

April 24, 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. 21 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. This RAI concerns the nuclear design, specifically the results of the TGBLA analysis. This question was sent to you via electronic mail on March 27, 2006. You agreed that a telecon was not needed to discuss this question, and you agreed to respond to this RAI by April 28, 2006.

If you have any questions or comments concerning this matter, you may contact me at (301) 415-2875 or [aec@nrc.gov](mailto:aec@nrc.gov) or you may contact Larry Rossbach at (301) 415-2863 or [lwr@nrc.gov](mailto:lwr@nrc.gov).

Sincerely,

*/RA/*

Amy E. Cabbage, Senior 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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ACCESSION NO. ML061080464

OFFICE	NESB/PM	NESB/BC
NAME	ACabbage	LDudes
DATE	04/20/2006	04/21/2006

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Distribution for DCD RAI Letter No. 21 dated April 24, 2006

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ESBWR

cc:

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

Mr. George B. Stramback  
Manager, Regulatory Services  
GE Nuclear Energy  
1989 Little Orchard Street, M/C 747  
San Jose, CA 95125

Mr. David Lochbaum, Nuclear Safety  
Engineer  
Union of Concerned Scientists  
1707 H Street, NW., Suite 600  
Washington, DC 20006-3919

Mr. Paul Gunter  
Nuclear Information & Resource Service  
1424 16th Street, NW, Suite 404  
Washington, DC 20036

Mr. James Riccio  
Greenpeace  
702 H Street, Suite 300  
Washington, DC 20001

Mr. Adrian Heymer  
Nuclear Energy Institute  
Suite 400  
1776 I Street, NW  
Washington, DC 20006-3708

Mr. Paul Leventhal  
Nuclear Control Institute  
1000 Connecticut Avenue, NW  
Suite 410  
Washington, DC 20036

Dr. Jack W. Roe  
Nuclear Energy Institute  
1776 I Street, NW  
Washington, DC 20006-3708

Mr. Ron Simard  
6170 Masters Club Drive  
Suwanne, GA 30024

Mr. Brendan Hoffman  
Research Associate on Nuclear Energy  
and Environmental Program  
215 Pennsylvania Avenue, SE  
Washington, DC 20003

Mr. Tom Clements  
6703 Gude Avenue  
Takoma Park, MD 20912

Ms. Patricia Campbell  
Morgan, Lewis & Bockius, LLP  
1111 Pennsylvania Avenue, NW  
Washington, DC 20004

Mr. Glenn H. Archinoff  
AECL Technologies  
481 North Frederick Avenue  
Suite 405  
Gaithersburg, MD. 20877

Mr. Gary Wright, Director  
Division of Nuclear Facility Safety  
Illinois Emergency Management Agency  
1035 Outer Park Drive  
Springfield, IL 62704

Mr. Charles Brinkman  
Westinghouse Electric Co.  
Washington Operations  
12300 Twinbrook Pkwy., Suite 330  
Rockville, MD 20852

Mr. Ronald P. Vijuk  
Manager of Passive Plant Engineering  
AP1000 Project  
Westinghouse Electric Company  
P. O. Box 355  
Pittsburgh, PA 15230-0355

Mr. Ed Wallace, General Manager  
Projects  
PBMR Pty LTD  
PO Box 9396  
Centurion 0046  
Republic of South Africa

Mr. Russell Bell  
Nuclear Energy Institute  
Suite 400  
1776 I Street, NW  
Washington, DC 20006-3708

Mr. Jerald S. Holm  
Framatome ANP, Inc.  
3315 Old Forest Road  
P.O. Box 10935  
Lynchburg, VA 24506-0935

Ms. Kathryn Sutton, Esq.  
Morgan, Lewis & Bockius, LLP  
1111 Pennsylvania Avenue, NW  
Washington, DC 20004

Mr. Robert E. Sweeney  
IBEX ESI  
4641 Montgomery Avenue  
Suite 350  
Bethesda, MD 20814

Mr. Eugene S. Grecheck  
Vice President, Nuclear Support Services  
Dominion Energy, Inc.  
5000 Dominion Blvd.  
Glen Allen, VA 23060

Mr. George A. Zinke  
Manager, Project Management  
Nuclear Business Development  
Entergy Nuclear, M-ECH-683  
1340 Echelon Parkway  
Jackson, MS 39213

E-Mail:

tom.miller@hq.doe.gov or  
tom.miller@nuclear.energy.gov  
mwetterhahn@winston.com  
whorin@winston.com  
gcesare@enercon.com  
jerald.holm@framatome-anp.com  
eddie.grant@exeloncorp.com  
joseph\_hegner@dom.com  
steven.hucik@ge.com  
david.hinds@ge.com  
chris.maslak@ge.com  
james1beard@ge.com  
louis.quintana@gene.ge.com  
wayne.massie@ge.com  
kathy.sedney@ge.com  
george.stramback@gene.ge.com

**Request for Additional Information (RAI)**  
**ESBWR Design Control Document (DCD) Chapter 4.3**

<b>RAI Number</b>	<b>Reviewer</b>	<b>Question Summary</b>	<b>Full Text</b>
4.3-1	Attard A	Provide additional information to facilitate the staff's review of the uncertainty associated with determining nuclear parameters.	The staff requires additional information to review the uncertainty associated with determining nuclear parameters. Provide the results of the TGBLA calculation of cross sections, infinite eigenvalues, and lattice parameters. Specifically, provide the results of the TGBLA analysis which gives the infinite eigenvalue predicted at each depletion step for each void condition (0, 40, 70 and 90%). Also, provide void branch cases that were performed in order to predict void coefficient, i.e. infinite eigenvalues calculated at 0, 40, and 70% voids for each void history; this is not required for each depletion point, only approximately beginning of life (BOL), 1/3 depleted, 2/3 depleted, and end of life (EOL).

Enclosure