

May 22, 2007

Mr. Robert E. Brown
General Manager, Regulatory Affairs
General Electric Company
3901 Castle Hayne Rd MC A-45
Wilmington NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 102 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

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 Chapter 5 of the ESBWR Design Control Document.

Chapter 5: 5.2-62

To support the review schedule, you are requested to respond to this RAI by July 23, 2007.

If you have any questions or comments concerning this matter, please contact Shawn Williams at (301) 415-3207 or saw8@nrc.gov, or Amy Cabbage at (301) 415-2875 or aec@nrc.gov.

Sincerely,

/RA/

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

Docket No. 52-010

Enclosure: As stated

cc: See next page

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ACCESSION NO. ML071410310

OFFICE	NGE1/PM	SIB2/BC	OGC/NLO	NGE1/BC
NAME	SWilliams	KGruss	RWeisman	MShuaibi-TKevern for:
DATE	05/22/2007	05/22/2007	05/22/2007	05/22/2007

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**Requests for Additional Information (RAIs)
 ESBWR Design Control Document (DCD), Revision 3
 Chapter 5. Reactor Coolant System and Connected Systems**

RAI Number	Reviewer	Question Summary	Full Text
5.2-62	Davis R	Revise the DCD to (1) specify the inspection methods that are practical to use for ISI, and (2) add COL action items to provide plans to incorporate, during design and construction, access to piping systems that enable nondestructive examinations NDE	<p>This RAI supercedes RAIs 6.6-1, 6.6-2, 6.6-3, 6.6-4, 5.2-51, 5.2-53, 5.2-54 5.2-57, and 5.2-58. The staff requests that the applicant modify the DCD (1) to specify the inspection methods that are practical to use for inservice inspection (ISI) of welds in ASME Boiler and Pressure Vessel (B&PV) Code Class 1 and 2 austenitic and dissimilar metal welds, and (2) to add COL action items to Sections 5.2.4 and 6.6 for COL applicants to ensure that a COL applicant referencing the ESBWR will provide a detailed description of its plans to incorporate, during design and construction, access to piping systems to enable nondestructive examinations (NDE) of such welds during ISI.</p> <p>By way of background, the staff understands that materials selected for use in ESBWR ASME B&PV Code Class 1 and 2 austenitic and dissimilar metal welds are not expected to encounter stress corrosion cracking or appreciable amounts of other forms of degradation based on currently available information. However, the staff notes that stress corrosion cracking was not expected in previously built PWRs and BWRs based on information that was available at the time of their licensing and construction. Accordingly, the staff considers that the design of components should include provisions to enable NDE to detect future component degradation, such as stress corrosion cracking. This is a critical attribute of any new reactor design.</p> <p>The ASME B&PV Code, Section XI, as incorporated into 10 CFR 50.55a(g), currently allows for either ultrasonic or radiographic examination of welds in Code Class 1 and 2 piping systems. Please modify the DCD in Tier 1 to state that one or both of these types of examination is practical for ISI of austenitic and dissimilar metal welds. The staff notes that ultrasonic examination has advantages with respect to ALARA considerations, and with this change to the DCD, any design certification rule that might be issued for the ESBWR will preclude the</p>

RAI Number	Reviewer	Question Summary	Full Text
			<p>granting of relief under 10 CFR 50.55a(g)(6) for ISI of such welds. Please confirm that austenitic or dissimilar metal welds in Class 1 and 2 piping systems will be accessible for examination by either ultrasonic or radiographic examination to satisfy § 50.55a(g)(3).</p> <p>In support of these DCD changes, a COL applicant referencing the ESBWR design certification application should inform the staff of how it plans to meet all access requirements during construction and operation as required by 10 CFR 50.55a(g)(3)(i) and (ii). The staff notes that the preservice inspection (PSI) requirements are known at the time a component is ordered, and 10 CFR 50.55a(g) does not contain provisions for consideration of relief requests for impractical examination during the construction phases of the component. The COL action items requested above should reflect these considerations.</p>

cc:

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

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

Dr. Gail H. Marcus
U.S. Department of Energy
Room 5A-143
1000 Independence Avenue, SW
Washington, DC 20585

Winston & Strawn
1400 L. Street, NW - 12th Floor
Washington, DC 20005-3502

Email

APH@NEI.org (Adrian Heymer)
awc@nei.org (Anne W. Cottingham)
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)
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)
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.leatherman@ge.com (John Leatherman)
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@mhi.co.jp (Junichi Uchiyama)
kathy.sedney@ge.com (Kathy Sedney)
KSutton@morganlewis.com (Kathryn M. Sutton)
kurt.schaefer@ge.com (Kurt Schaefer)
lou.lanese@ge.com (Lou Lanese)
lynchs@gao.gov (Sarah Lynch - Meeting Notices Only)
MaddenG@BV.com (George Madden)
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)

mweatherhahn@winston.com (M. Wetterhahn)
mwl@nei.org (Melanie Lyons)
pareez.golub@ge.com (Pareez Golub)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gaukler@pillsburylaw.com (Paul Gaukler)
peter.jordan@ge.com (Peter Jordan)
Petrovb@westinghouse.com (Bojan Petrovic)
PGunter@NIRS.org (Paul Gunter)
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)
seitz@id.doe.gov
sfrantz@morganlewis.com (Stephen P. Frantz)
steven.hucik@ge.com (Steven Hucik)
steven.stark@ge.com (Steven Stark)
tom.miller@hq.doe.gov (Tom Miller)
tom.miller@nuclear.energy.gov (Thomas P. Miller)
trsmith@winston.com (Tyson Smith)
waraksre@westinghouse.com (Rosemarie E. Waraks)
wayne.marquino@ge.com (Wayne Marquino)
whorin@winston.com (W. Horin)