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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. 124 Related to ESBWR Design
Certification Application - Auxiliary Systems - RAI Number
9.3-41**

Enclosure 1 contains GEH's response to the subject RAI transmitted via
Reference 1.

Should you have any questions about the information provided here, please
contact me.

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

D068
NRO

Reference:

1. MFN 08-029, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 124 Related to the ESBWR Design Certification Application*, January 14, 2008.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 124 Related to ESBWR Design Certification Application - Auxiliary Systems - RAI Number 9.3-41

cc: AE Cabbage USNRC (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
DH Hinds GEH/Wilmington (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
eDRF 0000-0080-1820

Enclosure 1

MFN 08-106

Response to Portion of NRC Request for

Additional Information Letter No. 124

Related to ESBWR Design Certification Application

Auxiliary Systems

RAI Number 9.3- 41

NRC RAI 9.3-41

In DCD, Revision 4, GEH redesigns the instrument air system (IAS) and service air system (SAS) configurations. In DCD, Revision 3, each system had its own air compressors, SAS provided a backup air supply to the IAS via a cross-tie between the distribution headers of the two systems. The cross-tie at the IAS distribution header was located upstream of the air filter/dryer units. In DCD, Revision 4, IAS does not have its own compressor, instead, the IAS makes use of the SAS compressors and receives compressed air from the SAS via a line branched off the SAS distribution header. Compressed air from the SAS passes through ISA air filtering and drying units, and air receivers before being distributed to the instrument air piping system. A cross-tie between the distribution headers of the SAS and IAS is provided to bypass the IAS air filtering and drying units and the air receivers. However, GEH has not addressed the effects of the bypass of lower quality/contaminated SAS air on instrument and controls and pneumatic components. Provide detailed discussion to demonstrate how failures (resulting from the bypass of lower quality/contaminated SAS) of the instrument and controls and pneumatic components will be prevented.

GEH Response

Any of the compressors is capable of meeting 100% demand of the Instrument air system and each of the dryer trains is sized for 100% of the instrument air system demand. If the operating dryer train were to fail, the other dryer train would be placed in service. In the unlikely event that both dryer trains failed at the same time, the bypass line is capable of supplying service air directly to the Instrument Air header. The quality of the air from the Service Air compressors is oil free with particles less than 10 microns in size (ANSI/ISA 7.0.01 – 1996 defines instrument quality air as having a maximum 40 micron particulate size.). Moisture content is monitored by the continuous dew point monitor that will alarm in the control room on high moisture content in the air dryer outlet. The bypass line is meant to be an emergency backup supply used only when both dryer trains are not available. The Instrument Air system is tested periodically in accordance with ISA 7.0.01 to assure the quality of the air provided.

DCD Impact

None