

June 5, 2013

Mr. Rich DeLong, Director
AP1000 Licensing
Westinghouse Electric Company
1000 Westinghouse Drive
Cranberry Township, PA 16066

SUBJECT: AUDIT SUMMARY FOR REVIEW OF WESTINGHOUSE'S DETAILED
CALCULATIONS SUPPORTING TOPICAL REPORT WCAP-17577-P,
REVISION 1 AND REQUEST FOR ADDITIONAL INFORMATION RESPONSES

Dear Mr. DeLong:

On April 23 and 24, 2013, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an audit related to the review of the Westinghouse Electric Company's topical report, WCAP-17577-P, Revision 1, "Topical Report on ASME Section III Piping Fatigue Analysis Utilizing the WESTEMS™ Computer Code." The enclosed audit summary describes the content of the review and identifies the audit participants.

If you have any questions, please contact the Project Manager, Bruce Bovol, at (301) 415-6715 or Bruce.Bovol@nrc.gov.

Sincerely,

/RA Brian Hughes for:/

Lawrence J. Burkhart, Acting Chief
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Project No. 0799

Enclosures:

1. Audit Participation
2. Audit Summary

cc/w encls: See next page

June 5, 2013

Mr. Rich DeLong, Director
AP1000 Licensing
Westinghouse Electric Company
1000 Westinghouse Drive
Cranberry Township, PA 16066

SUBJECT: AUDIT SUMMARY FOR REVIEW OF WESTINGHOUSE'S DETAILED
CALCULATIONS SUPPORTING TOPICAL REPORT WCAP-17577-P,
REVISION 1 AND REQUEST FOR ADDITIONAL INFORMATION RESPONSES

Dear Mr. DeLong:

On April 23 and 24, 2013, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an audit related to the review of the Westinghouse Electric Company's topical report, WCAP-17577-P, Revision 1, "Topical Report on ASME Section III Piping Fatigue Analysis Utilizing the WESTEMS™ Computer Code." The enclosed audit summary describes the content of the review and identifies the audit participants.

If you have any questions, please contact the Project Manager, Bruce Baval, at (301) 415-6715 or Bruce.Baval@nrc.gov.

Sincerely,

/RA Brian Hughes for:/

Lawrence J. Burkhart, Acting Chief
Licensing Branch 4
Division of New Reactor Licensing
Office of New Reactors

Project No. 0799

Enclosures:

1. Audit Participation
2. Audit Summary

cc/w encls: See next page

DISTRIBUTION:

Public	RidsNroDnrlLB4	DMcGovern	JColaccino
RidsAcrcAcnwMailCenter	RidsNroDnrl	CWu	YLi
RidsOgcMailCenter	LBurkhart	RJoshi	KHsu
RidsRgn2MailCenter	SBrunell	RButler	BBaval

ADAMS Accession No.: ML13134A290

NRO-002

OFFICE	DNRL/LB4:PM	DNRL/LB4:LA	DE/EMB:BC	DNRL/LB4:BC (A)
NAME	BBaval	RButler	TClark	LBurkhart-BHughes for:
DATE	05/21/13	5/14/13	06/05/13	06/05/13

OFFICIAL RECORD COPY

Audit Participation – April 23 and 24, 2013

The following table provides a comprehensive list of the audit participants from the U.S. Nuclear Regulatory Commission (NRC), Westinghouse Electric Company (WEC), and applicable licensees.

Name	Affiliation
Bruce Baval	NRC
John Wu	NRC
Ching Ng	NRC
Robert Hsu	NRC
Y.C. (Renee) Li	NRC
Joe Colaccino	NRC
John McInerney	Westinghouse
Mark Gray	Westinghouse
Eric Johnson	Westinghouse
Brad Carpenter	Westinghouse
Chuck Herbst	SNC
Kevin Pigg	SNC

**Audit Summary for Reviewing Detailed Calculations Supporting
WCAP-17577-P, Revision 1, and
Request for Additional Information Responses
April 23 and 24, 2013**

Audit Summary

On April 23 and 24, 2013, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an audit to review the detailed calculations that supported the Westinghouse Electric Company's (WEC) responses to requests for additional information (RAI)-WSTM-002 and -003.

The audit was conducted by a team of NRC staff members who are knowledgeable in various aspects of the piping and component stress evaluation, fatigue analysis and computer program review. The team spent 2 days at the WEC Twinbrook Office in Rockville, Maryland, auditing materials.

During this audit, WEC presented the responses to RAI-WSTM-002 and -003 and walked through the analysis performed and how it was performed in accordance with the procedure. It was explained how this sample problem provides a sufficient demonstration of the process for reducing conservatism by removing redundant peaks in accordance with the program documentation, when needed for an analysis.

Audit Exit

At the audit exit, staff discussed two action items with WEC:

- The analysis performed for the sample problem created for these RAI responses should be documented in a formal calculation so that it can be referenced in the safety evaluation report.
- The topical report contains several extracted portions from a referenced analysis procedure. How would a change to the analysis procedure impact the topical report?

Regarding the first action item – WEC agreed to document the calculation that was presented during the audit and summarized in the responses to RAIs-002 and -003, into a formal calculation so that it could be referenced by the staff. The calculation number will be CN-PAFM-13-29. Staff expressed that, following the review of the referenced calculation listed above, the response to RAI-WSTM-002 would be considered closed.

The second action item was turned into a supplement to WSTM-003 and submitted to WEC on Friday, April 26, 2013.

- **WSTM-003, Supplement 1** - WEC is requested to review the references to the topical report that refer to the NB-3600 procedure and ensure that all the key methodologies and criteria are included in the topical report.

Enclosure 2

DC Westinghouse - AP1000 Mailing List
cc:

(Revised 03/20/2013)

Ms. Sara Barczak
Southern Alliance for Clean Energy
P.O. Box 8282
Savannah, GA 31401

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

Paul M. Bessette
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004

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

Mr. Paul Gaukler
Pillsbury, Winthrop, Shaw, Pittman
2300 N Street, NW
Washington, DC 20037

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

Ms. Shannon Bowyer Hudson
Office of Regulatory Staff
State of South Carolina
1401 Main Street
Suite 900
Columbia, SC 29201

Rita Kilpatrick
250 Arizona Ave.
Atlanta, GA 30307

Mr. Paul A. Russ
Director, AP1000 Licensing
Westinghouse
1000 Westinghouse Drive
Cranberry Township, PA 16066

DC Westinghouse - AP1000 Mailing List

Email

agaughtm@southernco.com (Amy Aughtman)
amonroe@scana.com (Amy Monroe)
APAGLIA@Scana.com (Al Paglia)
APH@NEI.org (Adrian Heymer)
awc@nei.org (Anne W. Cottingham)
bgattoni@roe.com (William (Bill) Gattoni))
Bill.Jacobs@gdsassociates.com (Bill Jacobs)
cberger@energetics.com (Carl Berger)
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)
eddie.grant@excelservices.com (Eddie Grant)
erg-xl@cox.net (Eddie R. Grant)
ewallace@nuscalepower.com (Ed Wallace)
fbelser@regstaff.sc.gov
gcesare@enercon.com (Guy Cesare)
George.Madden@fpl.com (George Madden)
gzinke@entergy.com (George Alan Zinke)
james1.beard@ge.com (James Beard)
jcsaldar@bechtel.com (James Saldarini)
jerald.head@ge.com (Jerald G. Head)
jflitter@regstaff.sc.gov
jim@ncwarn.org (Jim Warren)
john.elnitsky@pgnmail.com (John Elnitsky)
Joseph_Hegner@dom.com (Joseph Hegner)
jrappe@nuscalepower.com (Jodi Rappe)
kinneyrw@dhec.sc.gov (Ronald Kinney)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
lchandler@morganlewis.com (Lawrence J. Chandler)
lindg1da@westinghouse.com (Don Lindgren)
maria.webb@pillsburylaw.com (Maria Webb)
marilyn.kray@exeloncorp.com
mark.beaumont@wsms.com (Mark Beaumont)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
maurerbf@westinghouse.com (Brad Maurer)
media@nei.org (Scott Peterson)
MSF@nei.org (Marvin Fertel)
nirsnet@nirs.org (Michael Mariotte)
nscjiangguang@sina.com (Jiang Guang)

DC Westinghouse - AP1000 Mailing List

Nuclaw@mindspring.com (Robert Temple)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gaukler@pillsburylaw.com (Paul Gaukler)
Paul.Jacobs@fpl.com (Paul Jacobs)
Paul@beyondnuclear.org (Paul Gunter)
pbessette@morganlewis.com (Paul Bessette)
pshastings@generationmpower.com (Peter Hastings)
Raymond.Burski@fpl.com (Raymond Burski)
rgrumbir@gmail.com (Richard Grumbir)
Richard.Orthen@fpl.com (Richard Orthen)
ritterse@westinghouse.com (Stanley E. Ritterbusch)
RJB@NEI.org (Russell Bell)
robert.kitchen@pgnmail.com (Robert H. Kitchen)
rong-pan@263.net (Pan Rong)
sabinski@suddenlink.net (Steve A. Bennett)
Sandra@sandrakgoss.com (Sandra Goss)
sara@cleanenergy.org
sfrantz@morganlewis.com (Stephen P. Frantz)
shudson@regstaff.sc.gov (Shannon Hudson)
sisk1rb@westinghouse.com (Rob Sisk)
smsloan@babcock.com (Sandra Sloan)
stephan.moen@ge.com (Stephan Moen)
Steve.Franzone@fpl.com (Steve Franzzone)
strambgb@westinghouse.com (George Stramback)
Tansel.Selekler@nuclear.energy.gov (Tansel Selekler)
Timothy.Beville@nuclear.energy.gov (Tim Beville)
tom.miller@hq.doe.gov (Tom Miller)
tomccall@southernco.com (Tom McCallum)
TomClements329@cs.com (Tom Clements)
Tony.Robinson@areva.com (Tony Robinson)
trsmith@winston.com (Tyson Smith)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
vijukrp@westinghouse.com (Ronald P. Vijuk)
Wanda.K.Marshall@dom.com (Wanda K. Marshall)
wayne.marquino@ge.com (Wayne Marquino)
whorin@winston.com (W. Horin)