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Subject: **Submittal of Response to NRC Request for Additional Information Letter No. 356 Related to ESBWR Design Certification - RAI Number 14.3-454**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter No. 356, dated June 30, 2009 (Reference 1).

Enclosure 1 provides the GEH response to the subject RAI as requested in Reference 1. Enclosure 2 contains the DCD changes to Tier 1 as a result of GEH's response to this RAI. Verified DCD changes associated with this RAI response are identified in the enclosed markups by enclosing the text within a black box.

If you have any questions or require additional information, please contact me.

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

References:

1. MFN 09-465 - Letter from U.S. Nuclear Regulatory Commission to Jerald G. Head, *Request For Additional Information Letter No. 356 Related To ESBWR Design Certification Application*, dated June 30, 2009

Enclosures:

1. MFN 09-495 – Response to NRC Request for Additional Information Letter No. 356 Related to ESBWR Design Certification Application - RAI Number 14.3-454
2. MFN 09-495 – Response to NRC Request for Additional Information Letter No. 356 Related to ESBWR Design Certification Application - RAI Number 14.3-454 – DCD Markups

cc:	AE Cubbage	USNRC (with enclosures)
	JG Head	GEH/Wilmington (with enclosures)
	DH Hinds	GEH/Wilmington (with enclosures)
	eDRF Section	0000-0104-6672 (RAI 14.3-454)

Enclosure 1

MFN 09-495

Response to NRC Request for

Additional Information Letter No. 356

Related to ESBWR Design Certification Application

RAI Number 14.3-454

NRC RAI 14.3-454

Revise as-built definition

In the Draft Tier 1 Revision 6, submitted December 18, 2008, GEH updated the definition of "as-built" which is in accordance with NEI 08-01, "Industry Guidelines for ITAAC Closure Process Under 10 CFR Part 52" that was submitted on August 1, 2008, and which is planned to be endorsed by Regulatory Guide 1.215, "Guidance for ITAAC Closure Under 10 CFR Part 52". However, the staff noted that the GEH definition did not include the clarification as discussed in NEI 08-01 and RG 1.215 to be issued. The clarification states that:

"COL licensees referencing already-certified designs are, of course, bound by the definitions in the design certification rather than the definitions in NEI 08-01, but the NRC staff believes that the NEI 08-01 definition of "as-built" could form part of the basis for a DCD definition of "as-built" in future design certifications and design certification amendments. Any such DCD definition, however, should also reflect the additional discussion in NEI 08-01 Section 3.1.4. The second paragraph of NEI 08-01 Section 3.1.4 states:

"Many ITAAC require verification of 'as-built' SSCs. However, some of these ITAAC will involve measurements and/or testing that can only be conducted at the vendor site due to the configuration of equipment or modules or the nature of the test (e.g., measurements of reactor vessel internals). For these specific items where access to the component for inspection or test is impractical after installation in the plant, the ITAAC closure documentation (e.g., test or inspection record) will be generated at the vendor site and provided to the licensee."

Based on the definition that is currently in the ESBWR DCD and the guidance in NEI 08-01, which is planned to be endorsed by RG 1.215, GEH should supplement their definition of "as-built" to include the clarification as stated above. The basis for this position is that the Tier 1 document is the basis document to which everyone will look and it will become the rule of law via the design certification rule.

GEH Response

GEH will include the additional clarification to the definition of "As-built" in Tier 1 in Revision 6 to address the "as-built" ITAAC that will be performed prior to final installation.

DCD Impact

DCD Tier 1, Section 1.1.1, will be revised to include the additional clarification as described above. See the attached DCD mark-up.

Enclosure 2

MFN 09-495

Response to NRC Request for

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DCD Markups

1. INTRODUCTION

This document provides the Tier 1 material of the ESBWR Design Control Document (DCD).

1.1 DEFINITIONS AND GENERAL PROVISIONS

1.1.1 Definitions

The definitions below apply to terms which may be used in the Design Descriptions and associated Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).

Acceptance Criteria means the performance, physical condition, or analysis results for a structure, system, or component that demonstrates a design commitment is met.

Analysis means a calculation, mathematical computation, or engineering or technical evaluation. Engineering or technical evaluations could include, but are not limited to, comparisons with operating experience or design of similar structures, systems, or components.

As-built means the physical properties of the structure, system or component, following the completion of its installation or construction activities at its final location at the plant site. Determination of physical properties of the as-built structure, system, or component may be based on measurements, inspections, or tests that occur prior to installation provided that subsequent fabrication, handling, installation, and testing do not alter the properties. Many ITAAC require verification of "as-built" structures, systems or components (SSCs). However, some of these ITAAC will involve measurements and/or testing that can only be conducted at the vendor site due to the configuration of equipment or modules or the nature of the test (e.g., measurements of reactor vessel internals). For these specific items where access to the component for inspection or test is impractical after installation in the plant, the ITAAC closure documentation (e.g., test or inspection record) will be generated at the vendor site and provided to the licensee.

ASME Code Report means a report required by the ASME Code and whose content requirements are stipulated by the ASME Code. Each such ASME Code report is final, and when required is certified in accordance with the Code.

Cold shutdown means a *safe shutdown* with the average reactor coolant temperature ≤ 93.3°C (200°F).

Component as used in Tier 1 for reference to ASME components means that subset of equipment that does not include piping.

Containment means the Primary Containment System, unless explicitly stated otherwise.

Design Commitment means that portion of the Design Description that is verified by ITAAC.

Design Description means that portion of the design that is certified.

Division is the designation applied to a given safety-related system or set of components that enables the establishment and maintenance of physical, electrical, and functional independence from other redundant sets of components.

Equipment as used in Tier 1 as related to ASME Code and Seismic Category I requirements means both components and piping.