

April 29, 2003

APPLICANT: Westinghouse Electric Company

PROJECT: AP1000 Standard Plant Design

SUBJECT: SUMMARY OF APRIL 3, 2003, MEETING WITH WESTINGHOUSE ELECTRIC COMPANY TO DISCUSS DIFFERENCES IN COMPUTER CODE PREDICTIONS ASSOCIATED WITH THE AP1000 DESIGN CERTIFICATION REVIEW

On April 3, 2003, a meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff and a representative of Westinghouse Electric Company (Westinghouse). The purpose of this meeting was to discuss differences in computer code predictions between the NRC RELAP5 code and the Westinghouse NOTRUMP code.

Westinghouse and NRC staff discussed input differences for the double ended direct vessel injection (DVI) line break small break loss-of-coolant accident (LOCA) since RELAP5 predicted this to be the worst case. The following differences were noted:

1. The resistance value in the RELAP5 input for flow resistance was too high. This caused delays in depressurization and automatic depressurization system (ADS) actuation.
2. The low pressure setpoints for reactor trip and safeguards actuations in the RELAP5 input were too high causing earlier actuation of these signals than should be the case.
3. The NOTRUMP input does not include the static head in the in-containment refueling water storage tank (IRWST) line between the tank and the DVI line. This causes a delay in IRWST injection for NOTRUMP which is not physically accurate but is conservative.

With the line loss and set point corrections, the RELAP5 analysis was repeated. The trips and ADS actuations were much closer to the NOTRUMP predictions.

A list of meeting attendees is included in Enclosure 1. A copy of the Westinghouse graphs from the NOTRUMP code are included in Enclosure 2. A copy of the NRC graphs from the RELAP5 code are included in Enclosure 3. Enclosures 2 and 3 may be accessed through the Agencywide Documents Access and Management System (ADAMS). This system provides text and image files of NRC's public documents. The enclosures mentioned above may be accessed through the ADAMS system under Accession No. ML031050632. If you do not have

access to ADAMS or if there are problems in accessing the handouts located in ADAMS, contact the NRC Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to pdr@nrc.gov.

Please direct any inquiries to Joelle L. Starefos at 301-415-8488, or JLS1@nrc.gov.

/RA/

Joelle L. Starefos, Project Manager
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Docket No. 52-006

Enclosures: 1. List of attendees
 2. Westinghouse graphs
 3. NRC graphs

cc w/encls: See next page

access to ADAMS or if there are problems in accessing the handouts located in ADAMS, contact the NRC Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to pdrc@nrc.gov.

Please direct any inquiries to Joelle L. Starefos at 301-415-8488, or JLS1@nrc.gov.

/RA/

Joelle L. Starefos, Project Manager
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Docket No. 52-006

Enclosures: 1. List of attendees
2. Westinghouse graphs
3. NRC graphs

cc w/encls: See next page

Distribution:

Hard Copy

NRLPO R/F

JLyons

MGamberoni

JStarefos

E-mail

PUBLIC

WJensen

SBajorek

LWard

CAder

JSegala

JColaccino

JStarefos

JFlack

ADAMS ACCESSION NUMBER: ML031060087

OFFICE	PM:NRLPO	SRE:SRXB	DD:NRLPO
NAME	JStarefos:cn	WJensen	MGamberoni
DATE	4/24/2003	4/28/2003	4/29/2003

OFFICIAL RECORD COPY

NRC Meeting Attendance List
AP1000 Computer Code Issues
April 3, 2003

<u>Name</u>	<u>Representing</u>
Walton Jensen	U.S. Nuclear Regulatory Commission (NRC)
Leonard Ward	U.S. Nuclear Regulatory Commission (NRC)
Stephen Bajorek	U.S. Nuclear Regulatory Commission (NRC)
Andy Gagnon	Westinghouse Electric Company

AP 1000

cc:

Mr. W. Edward Cummins
AP600 and AP1000 Projects
Westinghouse Electric Company
P.O. Box 355
Pittsburgh, PA 15230-0355

Mr. H. A. Sepp
Westinghouse Electric Company
P.O. Box 355
Pittsburgh, PA 15230

Lynn Connor
Doc-Search Associates
2211 SW 1ST Ave - #1502
Portland, OR 97201

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

Mr. Ed Rodwell, Manager
Advanced Nuclear Plants' Systems
Electric Power Research Institute
3412 Hillview Avenue
Palo Alto, CA 94304-1395

Charles Brinkman, Director
Washington Operations
Westinghouse Electric Company
12300 Twinbrook Parkway, Suite 330
Rockville, MD 20852

Mr. R. Simard
Nuclear Energy Institute
1776 I Street NW
Suite 400
Washington, DC 20006

Mr. Thomas P. Miller
U.S. Department of Energy
Headquarters - Germantown
19901 Germantown Road
Germantown, MD 20874-1290

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. Tom Clements
6703 Guide Avenue
Takoma Park, MD 20912

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

Mr. James F. Mallay, Director
Regulatory Affairs
FRAMATOME, ANP
3315 Old Forest Road
Lynchburg, VA 24501

Mr. Ed Wallace, General Manager
Project Management
Lake Buena Vista Bldg., 3rd Floor
1267 Gordon Hood Avenue
Centurion 0046
Republic of South Africa
PO Box 9396 Centurion 0046

Mr. Vince Langman
Licensing Manager
Atomic Energy of Canada Limited
2251 Speakman Drive
Mississauga, Ontario
Canada L5K 1B2

Mr. Gary Wright, Manager
Office of Nuclear Facility Safety
Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, IL 62704

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

Mr. Edwin Lyman
Nuclear Control Institute
1000 Connecticut Avenue, NW
Suite 410
Washington, DC 20036

Mr. Jack W. Roe
SCIENTECH, INC.
910 Clopper Road
Gaithersburg, MD 20878

Patricia Campbell
Winston & Strawn
1400 L Street, NW
Washington, DC 20005

Mr. David Ritter
Research Associate on Nuclear Energy
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

Mr. Michael M. Corletti
Passive Plant Projects & Development
AP600 & AP1000 Projects
Westinghouse Electric Company
P. O. Box 355
Pittsburgh, PA 15230-0355