May 9, 2006

Mr. David H. Hinds, Manager, ESBWR
General Electric Company
P.O. Box 780, M/C L60
Wilmington, NC 28402-0780

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 27 RELATED TO ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Hinds:

By letter dated August 24, 2005, General Electric Company (GE) submitted an application for final design approval and standard design certification of the economic simplified boiling water reactor (ESBWR) standard plant design pursuant to 10 CFR Part 52. The Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed design.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter. Question 2.5-7 concerns slope stability as discussed in Section 2.5 of the ESBWR design control document (DCD). Questions 3.3-1 through 3 and 3.5-16 concern designing for wind and tornado loadings as discussed in Sections 3.3 and 3.5 of the ESBWR DCD. Question 2.5-7 was sent to you via electronic mail on April 7, 2006. Questions 3.3-1 through 3 were sent to you via electronic mail on March 23, 2006. Question 3.5-16 was sent to you via electronic mail on April 24, 2006. You did not request a telecon on these questions. You agreed to respond to question 2.5-7 by May 19, 2006, and to questions 3.3-1 through 3 and 3.5-16 by June 9, 2006.

If you have any questions or comments concerning this matter, you may contact me at (301) 415-2863 or lwr@nrc.gov or you may contact Amy Cubbage at (301) 415-2875 or aec@nrc.gov.

Sincerely,

/RA/

Lawrence Rossbach, Project Manager
ESBWR/ABWR Projects Branch
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 52-010

Enclosure: As stated

cc: See next page

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cc: See next page
ACCESSION NO. ML061290029

OFFICE	NESB/PM	NESB/BC(A)
NAME	LRossbach	ACubbage
DATE	05/09/2006	05/09/2006

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Distribution for DCD RAI Letter No. 27 dated May 9, 2006

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

ESBWR DESIGN CONTROL DOCUMENT (DCD) SECTION 2.5, "GEOLOGY, SEISMOLOGY, AND GEOTECHNICAL ENGINEERING"

RAI Number	Reviewer	Question Summary	Full Text
2.5-7	Munson C	Clarify slope stability.	DCD Tier 2, Table 2.0-1 provides an envelope of ESBWR reference plant site design parameters, considerations and/or limits. For Subsection 2.5.5, Table 2.0-1 specifies that the ESBWR design "assumes stable slopes." Provide a more complete description of the conditions (static and dynamic) under which stable slopes are required.

ESBWR DCD SECTION 3.3, "WIND AND TORNADO LOADINGS"

RAI Number	Reviewer	Question Summary	Full Text
3.3-1	Jeng D Cruz-Perez Z	Confirm that procedures utilized to transform the wind velocity into an effective pressure applied to structures provided in the reference is consistent with SRP Section 3.3.1 or identify and justify deviations from the SRP section.	DCD Tier 2, Section 3.3.1, states that the procedures utilized to transform the wind velocity into an effective pressure applied to structures and parts, and portions of structures, are as delineated in Reference 3.3-1. Reference 3.3-1 lists ASCE Standard 7-2002, "Minimum Design Loads for Buildings and Other Structures," Committee A.58.1, American National Standards Institute. Since the above referenced standard is still under staff review, confirm that the procedures utilized to transform the wind velocity into an effective pressure applied to structures provided in the reference is consistent with those stipulated in Reference 2 of SRP Section 3.3.1 (Rev. 2, 1981), otherwise, identify and justify deviations from the SRP section.

RAI Number	Reviewer	Question Summary	Full Text
3.3-2	Jeng D Cruz-Perez Z	Provide explicit rotational wind speed information in DCD Tier 2, Table 2.0-1, or discuss GE's basis for omitting the parameter in the table.	DCD Tier 2, Section 3.3.2.1 states that the design basis tornado and applicable missiles are described in Subsections 2.3.1 and 2.3.2, and Table 2.0-1. Subsection 2.3.1 of Table 2.0-1 provides parameters defining a design basis tornado for the ESBWR excluding the maximum rotational speed of the same. This is not consistent with Table I of Regulatory Guide 1.76, "Design Basis Tornado for Nuclear Power Plants," which lists rotational speed as one of the parameters defining a design basis tornado. Explicitly provide rotational wind speed information in DCD Tier 2, Table 2.0-1, or discuss GE's basis for omitting the parameter in the Table.
3.3-3	Jeng D Cruz-Perez Z	Confirm that plant SSC's not designed for tornado loads are all assumed to fail under tornado loads, and are qualified by appropriate tornado-related II/I interaction analyses for the effect of their failure on Seismic Category I SSC's.	DCD Tier 2, Section 3.3.3.2 states that the COL applicant shall ensure that the remainder of plant structures, systems, and components (SSC's) not designed for tornado loads are analyzed for the site-specific loadings to ensure that their modes of failure do not affect the ability of the Seismic Category I ESBWR Standard Plant SSC's to perform their intended functions. Since the site-specific loadings cited above exclude tornado loads, confirm that these SSC's were all assumed to fail under the tornado loadings, and appropriate tornado-related II/I interaction analyses were performed for the SSC's to ensure that their modes of failure do not affect the ability of the Seismic Category I ESBWR Standard Plant SSC's to perform their intended functions.

ESBWR DCD SECTION 3.5.3, "Barrier Design Procedures"

RAI Number	Reviewer	Question Summary	Full Text
3.5-16	Jeng D Cruz Perez Z	Provide the definition of "tornado structure."	DCD Tier 2, Subsection 3.5.1.4 states that "an evaluation of nonsafety-related structures, systems, and components (not housed in a tornado structure) whose failure due to a design basis tornado missile could adversely impact the safety function of safety-related systems and components," shall be provided to the NRC by the applicant referencing the ESBWR design. It is not clear to the staff what "tornado structure" means. The applicant is asked to provide the definition of "tornado structure."

cc:

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