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MFN 07-174
Supplement 2

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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. 75 Related to ESBWR Design Certification Application – Environmental Qualification of Safety-Related Mechanical and Electrical Equipment - RAI Number 3.11-1 S01**

Enclosure 1 contains GEH's response to the subject NRC RAI transmitted via email on May 7, 2007. GE's original response was provided in the Reference 1 letter.

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

Sincerely,

Kathy Sedney for

James C. Kinsey
Vice President, ESBWR Licensing

D068
NRO

Reference:

1. MFN 07-174, Letter from James C. Kinsey to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 75 Related to ESBWR Design Certification Application - Environmental Qualification of Safety-Related Mechanical and Electrical Equipment - RAI Numbers 3.11-1 through 3.11-5*, dated March 28, 2007

Enclosure:

1. MFN 07-174, Supplement 2 - Response to Portion of NRC Request for Additional Information Letter No. 75 Related to ESBWR Design Certification Application – Environmental Qualification of Safety-Related Mechanical and Electrical Equipment - RAI Number 3.11-1 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	0000-0073-5324

Enclosure 1

MFN 07-174, Supplement 2

Response to Portion of NRC Request for

Additional Information Letter No. 75

Related to ESBWR Design Certification Application

Environmental Qualification of

Safety-Related Mechanical and Electrical Equipment

RAI Number 3.11-1 S011

NRC RAI 3.11-1

DCD, Tier 2, Revision 1, Section 3.11.2.2 states that safety-related mechanical equipment located in a harsh environment are qualified by analysis of materials data, which are generally based on test and operating experience. Provide examples of the environmental qualification methods and standards applied to mechanical equipment (including pumps,power-operated valves, safety-related valves, and check valves) located in harsh environments. Identify the nonmetallic subcomponents, applicable environmental conditions, required operating life, capabilities of the nonmetallic subcomponents, and basis for the environmental qualification of mechanical equipment located in a harsh environment. Discuss the surveillance and maintenance program to be developed for mechanical equipment located in a harsh environment to ensure functionality during their design life.

GE Response

GE EQ program is based on the methodology/guidelines provided in NEDE-24326-1-P (Class III, January 1983); "GENERAL ELECTRIC ENVIRONMENTAL QUALIFICATION PROGRAM" which is a Licensing Topical Report (LTR) based on interpretation of the NUREG-0588, Cat. I. requirements.

Please note that the GE EQ program is predicated on test, analysis or test + analysis, GE does not use operating experience (See response to NRC RAI 3.10-3 S01).

Surveillance and maintenance are addressed in respective equipment Installation Operation Manual (IOM), based on EQ life of components. The selection of the specific equipment is currently not finalized, however, pumps will be excluded since the system employs a passive design to enhance safety. If a electro-pneumatic actuator assembly is chosen for the power operated valves, then a surveillance and maintenance program will be employed that will consist of periodically replacing non-metallic parts and lubricants. Recommended replacement intervals are included in the respective IOM.

DCD Impact

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

NRC RAI 3.11-1 S01

RAI 3.11-1 S01 Comment on response to RAI 3.11-1, 3.11-2, and 3.11-3 from MFN 07-174:

GE has referenced NEDE-24326-1-P (1983) in its reply to these RAIs. However, GE has not indicated any acceptance from the NRC. Has this report been accepted by the NRC for a generic implementation? If so, were there any restrictions imposed by the NRC for its implementations? Please provide detailed information. Also, GE should indicate in the DCD that the COL applicant will need to "fully describe" equipment qualification program per SECY-05-197 and regulatory Guide 1.206 in its submittal.

GEH Response

NEDE-24326-1-P was used for the development of the DCD for ABWR. NUREG-1503 Subsection 3.11.2 provides a discussion of the qualification methodology in NEDE-24326-1-P and its conformance with 10 CFR 50.49. GE, in the development of the ESBWR utilized the conclusions of NUREG-1503 and developed DCD Tier 2, Section 3.11 based upon the DCD for ABWR.

Refer to RAI 3.11-4 S01 for incorporation of SECY-05-197 and RG 1.206.

DCD Impact

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