E. In DCD Tier 1, Revision 5, Section 2.16.2.3, Item 12, GEH has added, "EFUs maintain habitable conditions in the CRHA for 72 hours." The description should be clarified and address the RTNSS functions to state that the EFU provides fresh filtered air to the CRHA indefinitely powered for the first 72 hours by safety-related batteries and powered from ancillary diesels or offsite power after 72 hours. F. DCD Tier 2 Revision 5 Table 2.16.2-6 Item 10 provides acceptance criteria for EFU filter efficiency. The acceptance criteria on filter efficiency and in place bypass testing in Regulatory Guide 1.52 Regulatory Position 6 needs to be referenced in the acceptance criteria column. G. DCD Tier 2, Revision 5, Section 6.4.3, discusses under the heading of "Leak Tightness," isolation dampers that penetrate the CRHA boundary envelope. Please identify that these isolation dampers are safety related. H. Please identify the power source and failure position of each of the CRHA isolation dampers. Please clarify if power or instrument air is needed either during the first 72 hours or during the 72-hour to 30 day period following an event. If power or instrument air is needed during the first 72 hours to change the positions of these valves (dampers) then it must come from a Safety Related Source. After 72 hours, power or instrument air could be supplied by a RTNSS source. Currently IA is not identified as RTNSS. I. On the mark up Revision 5 page 9.4-4, second box, please clarify that the EFU has no role in maintaining CRHA temperature. It only supplies fresh filtered air maybe as hot as 117 degrees F. It is a safety related function for the full 30 days of a design basis accident. J. DCD Tier 2, Revision 5, Section 6.4.4 states in the discussion of backup power for EFU fans that, "these generators are required to support the operation of the control room EFU beyond 72 hours after an accident. This function is a nonsafety-related function…" Clarify that the operation of the EFU for the full 30 days of a design basis accident is a safety-related function.

RAI 14.3-265 Supplement 1 (MFN 08-086, Supplement 43 May 9, 2008)	Beacom R	Address all IEEE Std 603 Criteria in DCD Tier 1	By RAI 14.3-265, with regards to IEEE Std 603 applicability, in DCD Tier 1, Table 2.2.15-1 "ITAAC Applicability Matrix," the staff requested GEH to respond to "ALL sections of this standard must be addressed and the table completed. It should be identified why certain sections do not require ITAAC and how compliance is substantiated or links could be provided to existing non system based ITAAC." In reviewing the response the staff finds that additional ITAAC are needed and there are many inconsistencies between Tier 1 and Tier 2 and within Tier 2 that need to be addressed. Note that RAIs 14.3-265 Supplement 1, 14.3-403, 7.1-99, 7.1-100, and 7.1-101 are interrelated and should be considered collectively but for ease of tracking were split into multiple RAIs. Provide DAC/ITAAC for IEEE Std 603, Section 4 for Criteria 4.1 to 4.12 in DCD Tier 1, Section 2.2.15. The DCD does not provide a specific design basis for each system as required by IEEE Std 603, Section 4. While DCD Tier 2 provides general design basis information, much of the design basis information needed for conformance to IEEE Std 603, Section 4, has either been omitted or not clearly identified. In lieu of adding the requested DAC, GEH is requested to provide consolidated design basis information for each safety-system organized by the IEEE 603, Section 4, Criteria. Several examples are provided: A. Applicable design basis information has not been clearly identified. DCD Tier 2, Section 7.1.6.6.1.1, identifies that design basis information about the specific safety-related or nonsafety-related interfacing system design bases, interlocks, and functions is found in DCD Tier 2, Sections 4.6, 5.2, 5.4, 6.2, 6.3, 8.3, 9.1, 9.3, 9.4, 10.2, 10.3, and 10.4 as well as over 20 subsections of Chapter 7. With rare exception, these sections do not identify what information is presented to meet the requirements of IEEE Std 603, Section 4. This section, as written, should not be used as an identifier in DCD Tier 2, Table 7.1-2 for mapping the application of IEEE Std. 603 Criteria. B. DCD Tier 2 omits information on the applicability and design basis information for IEEE 603, Section 4, Criteria.

			• DCD Tier 2, Table 7.1-2, does not identify IEEE Std 603, Criteria 4.9 and 4.11. • DCD Tier 2, Table 7.1-2, lists IEEE Std 603, Criteria 4.6 and 4.7 but doesn't reference any sections for any I&C system. Again, a DAC/ ITAAC would be necessary as described in Appendix C.II.1-A, General ITAAC Development Guidance, of RG 1.206 if this information is not available. • DCD Tier 2, Table 7.1-2, identifies for IEEE Std 603, Criterion 4.12 only one system, the automatic depressurization system (ADS) as having the only special design basis. Per IEEE Std 603, this criterion requires "Any other special design basis that may be imposed on the system design (example: diversity, interlocks, regulatory agency criteria)." The NRC has identified diversity and other regulatory criteria that should be included in the design basis under this criterion. Therefore, the staff requests GEH to provide DAC for IEEE Std 603 Section 4 Criteria or provide the required design basis information in a consolidated form. C. DCD Tier 2 does not provide clear information on the applicability and design basis information for IEEE 603 Criteria. Example IEEE Std 603 Criterion 4.3 for RPS: DCD Tier 2, Table 7.1-2, "Section Roadmap of I&C Systems Conformance to Evaluation of IEEE Std. 603 Specific Criteria Compliance" identifies specific sections of DCD chapters 7 and 15 where compliance with IEEE Std 603 is discussed. For example, clear information on the applicability and design basis information for IEEE Std 603, Criterion 4.3 for the RPS system is not provided. • IEEE Std 603, Criterion 4.3 requires identification of "The permissive conditions for each operating bypass capability that is to be provided." • DCD Tier 2, Table 7.1-2, identifies 4 DCD sections where compliance with IEEE Criterion 4.3 could be addressed: Sections 7.2.1.1, 7.2.1.2.4.1, 7.2.1.2.4.2, Table 15.0-2.

			• DCD Tier 2, Section 7.2.1.1, provides ambiguous information. Section 7.2.1.1 identifies the following design basis – "To provide selective automatic and manual operational trip bypasses, as necessary, to permit proper plant operations. These bypasses allow for protection requirements depending upon specific existing or subsequent reactor operating conditions." Use of the descriptions "as necessary" or "depending upon specific existing or subsequent conditions" are ambiguous and do not provide adequate design basis. • DCD Tier 2, Sections 7.2.1.2.4.1 and 7.2.1.2.4.2, describe the arrangement and initiating circuits for the RPS. These sections don't reference IEEE Std 603 Criterion 4.3 or permissive conditions for operating bypass capability. • DCD Tier 2, Table 15.0-2, doesn't reference Criterion 4.3 or permissive conditions for operating bypasses. The staff considers this example to be representative. Therefore, the staff requests GEH to provide DAC for IEEE Std 603, Section 4, Criteria or provide the required design basis information in a consolidated form. If GEH plans to fully address IEEE Std 603 Section 4 Criteria in the DCD, GEH should perform a similar review of each criterion.
7.1-99	Beacom R	Identify the applicability of IEEE Std 603 requirements to I&C systems in a clear and consistent manner in Tier 2	In reviewing the response to RAI 14.3-265, the staff finds that additional ITAAC are needed and there are many inconsistencies between Tier 1 and Tier 2 and within Tier 2 that need to be addressed. Note that RAIs 14.3-265 Supplement 1, 14.3-403, 7.1-99, 7.1-100, and 7.1-101 are interrelated and should be considered collectively but for ease of tracking were split into multiple RAIs. The staff requests GEH to identify the applicability of IEEE Std 603 requirements to I&C systems in a clear and consistent manner in Tier 2. The staff also request GEH to address general inconsistencies in DCD Tier 2, Tables 7.1-1 and 7.1-2.

			A. DCD Tier 2, Table 7.1-2, "Section Roadmap of I&C Systems Conformance to Evaluation of IEEE Std. 603 Specific Criteria Compliance," does not identify the conformance of I&C systems to IEEE Std 603 requirements. Table 7.1-2 provides some references to where suggested applicability may be found. If the criterion is properly referenced, these references don't identify the degree of conformance or the method of implementation of the requirement. B. The staff requests that GEH address the applicability for each I&C system identified in DCD Tier 2, Table 7.1.1, for each IEEE Std 603 requirement (sections 4, 5, 6, 7 and 8). This table should also address each system and criterion in DCD Tier 1, Table 2.2.15-1, "I&C Systems Regulatory Requirements Applicability Matrix." This could be done by extending Table 7.1-1 or adding a new table with the same systems. C. While DCD Tier 2 Table 7.1-2 does not fully address applicability of IEEE Std 603 requirements, the staff finds it useful as a roadmap for discussions of applicability. The staff requests that the table be retained and renamed. D. IEEE Std 7-4.3.2, "IEEE Standard Criteria for Digital Computers in Safety Systems of Nuclear Power Generating Stations." criteria should be included with IEEE Std 603 criteria. Annex A, Table A1, of that standard, identifies additional requirements for five criteria of IEEE Std 603. Parts of conformance to IEEE Std 603/7-4.3.2 are included in the ITAAC for the software development. NEDO-33226, "ESBWR I&C Software Management Plan," Rev. 2, claims applicability to IEEE Std 7-4.3.2, "Where these IEEE Standards provide recommended implementation techniques and methods, this SMP makes specific commitments only to those requirements restated herein." Therefore the complement, or what is not in NEDO-33226, should be included in the DAC/ ITAAC identified in DCD Tier 1, Table 2.2.15-2 in addition to a DAC/ ITAAC created for 5.3 and referencing the software development process.

			E. In one row of DCD Tier 2, Table 7.1-2, five criteria of IEEE Std. 603 are grouped together, 4.1–4.5. No attempt is made to distinguish, by reference, how these different criteria are applicable to the different systems. Also, many of these criteria have separate subparts which are not identified. F. Use of DCD Tier 2, Section 7.1.2.1 should not be used as an identifier for determining conformance to IEEE 603 specific criteria as DCD Tier 2, Table 7.1-2 suggests. Section 7.1.2.1 adds no value, as written, for determination of the IEEE Std 603 design basis by stating "The safety-related design bases applicable to Q-DCIS are found in IEEE Std 603 Sections 4.1, 4.2, 4.5, 4.8, and 4.10." G. The listing of GDC has to be reviewed and expanded in DCD Tier 2, Table 7.1-1. Example ATWS/ SLC does not show sufficient GDC applicability. H. DCD Tier 2, Table 7.1-1 identifies the PRMS (Q) and the ATWS/ SLC (Q) where DCD Tier 2, Table 7.1-2 does not. DCD Tier 2, Table 7.1-2 identifies the PCCS where DCD Tier 2, Table 7.1-1 does not. Also Table 7.1-2 identifies a LD&IS (Q).
7.1-100	Beacom R	Address discrepancies between Tier 1, Tier 2 and Tables 7.1-1, 7.1-2	In reviewing the response to RAI 14.3-265, the staff finds that additional ITAAC are needed and there are many inconsistencies between Tier 1 and Tier 2 and within Tier 2 that need to be addressed. Note that RAIs 14.3-265 Supplement 1, 14.3-403, 7.1-99, 7.1-100, and 7.1-101 are interrelated and should be considered collectively but for ease of tracking were split into multiple RAIs. The staff requests the applicant to address discrepancies between Tier 1, Tier 2 Tables 7.1-1 and 7.1-2, and the DCD Tier 2 text applicable to the IEEE standards for IEEE Std 603, Criteria 5, 6, 7, and 8. For example, the staff identified the following differences in applicability for IEEE Std 603, Criterion 5.1:

			A. DCD Tier 1, Table 2.2.15-1, ITAAC Applicability Matrix, identifies the criterion is applicable to: NMS, RPS, LD&IS, SSLC/ESF, ICS, GDCS, CS, RBHVS, CBHVS, EFU. DCD Tier 2, Table 7.1-2 identifies this criterion is applicable to: NMS, RPS, LD&IS, SSLC/ESF, ICS, GDCS, ADS, CRHS, VBIF, SLC, RSS. B. DCD Tier 2, Section 7.2.3.3 specifically identifies this criterion is applicable to the SPTM but this is not identified in DCD Tier 2, Table 7.1-2, or in DCD Tier 1, Table 2.2.15-1. C. DCD Tier 2, Table 7.1-1 identifies RG 1.53, "Application of Single Failure Criterion to Nuclear Power Plant Protection Systems," is applicable to: NMS, RPS, LD&IS, SSLC/ESF, ICS, GDCS, SPTM, ADS, CRHS, VBIF, SLC, RSS, CMS, PRMS, ATWS/SLC. This should agree with applicability to Criterion 5.1. D. DCD Tier 2, Section 7.1.2.4 identifies that the Q-DCIS conforms to IEEE Std 379. However, this standard is discussed in an irregular fashion in the DCD. IEEE Std 379 is addressed in discussions of RG 1.53 for DCD Tier 2 Sections 7.2.1.3.4, 7.3.1.1.3.4, 7.3.1.2.3.4, 7.3.5.3.4, 7.3.6.3.4, and 7.4.2.3.3. IEEE Std 379 is not addressed in discussions of RG 1.53 for DCD Tier 2 Sections 7.1.6.4, 7.2.2.3.4, 7.2.2.3.4, 7.3.3.3.4, 7.3.4.3.4, 7.4.1.3.4, 7.4.4.3.4, 7.4.4.3.4, 7.5.2.3.4, 7.5.3.3.4, and 7.8.3. Please clarify in the RAI response if the intent is not to conform to IEEE Std 379 for those system where it is not addressed. Also correct the DCD to address conformance to IEEE in a consistent manner as applicable The staff considers this example to be representative. The staff requests GEH to revise Tier 1 and Tier 2 to ensure consistency between (i) DCD Tier 1, Table 2.2.15-1; (ii) the proposed Tier 2 applicability table discussed in RAI 7.1-99, Item B; (iii) DCD Tier 2, Table 7.1-2; (iv) Tier 2 safety evaluations; and (v) Tier 2 discussions of RG for <u>all</u> remaining criteria, and <u>all</u> applicable systems. A necessary attribute to achieve this would to be to use the same list of applicable safety systems in each area.

			The staff requests GEH to revise DCD Tier 2, Figures 7.1-1, 7.1-2 and 7.1-4 to add and use the same designation for systems identified in DCD Tier 2, Tables 7.1-1 and 7.1-2. This request is directed towards ensuring that the subject systems are clearly identified on the Simplified Block, Functional Network, and Diversity Diagram. The staff also requests GEH to revise corresponding diagrams in documents incorporated by reference into the DCD, for example, NEDO-33251, Figures 1 and 2 and NEDE-33295-P, Figure 1-1.
7.1-101	Beacom R	Address general inconsistencies between Tier 1 and Tier 2 for I&C systems	In reviewing the response to RAI 14.3-265, the staff finds that additional ITAAC are needed and there are many inconsistencies between Tier 1 and Tier 2 and within Tier 2 that need to be addressed. Note that RAIs 14.3-265 Supplement 1, 14.3-403, 7.1-99, 7.1-100, and 7.1-101 are interrelated and should be considered collectively but for ease of tracking were split into multiple RAIs. The staff requests GEH to address the general inconsistencies between Tier 1 and Tier 2 for I&C systems. Per RG 1.206, Section C.II.1, it is stated that "The design descriptions contained in a Tier 1 document are derived from the Tier 2 document." In other words the Tier 1 information should be a subset of, and derived from, the Tier 2 information. However, for the several systems, the connection from Tier 2 to Tier 1 is missing. A. RBHVS, CBHVS, CRDS and the EFUs do not have separate IEEE Std 603 requirements identified at the Tier 2 level but do have separate Tier 1 IEEE Std 603 requirements. B. The RBHVS or the CBHVS systems are not identified or described in any Tier 2 chapters (e.g., Chapters 6, 7 or 9) but are shown on the ITAAC Applicability Matrix in Tier 1. C. DCD Tier 2, Sections 2.7.1, Main Control Room Panels, and 2.7.3, Local Control Panels and Racks, do not have IEEE Std 603 requirements identified in Table 2.2.15-1 (Tier 1) or Tier 2 but yet propose "separation and independence" between divisions and safety to nonsafety systems. Section 2.7.1 identifies "MCR Panel software" but Tier 1 or Tier 2 does not

			have a section explaining what this is or what equipment it is used on. These sections do not reference the equipment qualification program ITAAC but states they conform to Seismic Category I requirements. D. All systems that have safety related functions should be reviewed for IEEE Std 603 requirements. Example: the PMS, Pool Monitoring Subsystems, have safety-related functions described in DCD Tier 2, Section 7.5.5 but no IEEE Std 603 requirements are identified in Section 7.5.5, DCD Tier 2, Table 7.1-2 or DCD Tier 1, Table 2.2.15-1. This system, or all the subsystems, is not listed on DCD Tier 2, Table 7.1-1. E. All systems in Tier 2 that have separate IEEE Std 603 requirements stated should be listed on the ITAAC Applicability Matrix in Tier 1. Example: ADS (Section 7.3.1.1.3.1), CRHS (7.3.4.3.1) and PAMS (7.5.1) are systems identified at the Tier 2 level having separate IEEE 603 requirements but are not listed in the Tier 1 ITAAC Applicability Matrix. F. Applicability of the criteria to subsystems of the RPS and ESF differ in many cases between the Tier 2 vs. the Tier 1 levels. Tier 1 often identifies criteria to subsystems (eg SPTM, ADS, CMS etc) as not applicable but Tier 2 does. If this is the case, non-applicability to the subsystem should be discussed in the DCD and Tier 2 & 1 should agree. Examples: • Criterion 5.2, Completion of Protective Action, DCD Tier 1, Table 2.2.15-1, identifies this is applicable to the SSLC/ESF but not the SLC but it is applicable in Tier 2. This should be made consistent. • Criterion 5.9, Control of Access, DCD Tier 1, Table 2.2.15-1, identifies this is applicable to the SSLC/ESF but not the SLC, ICS, GDCS or the CMS. The requirement is “controls shall be supported by provisions within the safety systems, by provision in the generating station design, or by a combination thereof.” How this is not required should be explained in Tier 2 of the DCD.

			G. If the Tier 1 Functional Arrangement Tables are referenced for equipment having IEEE 603 requirements, then that equipment or function should be identified, specifically, as having IEEE Std 603 requirements. Also, all functions in the Tier 1 Functional Arrangement Tables must be checked for full discussion in Tier 2. H. If the Tier 1 "Containment System Logic Controllers", listed in DCD Tier 1, Table 2.15.1-1c, are the same as the Tier 2 "VB isolation function logic controllers" those should be made consistent. I. With regards to the Containment System Logic Controllers, there is far too little information for the staff to determine why only 10 of the 31 IEEE Std 603 criteria are identified as applicable. The applicant is to provide the information or the analysis in the DCD why only these criteria are applicable to this device.
14.3-402	Beacom R	Provide results summary reports for all systems with ITAAC invoking DCD Tier 1 Section 3.2.	In reviewing the response to RAI 14.3-265, the staff finds that additional ITAAC are needed and there are many inconsistencies between Tier 1 and Tier 2 and within Tier 2 that need to be addressed. Note that RAIs 14.3-265 Supplement 1, 14.3-403, 7.1-99, 7.1-100, and 7.1-101 are interrelated and should be considered collectively but for ease of tracking were split into multiple RAIs. DCD Tier 1, Tables 2.7.1-1 (Main Control Room), 2.16.2-2 (RBVS), 2.16.2-4 (CRHAVS), and 2.16.2-6 (EFUs) contain ITAAC which states that, "… software is developed in accordance with the software development program described in Section 3.2." The ITAAC in DCD Tier 1, Table 3.2-1 each state that, "The results summary report(s) address the ESBWR safety-related systems described in Table 2.2.10-1 and their associated safety-related functions." However, the identified systems are not included in Table 2.2.10-1, which indicates that they will not be included in the software development results summary reports. Revise DCD Tier 1 to provide results summary reports for all systems with ITAAC invoking the software development program described in DCD Tier 1, Section 3.2.

cc:

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