

August 20, 2007

Ms. Andrea Sterdis, Manager  
Licensing and Customer Interface  
Regulatory Affairs and Standardization  
Westinghouse Electric Company  
Nuclear Power Plants  
P.O. Box 355  
Pittsburgh, PA 15230-0355

SUBJECT: RESPONSE TO WESTINGHOUSE ELECTRIC COMPANY AP1000 PIPING  
DESIGN ACCEPTANCE CRITERIA PLAN LETTER OF APRIL 26, 2007

Dear Ms. Sterdis:

This letter is to inform you that the Nuclear Regulatory Commission (NRC) has insufficient information to allow resolution of the piping Design Acceptance Criteria (DAC) or to close Combined Operating License (COL) Information Items 3.6-1, which addresses your pipe break hazard analysis or 3.9.8-2, which allows for NRC audit of design specifications and design reports.

In your letter of April 26, 2007, you summarized the AP1000 piping status and schedule and proposed that the NRC audit the design during the week of August 13, 2007. Prior to submitting the April 26, 2007, letter, Westinghouse Electric Company (Westinghouse), through AP1000 Standard Combined License Technical Report (TR) 13, APP-GW-GLR-013, requested that the NRC conclude that the DAC were resolved and delete the contents of Table 1-2 in the AP1000 Design Control Document (DCD) Introduction, which lists the piping DAC. Table 1-2 outlines 28 different commitments with regard to methodology which the NRC was to verify were met prior to fuel load. Based on our review of TR 13 and the description of design completion provided by your staff during a June 26-27, 2007, meeting, insufficient information is available to amend the DCD to resolve all DAC commitments as requested or to conduct an audit.

During the June 26 through June 27, 2007, meeting, your staff described the status of the 40 of 138 piping design packages you consider to be complete. NRC staff reviewed the stress reports for three of the completed packages, including the packages for the automatic depressurization system stage 4 line, the pressurizer surge line, and main steam line Train A. The NRC staff found the packages to be generally incomplete. Design Reports, as required in Table 1-2, which would serve to demonstrate that the functional and design requirements as stipulated in the design specification are met, were not available. The Design Report needed to address DAC is the version developed to support construction. Based on discussions with Westinghouse during the June 26 through June 27, 2007, meeting, this document was referred to as "Revision 0" of the Design Report. The stress reports that were available were not in an auditable form since they lacked a comprehensive description of the design methodologies and criteria, as well as the design analysis results. In addition, the required piping support design, the thermal stratification analysis, the pipe break hazard analysis, fatigue analysis, and the safety-related valve analysis, all required in Table 1-2, have not been adequately documented

in the reports. Further, the packages had not been revised to reflect the revised, bounding seismic response spectra for soil sites.

As defined in SECY-92-053, DAC are a set of prescribed limits, parameters, procedures, and attributes upon which the NRC relies in making a final safety determination subject only to satisfactory design implementation and verification through the appropriate inspections, tests, analyses, and acceptance criteria (ITAAC). DAC were meant to exist until the design is complete such that it can be verified as part of the ITAAC to demonstrate that the as-built facility conforms to the certified design.

In order to resolve DAC and amend the DCD as requested, Westinghouse will need to complete the design to a point that the commitments described in Table 1-2 are met. At that point, the DCD can be revised as requested. This level of verification is necessary to assure that the final, as-built piping design and analyses can be completed. This level of design is further described in Section C.I.3.12 of Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants," June 2007.

Other options available would be to complete the design to the point required by Table 1-2, at which point a COL applicant would request NRC staff review. This could occur after a COL application (COLA) is submitted or after the COL is issued, but before the plant is constructed. NRC would be able to document resolution of DAC at that point such that it could be used for subsequent COLAs, and ITAAC as written would still be required to review the as-built aspects of the design. Another option would defer resolution of DAC without requiring completion of the design called for in the Table 1-2 commitments such that later NRC review of the completed design would be required.

In addition to piping design, NRC staff discussed the pipe break hazards analysis and component design during the meeting on June 26 through June 27, 2007. Pipe break hazards analysis was a topic in TRs 6 (APP-GW-GLR-021) and 7 (APP-GW-GLR-074). Specifically, in TR 7, Westinghouse stated that the report addresses and documents, on a generic basis, design activities required to complete the COL Information Item in Section 3.6.4.1 of the AP1000 DCD. Westinghouse also stated that a pipe break hazards analysis is part of piping design. The NRC staff noted that numerous areas in TR 7 are incomplete and are deferred to a later stage of design. The pipe break hazards analysis will need to be completed before the DAC and COL Information Item 3.6-1 can be closed.

With regard to component design, based on the discussion during the meeting on June 26 through June 27, 2007, the NRC staff understands that much of the design is complete. After Westinghouse provides the complete list of ASME Class 1, 2, and 3 components with a schedule and status for design specification and reports, the NRC staff will determine when an audit can be conducted to determine whether the component portion of COL Information Item 3.9.8-2 can be closed as requested in the collection of reports that make up TR 11. If all design reports cannot be provided due to the practice of not requiring the design reports until after the procurement process takes place, a request should be made to move the design review of those reports to ITAAC. After successful audit of the existing design and modification of ITAAC

A. Sterdis

- 3 -

to address the design that will be completed later, based on the existence of DAC, COL Information Item 3.9.8-2 could be closed.

Please contact me at (301) 415-1199, if you have any other questions on this issue.

Sincerely,

**/RA/**

David B. Matthews, Director  
Division of New Reactor Licensing  
Office of New Reactors

cc: Project No. 740

A. Sterdis

- 3 -

to address the design that will be completed later, based on the existence of DAC, the COL Information Item could be closed.

Please contact me at (301) 415-1199, if you have any other questions on this issue.

Sincerely,

**/RA/**

David B. Matthews, Director  
Division of New Reactor Licensing  
Office of New Reactors

cc: Project No. 740

Distribution:

PUBLIC

RidsNroDnrl

KWinsberg - OGC

RidsNroDe

RidsNroDeEmb2

RidsNroDnrlNwe2

DJaffe

RidsNroLaKGoldstein

RidsOgcMailCenter

Accession No.: ML072060208

OFFICE	NRO/DNRL/NWE1	NRO/DNRL/NWE2	NRO/DNRL/NWE2	EMB2
NAME	KGoldstein	DJaffe	EMcKenna	JDixon-Herrity
DATE	07/31/07	08/1/07	07/31/07	07/31/07
OFFICE	D:DE	OGC	D:DNRL	
NAME	MMayfield	KWinsberg	DMatthews	
DATE	08/1/07	08/13/07	08/20/07	

**OFFICIAL RECORD COPY**

cc:

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

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

Mr. Barton Z. Cowan, Esquire  
Eckert Seamans Cherin & Mellott, LLC  
600 Grant Street, 44th Floor  
Pittsburgh, PA 15219

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

Mr. Jay M. Gutierrez  
Morgan, Lewis & Bockius, LLP  
1111 Keystone State Avenue, NW  
Washington, DC 20004

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

Ms. Sophie Gutner  
P.O. Box 4646  
Glen Allen, VA 23058

Mr. Ronald Kinney  
South Carolina DHEC  
2600 Bull Street  
Columbia, SC 29201

Ms. Marilyn Kray  
President  
NuStart Energy Development, LLC  
200 Exelon Way, KSA3-N  
Kennett Square, PA 19348

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

Dr. Regis A. Matzie  
Senior Vice President and  
Chief Technology Officer  
Westinghouse Electric Company  
20 International Drive  
Windsor, CT 06095

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

Email

amonroe@scana.com (Amy Monroe)  
APAGLIA@Scana.com (Al Paglia)  
APH@NEI.org (Adrian Heymer)  
awc@nei.org (Anne W. Cottingham)  
bob.brown@ge.com (Robert E. Brown)  
BrinkmCB@westinghouse.com (Charles Brinkman)  
Carellmd@westinghouse.com (Mario D. Carelli)  
chris.maslak@ge.com (Chris Maslak)  
cristina.Ionescu@pgnmail.com (Christina Ionescu)  
crpierce@southernco.com (C.R. Pierce)  
CumminWE@Westinghouse.com (Edward W. Cummins)  
cwaltman@roe.com (C. Waltman)  
david.hinds@ge.com (David Hinds)  
david.lewis@pillsburylaw.com (David Lewis)  
dlochbaum@UCSUSA.org (David Lochbaum)  
eddie.grant@excelservices.com (Eddie Grant)  
erg-xl@cox.net (Eddie R. Grant)  
frankq@hursttech.com (Frank Quinn)  
garry.miller@pgnmail.com (Garry D. Miller)  
gcesare@enercon.com (Guy Cesare)  
greshaja@westinghouse.com (James Gresham)  
gwcurtis2@tva.gov (G. W. Curtis)  
gzinke@entergy.com (George Alan Zinke)  
ian.c.rickard@us.westinghouse.com (Ian C. Richard)  
james.beard@gene.ge.com (James Beard)  
jcurtiss@winston.com (Jim Curtiss)  
jgutierrez@morganlewis.com (Jay M. Gutierrez)  
jim.riccio@wdc.greenpeace.org (James Riccio)  
jim@ncwarn.org (Jim Warren)  
JJNesrsta@cpsenergy.com (James J. Nesrsta)  
john.o'neil@pillsburylaw.com (John O'Neil)  
Joseph.savage@ge.com (Joseph Savage)  
Joseph\_Hegner@dom.com (Joseph Hegner)  
junichi\_uchiyama@mhi.co.jp (Junichi Uchiyama)  
KSutton@morganlewis.com (Kathryn M. Sutton)  
kwaugh@impact-net.org (Kenneth O. Waugh)  
lindg1da@westinghouse.com (Don Lindgren)  
lynchs@gao.gov (Sarah Lynch - Meeting Notices Only)  
maria.webb@pillsburylaw.com (Maria Webb)  
mark.beaumont@wsms.com (Mark Beaumont)  
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)  
maurerbf@westinghouse.com (Brad Mauer)  
media@nei.org (Scott Peterson)  
mike\_moran@fpl.com (Mike Moran)  
mwetterhahn@winston.com (M. Wetterhahn)  
mwl@nei.org (Melanie Lyons)  
nirsnet@nirs.org (Michael Mariotte)  
patriciaL.campbell@ge.com (Patricia L. Campbell)

paul@beyondnuclear.org (Paul Gunter)  
paul.gaukler@pillsburylaw.com (Paul Gaukler)  
Petrovb@westinghouse.com (Bojan Petrovic)  
pshastings@duke-energy.com (Peter Hastings)  
rclary@scana.com (Ronald Clary)  
rgrumbir@comcast.net (Richard Grumbir)  
RJB@NEI.org (Russell Bell)  
RKTemple@cpsenergy.com (R.K. Temple)  
robert.kitchen@pgnmail.com (Robert H. Kitchen)  
roberta.swain@ge.com (Roberta Swain)  
ronald.hagen@eia.doe.gov (Ronald Hagen)  
sandra.sloan@areva.com (Sandra Sloan)  
sfrantz@morganlewis.com (Stephen P. Frantz)  
sterdia@westinghouse.com (Andrea Sterdis)  
steven.hucik@ge.com (Steven Hucik)  
Tansel.Selekler@nuclear.energy.gov (Tansel Selekler)  
tom.miller@hq.doe.gov (Tom Miller)  
tomccall@southernco.com (Tom C. Call)  
trsmith@winston.com (Tyson Smith)  
vijukrp@westinghouse.com (Ronald P. Vijuk)  
waraksre@westinghouse.com (Rosemarie E. Waraks)  
wayne.marquino@ge.com (Wayne Marquino)  
whorin@winston.com (W. Horin)