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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 155 Related to ESBWR Design Certification Application, RAI Number 14.3-124 S01**

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 dated February 22, 2008 (Reference 1), regarding the ESBWR communication system. The associated GEH response to RAI Number 14.3-124 S01 is in Enclosure 1.

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

Sincerely,

James C. Kinsey

James C. Kinsey
Vice President, ESBWR Licensing

D068
NRO

References:

1. MFN 08-171. Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request For Additional Information Letter No. 155 Related To ESBWR Design Certification Application*, February 22, 2008.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 155 Related to ESBWR Design Certification Application, Communication System (COL Item), RAI Number 14.3-124 S01.

cc:	AE Cubbage	USNRC (with enclosure)
	GB Stramback	GEH/San Jose (with enclosure)
	RE Brown	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	eDRF	0000-0083-2703

Enclosure 1

MFN 08-325

Response to Portion of NRC Request for Additional Information Letter No. 155 Related to ESBWR Design Certification Application

Communication System (COL Item)

RAI Number 14.3-124 S01

NRC RAI 14.3-124 S01

NRC Summary:

Functional arrangement of the communication system.

NRC Full Text:

In MFN 07-164, the applicant committed to providing an ITAAC in DCD Tier 1, Section 2.13.7, Revision 4 to ensure that the installation and functionality of the Communications System is in accordance with its final design. The lone ITAAC in Section 2.13.7 states "The functional arrangement of the Communication System is as described in Section 2.13.7." Section 2.13.7 does not state "a functional arrangement", it also states "some" elements are site specific. The applicant is requested to identify if a functional arrangement can't be identified at this time than a process which will identify it be specified or strictly identify it as a COL item.

GEH Response

Per teleconference on February 28, 2008 with the NRC, GEH agreed to delete DCD Tier 1, Subsection 2.13.7 and Table 2.13.7-1. DCD Tier 2, Subsections 9.5.2.2 and 9.5.2.5 will be revised to clarify the COL Information.

DCD Impact

DCD Tier 1, Section 2.13.7 and Tier 2, Sections 9.5.2.2 and 9.5.2.5 will be revised as noted in the attached markup.

2.13.7 Communication System

Design Description

~~The Communication Systems are classified as nonsafety related. The failure of any communications system does not adversely affect safe shutdown capability.~~

~~The Communications System may include a telephone system, a power-actuated paging facility, a sound-powered telephone system, and an in-plant radio system. Some elements of the system (such as the off-site security radio system, crisis management radio system, and fire brigade system) are site-specific.~~ No ITAAC are required for this system

Inspections, Tests, Analyses and Acceptance Criteria

~~Table 2.13.7-1 provides a definition of the inspections, tests, and/or analyses, together with associated acceptance criteria for the Communication System.~~ No ITAAC are required for this system.

Table 2.13.7-1

~~ITAAC For The Communication System~~ (Deleted)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. ~~The functional arrangement of the Communication System is as described in Section 2.13.7.~~Deleted	~~Inspections of the as-built systems will be conducted.~~Deleted	~~Inspection report(s) demonstrate that the as-built communication system is as described in Section 2.13.7.~~Deleted

The output/feedback monitoring system monitors the output of the remote broadcast speakers and retransmits the output back to the monitoring speaker when the message storage device is initiated or to the sound level meter when the microphone is activated. The monitoring speaker and sound level meter are located in the MCR.

Power for this system is supplied from a nonsafety-related bus backed from standby on site AC power supply system and backed by the station batteries.

Emergency Communication Systems

Normal and emergency offsite communications are provided by public telephone lines, the private utility network connected to the PABX and radio systems.

Emergency telephones are color-coded to distinguish them from normal telephones and include, but are not limited to, the following:

- Emergency Notification System (ENS) - Provides a communications link with the Nuclear Regulatory Commission (NRC) in accordance with IE Bulletin 80-15. ~~See Subsection 9.5.2.5.1~~ (9.5.2.5-1-A);
- Health Physics Network (HPN) - Provides a communications link with the NRC health physics personnel (9.5.2.5-3-A~~;~~);
- Ringdown Phone System - Provides a communications link with local and state agencies (9.5.2.5-4-A);
- Crisis Management Radio System – Provides communication capability in accordance with the intent of NUREG-0654 (9.5.2.5-3-A);
- Fire Brigade Radio System - Provides communication capability and consists of a base unit, mobile units, and portable units in accordance with BTP SPLB 9.5-1, Position C.5.g(4) (9.5.2.5-5-A); and
- Transmission System Operator Communication Link (~~See Subsection~~ 9.5.2.5~~.~~-2-A).

9.5.2.3 Safety Evaluation

The communication system is not safety-related and is classified as nonsafety-related. The failure of any communications system does not adversely affect safe shutdown capability. It is not necessary for plant personnel in safety-related areas of the plant to communicate with the MCR in order to achieve safe shutdown of the plant.

Diverse nonsafety-related power supplies connected to the plant standby generators power the PA/PL telephone, PABX and plant radio systems. Failure of any or all of its components does not affect any safety-related equipment.

9.5.2.4 Inspection and Testing Requirements

The communications system is preoperational tested. The systems described above are conventional and have a history of successful operation at similar plants. These systems are used and maintained routinely to ensure their availability.

The power sources for the PA/PL telephone system and the PABX are tested separately during the preoperational and startup test program. Measurements or tests required to identify long-term deterioration are performed on a periodic basis.

9.5.2.5 COL Information

9.5.2.5-1-A ~~Offsite Interfaces~~ Emergency Notification System

The COL applicant will describe the Emergency Notification System provisions required by 10 CFR 50.47(b)(6) and will address recommendations described in BL-80-15.

9.5.2.5-2-A Grid Transmission Operator

The COL applicant will describe the voice communication link availability with the grid transmission operator.

9.5.2.5-3-A Offsite Interfaces (1)

The COL applicant will describe the means of communication between the control room, TSC, EOF, State and local emergency operation centers and radiological field personnel in accordance with NUREG – 0696 and NUREG – 0654.

9.5.2.5-4-A Offsite Interfaces (2)

The COL applicant will describe the communication methods from the control room, TSC, and EOF to NRC head quarters including establishment of Emergency Response Data Systems (ERDS) in accordance with NUREG – 0696.

9.5.2.5-5-A Fire Brigade Radio System

The COL applicant will describe the Fire Brigade Radio System.

9.5.2.6 References

9.5.2-1 IEEE Standard 281, "IEEE Standard Service Conditions for Power System Communication Equipment," (see Table 1.9-22).

9.5.2-2 EPRI Report NP 6559, "Voice Communication System Compatible with Respiratory Protection".

9.5.2-3 10 CFR 73 Section 55(e) and (f), "Physical Protection of Plants and Material".

9.5.2-4 10 CFR 50, Appendix E, IV.E.9, ERF Communication System".

9.5.2-5 NRC Information Notice 86-097, "Emergency Communication Systems".

9.5.2-6 NRC Information Notice 87-058, "Continuous Communication Following Emergency Notification".

9.5.2-7 NRC IE Circular No.80-09, "Problems with Plant Internal Communication Systems".

9.5.2-8 NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plan".

9.5.2-9 IE Bulletin 80-15, "Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power." June 18, 1980.