

January 11, 2008

Mr. Robert E. Brown
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy Americas, LLC
3901 Castle Hayne Road MC A-45
Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 140 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

By letter dated August 24, 2005, GE-Hitachi Nuclear Energy Americas, LLC (GEH) 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.

To support the review schedule, you are requested to provide the requested additional information within 45 days of the date of this letter.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3179 or ixb3@nrc.gov or you may contact Amy Cubbage at (301) 415-2875 or aec@nrc.gov.

Sincerely,

/RA/

Ilka Berrios, Project Manager
ESBWR/ABWR Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-010

Enclosure:
Request for Additional Information

cc: See next page

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OFFICE	PM:NGE1	PM:NGE1	BC:NGE1
NAME	IBerrios	ACubbage	MShuaibi
DATE	01/10/2008	01/10/2008	01/11/2008

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ESBWR DESIGN CERTIFICATION APPLICATION

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

RAI Number	Reviewer	Question Summary	Full Text
8.3-52 S04	Rhow S	More information is needed for the review of the battery capacity associated with the UPS.	<p>The information that GEH provided in Table 8.3-3, "250 V DC Safety-Related Battery Load Requirements," is not enough to review the battery capacity associated with the UPS. Provide additional information for the following related to the UPS:</p> <ul style="list-style-type: none"> A. Battery capacity in unit of ampere-hour (Ah) including factors (e.g., aging factor, extra margin) B. Charger specification including the continuous current, float voltage, and equalizing charge voltage C. Rectifier specification D. Inverter specification including voltage regulation, frequency variation, and total harmonic distortion (THD) E. Regulating transformer specification including capacity and voltage regulation F. UPS protective scheme against faults (e.g., overcurrent, fault current, undervoltage, underfrequency).
9.1-27 S01	Diaz-Castillo Y	Material compatibility of new and spent fuel pool materials.	In your response to RAI 9.1-27, you described the materials to be used in the fabrication of the ESBWR spent fuel racks. However, in DCD Sections 9.1.1.1 and 9.1.2.6, you stated that structural materials used in the fabrication of the fuel storage racks is in accordance with the latest issue of the applicable ASTM specification at the time of equipment order. Please clarify this discrepancy. If you plan to use the materials described in your RAI response, please include this information in Revision 5 of the Design Control Document.
9.3.42	Thomas G	SLCS Applicable GDCs	DCD Tier 2, Section 9.3.5.3, 12th paragraph states: "The overall requirements (Section I) of the GDC are applicable to the system-----." Please change to state "The overall requirements of GDC 2, and 4 are applicable to the system-----."

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9.5-70	Radlinski R	Revise Section 9.5.15 of the DCD	DCD Sections 9.5.1.15.2; 9.5.1.15.3; and 9.5.1.15.4.1 refer to Section 13.1 for a description/discussion of the fire protection program staffing and the fire brigade organization. Section 13.1 of the ESBWR DCD, Revision 4 does not include any description or discussion of the fire protection staffing or fire brigade organization and states that Section 13.1 is the responsibility of the COL applicant. Revise Section 9.5.15 of the DCD to explain that the description of the fire protection program staffing and fire brigade organization is the responsibility of the COL applicant and provide pointers applicable COL items (13.1-1(A), 13.4-1(A) and 9.5.1-10(H) where the COL applicant will address these issues.
9.5-69	Makar G	Diesel generator fuel oil storage and transfer system: Fuel oil quality and corrosion protection.	<p>The diesel fuel oil system is not safety-related and has no safety-related design basis. However, it is identified as a system subject to regulatory treatment (regulatory treatment of non-safety systems, or RTNSS) with associated availability control requirements. Therefore, the staff requests the following additional information to complete its review.</p> <ul style="list-style-type: none"> A. Section 9.5.4.2 of the DCD states the fuel oil meets the requirements of ASTM D975 ("Standard Specification for Diesel Fuel Oils"). Since this standard is revised periodically and covers several grades of fuel, please identify the version of the standard and grade(s) of fuel in the DCD. If the intent is to use the most recent revision of the standard and only certain grades of fuel (e.g., those recommended by the manufacturer), please clarify this in the DCD. B. Section 9.5.4.4 of the DCD states that periodic testing and inspection are performed at "regular intervals." Describe the tests performed, including test method, frequency, acceptance criteria, and corrective actions. Discuss your plans to include this information in the DCD. C. For testing of both new fuel and stored fuel, explain the basis for any differences between the proposed testing program and the positions in Regulatory Guide 1.137. D. COL item 9.5. 4-2-A addresses the material and corrosion protection for underground piping portion of the diesel fuel oil transfer system. Since the

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			DCD does not state whether the fuel storage tanks can be located underground, discuss why corrosion protection for storage tanks was not included in this COL item. If any portion of the tanks can be located underground, please revise the COL Item 9.5.4-2-A to include the fuel storage tanks.

DC GE - ESBWR Mailing List

(Revised 1/3/08)

cc:

Ms. Michele Boyd
Legislative Director
Energy Program
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

W. Craig Conklin, Director
Chemical and Nuclear Preparedness &
Protection Division (CNPPD)
Office of Infrastructure Protection
Department of Homeland Security
Washington, DC 20528

Mr. Marvin Fertel
Senior Vice President
and Chief Nuclear Officer
Nuclear Energy Institute
1776 I Street, NW
Suite 400
Washington, DC 20006-3708

Mr. Ray Ganthner
AREVA, Framatome ANP, Inc.
3315 Old Forest Road
P.O. Box 10935
Lynchburg, VA 24506-0935

Vanessa E. Quinn, Acting Director
Technological Hazards Division
National Preparedness Directorate
Federal Emergency Management Agency
500 C Street, NW
Washington, DC 20472

Email

APH@NEI.org (Adrian Heymer)
awc@nei.org (Anne W. Cottingham)
bennettS2@bv.com (Steve A. Bennett)
bevans@enercon.com (Bob Evans)
bob.brown@ge.com (Robert E. Brown)
BrinkmCB@westinghouse.com (Charles Brinkman)
chris.maslak@ge.com (Chris Maslak)
CumminWE@Westinghouse.com (Edward W. Cummins)
cwaltman@roe.com (C. Waltman)
dan1.williamson@ge.com (Dan Williamson)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
David.piepmeyer@ge.com (David Piepmeyer)
dlochbaum@UCSUSA.org (David Lochbaum)
don.lewis@ge.com (Don Lewis)
erg-xl@cox.net (Eddie R. Grant)
Eugene_Grecheck@dom.com (Eugene S. Grecheck)
frankq@hursttech.com (Frank Quinn)
Frostie.white@ge.com (Frostie White)
gcesare@enercon.com (Guy Cesare)
george.honma@ge.com (George Honma)
george.stramback@gene.ge.com (George Stramback)
george.wadkins@ge.com (George Wadkins)
GovePA@BV.com (Patrick Gove)
greshaja@westinghouse.com (James Gresham)
gzinke@entergy.com (George Alan Zinke)
hickste@earthlink.net (Thomas Hicks)
james.beard@gene.ge.com (James Beard)
jcurtiss@winston.com (Jim Curtiss)
jgutierrez@morganlewis.com (Jay M. Gutierrez)
jim.kinsey@ge.com (James Kinsey)
jim.riccio@wdc.greenpeace.org (James Riccio)
JJNesrsta@cpsenergy.com (James J. Nesrsta)
joel.Friday@ge.com (Joel Friday)
john.o'neil@pillsburylaw.com (John O'Neil)
john.sorensen@ge.com (John Sorensen)
Joseph.savage@ge.com (Joseph Savage)
Joseph_Hegner@dom.com (Joseph Hegner)
junichi_uchiyama@mnes-us.com (Junichi Uchiyama)
kathy.sedney@ge.com (Kathy Sedney)
kenneth.ainger@exeloncorp.com (Kenneth Ainger)
KSutton@morganlewis.com (Kathryn M. Sutton)
kurt.schaefer@ge.com (Kurt Schaefer)
kwaugh@impact-net.org (Kenneth O. Waugh)
lou.lanese@ge.com (Lou Lanese)
MaddenG@BV.com (George Madden)
Margaret.Bennet@dom.com (Margaret Bennet)

maria.webb@pillsburylaw.com (Maria Webb)
mark.beaumont@wsms.com (Mark Beaumont)
Marvin.Smith@dom.com (Marvin L. Smith)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
media@nei.org (Scott Peterson)
mgiles@entergy.com (M. Giles)
mike_moran@fpl.com (Mike Moran)
mwetterhahn@winston.com (M. Wetterhahn)
nirsnet@nirs.org (Michael Mariotte)
PAC2@nrc.gov (Peter Cochran)
pareez.golub@ge.com (Pareez Golub)
Pat.Woodfin@ge.com (Pat Woodfin)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gaukler@pillsburylaw.com (Paul Gaukler)
Paul@beyondnuclear.org (Paul Gunter)
peter.jordan@ge.com (Peter Jordan)
phinnen@entergy.com (Paul Hinnenkamp)
pshastings@duke-energy.com (Peter Hastings)
RJB@NEI.org (Russell Bell)
RKTemple@cpsenergy.com (R.K. Temple)
roberta.swain@ge.com (Roberta Swain)
ronald.hagen@eia.doe.gov (Ronald Hagen)
sandra.sloan@areva.com (Sandra Sloan)
SauerB@BV.com (Robert C. Sauer)
sfrantz@morganlewis.com (Stephen P. Frantz)
sharon.lyons@ge.com
steven.hucik@ge.com (Steven Hucik)
steven.stark@ge.com (Steven Stark)
tom.miller@hq.doe.gov (Tom Miller)
trsmith@winston.com (Tyson Smith)
VictorB@bv.com (Bill Victor)
waraksre@westinghouse.com (Rosemarie E. Waraks)
wayne.marquino@ge.com (Wayne Marquino)
whorin@winston.com (W. Horin)