June 17, 2004

ORGANIZATION: ATOMIC ENERGY OF CANADA LIMITED (AECL)

SUBJECT: SUMMARY OF MEETING HELD ON MAY 25 AND 26, 2004 TO DISCUSS ACR-700 CODES AND STANDARDS

The Nuclear Regulatory Commission (NRC) hosted a public meeting with Atomic Energy of Canada Limited (AECL) on May 25 and 26, 2004, at the U.S. Nuclear Regulatory Commission (NRC) Headquarters in Rockville, MD. The purpose of this meeting was to discuss the codes and standards to be applied to the Advanced CANDU Reactor (ACR-700) design. For a list of meeting attendees refer to Attachment 1.

AECL provided the NRC staff with the following presentations:

- Codes and Standards to be Applied to the ACR-700 Design
- Reactor and Reactor System/Component Level Compliance with NRC Regulations
- Design Codes and Standards for CANDU-Specific Requirements
- Applicability to the Standard Review Plan (SRP)

During the presentations, AECL stated that the ACR-700 Design Control Document (DCD) will use U.S. codes and standards but that requirements from Canadian standards may be used for CANDU-specific aspects of the ACR-700 design not addressed in the U.S. regulations, codes and standards. NRC staff stated that if there are any deviations from the American Society of Mechanical Engineers (ASME) codes, AECL must submit proposed alternatives in accordance with 10 CFR 50.55a. The NRC staff also requested that AECL identify where the Canadian standards are used for the class 1 pressure boundary components and provide justifications.

AECL identified CANDU-specific design features of the fuel channels, calandria tubes, reactivity control units, and fuel handling equipment. AECL provided the following requirements for pressure tubes in addition to satisfying the ASME Class 1 design and analysis rules:

- Pressure tubes shall be protected against delayed hydride cracking by ensuring that the maximum tensile strength, under design level A and level B conditions, plus the maximum initial residual stress, shall at no time exceed 67 percent of the tensile stress required to initiate delayed hydride cracking as determined in the laboratory by tests on unnotched specimens.

- Pressure tubes shall be supported such that they will not contact the calandria tube during the life of the channel.

- A system capable of detecting leaks before through-wall cracks grow to unstable lengths shall be provided.

AECL also provided an overview of the placement of CANDU-specific design features in the Standard Review Plan (SRP) such as fuel handling systems in Chapter 3, fueling machine pressure boundary in Chapter 5, control and shutoff rod mechanisms in Chapter 6, fuel handling controls in Chapter 7, and fuel handling and fuel transfer systems, calandria and moderator in Chapter 9. Upon completion of the presentations, AECL stated that the use of Canadian standards along with ASME codes ensures that major pressure boundary components are designed and fabricated to the highest available national standards and that the quality standards are commensurate with the importance of the safety function to be performed.

Additional details on the material covered in this meeting may be accessed through the ADAMS system under Accession No. ML041560328. 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.

Members of the public were in attendance but did not make public comments.

/RA/

James Kim, Project Manager
New Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 722

Enclosures: As stated

cc w/encls: See next page

AECL also provided an overview of the placement of CANDU-specific design features in the Standard Review Plan (SRP) such as fuel handling systems in Chapter 3, fueling machine pressure boundary in Chapter 5, control and shutoff rod mechanisms in Chapter 6, fuel handling controls in Chapter 7, and fuel handling and fuel transfer systems, calandria and moderator in Chapter 9. Upon completion of the presentations, AECL stated that the use of Canadian standards along with ASME codes ensures that major pressure boundary components are designed and fabricated to the highest available national standards and that the quality standards are commensurate with the importance of the safety function to be performed.

Additional details on the material covered in this meeting may be accessed through the ADAMS system under Accession No. ML041560328. 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.

Members of the public were in attendance but did not make public comments.

/RA/

James Kim, Project Manager
New Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 722

Enclosures: As stated

cc w/encls: See next page

ADAMS ACCESSION NUMBER: ML041660069

OFFICE	PM:RNRP	SC:RNRP
NAME	JKim	LDudes
DATE	6/15/04	6/17/04

OFFICIAL RECORD COPY

Distribution for May 25 and 26, 2004, Meeting Summary dated June 17, 2004

Hard Copy
RNRP R/F
PUBLIC
JKim
LDudes
BSosa

E-mail
PUBLIC
DMatthews/FGillespie
RNRP Group
DE Branch Chiefs
DE Section Chiefs
OGC
ACRS/ACNW
JLyons
TMensah
SBloom
JFlack
JJolicoeur, EDO
ESullivan
DTerao
CGreene
MMitchell
PSekarak
KKarowski
JFair
GMakar
JMuscara
JDanna
FEltawila
KHeck
JHernandez
SJones
KManoly
PPatnaik

ACR-700 Design Codes and Standards Meeting
May 25 and 26, 2004

ATTENDANCE LIST

Name	Representing
Robert Ion	AECL
Al Stretch	AECL
Livia Dimitrov	AECL
Marc Ledger	AECL
Vince Langman	AECL
Julian Millard	AECL
Ahmed Ibrahim	CNSC
Andrei Blahoianu	CNSC
James Kim	NRC
David Terao	NRC
John Fair	NRC
Greg Makar	NRC
Ken Heck	NRC
Ted Sullivan	NRC
Jorge Hernandez	NRC
Charles Greene	NRC
Ken Karwoski	NRC
Steven Jones	NRC
Patrick Sekerak	NRC
Kamal Manoly	NRC
Pat Patnaik	NRC
Calvin Reid	Bechtel
J. V. Smith	Bechtel

Attachment 1

ACR-700

cc:

Mr. Charles Brinkman
Westinghouse Electric Co.
Washington Operations
12300 Twinbrook Parkway, Suite 330
Rockville, MD 20852

Mr. Thomas P. Miller
U.S. Department of Energy
NE-20, Rm. A286
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. James Riccio
Greenpeace
702 H Street, NW, Suite 300
Washington, DC 20001

Mr. Adrian Heymer
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708

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

Mr. Paul Leventhal
Nuclear Control Institute
1000 Connecticut Avenue, NW
Suite 410
Washington, DC 20036

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

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

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

Mr. Tom Clements
6703 Gude Avenue
Takoma Park, MD 20912

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

Mr. Victor G. Snell
Director of Safety and Licensing
Atomic Energy of Canada Limited
2251 Speakman Drive
Mississauga, Ontario
Canada L5K 1B2

Mr. Glenn R. George
PA Consulting Group
130 Potter Street
Haddonfield, NJ 08033

J. Alan Beard
GE Nuclear Energy
13113 Chestnut Oak Drive
Darnestown, MD 20878-3554

Mr. Ian M. Grant
Canadian Nuclear Safety Commission
280 Slater Street, Station B
P.O. Box 1046
Ottawa, Ontario
K1P 5S9

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

Mr. Ronald P. Vijuk
Manager of Passive Plant Engineering
AP1000 Project
Westinghouse Electric Company
P. O. Box 355
Pittsburgh, PA 15230-0355

Dr. Greg Rzentkowski
Canadian Nuclear Safety Commission
P.O. Box 1046, Station 'B'
280 Slater Street,
Ottawa, ON, K1P 5S9
Canada

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

Mr. John Polcyn, President
AECL Technologies Inc.
481 North Frederick Avenue
Suite 405
Gaithersburg, MD 20877

Mr. Russell Bell
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708