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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 81 Related to ESBWR Design Certification Application – Turbine Main Steam System – RAI Number 14.3-99**

Enclosure 1 contains GE's response to the subject NRC RAI transmitted via the Reference 1 letter.

If you have any questions or require additional information regarding the information provided here, please contact me.

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

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Reference:

1. MFN 06-462, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 81 Related to ESBWR Design Certification Application,* November 14, 2006

Enclosure:

1. MFN 07-003 – Response to Portion of NRC Request for Additional Information Letter No. 81 Related to ESBWR Design Certification Application – Turbine Main Steam System – RAI Number 14.3-99

cc: AE Cubbage USNRC (with enclosures)
GB Stramback GE/San Jose (with enclosures)
eDRF 0000-0062-7530

Enclosure 1

MFN 07-003

Response to Portion of NRC Request for

Additional Information Letter No. 81

Related to ESBWR Design Certification Application

Turbine Main Steam System

RAI Number 14.3-99

NRC RAI 14.3-99

Section 2.16.8 Turbine Building: No ITAACs have been specified for the structure as safety related portion of the Main Steam resides in the Turbine building. Please provide the ITAACs for the building structure protecting the Main Steam System.

GE Response

The Main Steam system transitions from safety-related (Safety Class 2) to nonsafety-related (N) at the seismic interface restraint in the Reactor Building as indicated in Tier 2, Revision 2, Chapter 3, Table 3.2-1 (B21 and N11) and Table 3.2-2. As such, the portion of the Main Steam system residing in the Turbine Building is nonsafety-related. There are, however, safety-related sensors mounted near or on the turbine stop valves, turbine control valves, turbine bypass valves, and vacuum sensors near the condenser that interface with the reactor protection system.

Additional design description (DD) and an ITAAC will be added to Tier 1, Subsection 2.16.8 per the attached change.

2.16.8 Turbine Building

Design Description

The Turbine Building (TB) encloses the turbine-generator, main condenser, condensate and feedwater systems, condensate purification system, offgas system, turbine-generator support systems and bridge crane. The TB is a Seismic Category II nonsafety-related structure, and thus, it is constructed to prevent failure of structures, systems and components that are not seismic Category I from impairing the ability of nearby safety-related SSCs to perform their safety-related functions. The building is partially embedded. Shielding is provided for the turbine on the operating deck.

Inspections, Tests, Analyses and Acceptance Criteria

Table 2.16.8-1 provides a definition of the inspections, test and/or analyses, together with associated acceptance criteria, which will be undertaken for the Turbine Building.

Table 2.16.8-1

ITAAC for The Turbine Building

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The Turbine Building is a Seismic Category II structure.	1. Inspections of the as-built Turbine Building design documentation will be performed.	1. The as-built Turbine Building is built as a Seismic Category II structure.