

September 15, 2004

ORGANIZATION: ATOMIC ENERGY OF CANADA, LIMITED

SUBJECT: SUMMARY OF AUGUST 17, 2004, MEETING TO DISCUSS UPCOMING
ACR-700 DESIGN CERTIFICATION APPLICATION REVIEW

On August 17, 2004, a meeting was held between representatives of the Nuclear Regulatory Commission (NRC), the Canadian Nuclear Safety Commission (CNSC), and Atomic Energy of Canada, Limited (AECL). The purpose of this meeting was to discuss the NRC's process and expectations for the planned submittal of a design certification application for the ACR-700 reactor design. A list of meeting attendees is found in Attachment 1. A copy of the presentation materials used in the meeting can be found in the ADAMS system under Accession No. ML042450119. 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.

Opening remarks were given by the Director of NRC's Office of Nuclear Reactor Regulation (NRR), Mr. Dyer, the Director of NRC's Office of Nuclear Regulatory Research (RES), Dr. Paperiello, CNSC's Director General, Directorate of Nuclear Power Reactor Regulation, Mr. Grant, and Mr. Polcyn, President, AECL Technologies, Inc. and Mr. Petrunik, Vice President of Projects and Services for AECL.

The NRC's staff presentations to AECL and CNSC are summarized in the handouts shown in ADAMS Accession No. ML042450119. The discussion below addresses questions from AECL and CNSC, and the NRC staff's responses given at the meeting.

In the discussion of the contents of a design certification application, particularly testing requirements, AECL asked that, given that a full-scale prototype of the ACR-700 is not planned, how can the application satisfy requirements of 10 CFR 52.47? The NRC staff noted that 10 CFR 52.47 requires that design features be demonstrated through either analysis, appropriate test programs, operating experience, or a combination of these items.

In a discussion of the application format, an issue was raised regarding how a combined license holder could be affected by the scope of information contained in Tier 1 and Tier 2 documentation. The staff noted that the basis for the application content is that adequate information is provided to resolve safety issues. For the three certified designs, this need has led to more detailed information being provided in a design control document than is typically the case for a final safety analysis report for a plant licensed under 10 CFR Part 50. The information used in the staff's safety determination was captured in the design control documents. Modifications to the design can be made using a process defined within the 10 CFR Part 52 design certification rule.

AECL was informed that they will need to provide non-proprietary versions of proprietary documents it submits.

A question was raised regarding experience with Tier 2* information. The staff described its experience with review of the General Electric Advanced Boiling Water Reactor design. Some Tier 2 items, such as the American Society of Mechanical Engineers (ASME) Code requirements, are high-level, but change with time. Originally, the staff considered such information to be Tier 1. However, because of the stringent change process associated with Tier 1 material, the staff kept the requirement to build components in accordance with ASME requirements as Tier 1, but the actual ASME revision to be applied is identified as Tier 2*. NRC approval of Tier 2* changes is required before the change is implemented. The staff stated that it expects Tier 2* material will be identified during the ACR-700 review.

In a discussion of the impact of rapidly evolving technology, AECL asked who is responsible for proposing items where Design Acceptance Criteria (DAC) can be applied. The staff replied that the applicant makes a proposal which is subject to approval by the Commission, based on a recommendation from the staff.

AECL asked if there is a process to inform them of plans for and the results of research conducted by RES. The staff noted that the research plan will be discussed in an upcoming public meeting. In response to an AECL inquiry, the staff stated that it has sufficient information for some research planning at this time. The plan will be a living document, revised as needs require over the course of the design certification review. Existing processes (e.g., requests for additional information [RAIs]) will be used to inform AECL of issues arising from research efforts. RES will communicate its activities through the NRR project management staff.

AECL asked if research efforts could be on critical path for completion of the review. The staff said that research activities have been on critical path for previous reviews where the information initially provided was insufficient to support the staff's safety evaluation.

In the discussion of the role of the Advisory Committee on Reactor Safeguards (ACRS), AECL asked what their role would be in meetings with the committee. Early in the review, AECL will be expected to present the ACR-700 design to ACRS so that the committee has an understanding of its operation and safety features. In later review stages, the focus will shift to the staff's review. AECL was told that ACRS will have the DCD available for review. ACRS may have questions for the staff and the applicant; these will be communicated to AECL directly during the course of committee meetings, or via correspondence. Staff responses to ACRS questions are addressed in publicly-available correspondence and in subsequent ACRS meetings. In the case of the AP1000, some ACRS questions became RAI and/or draft safety evaluation report open items.

AECL asked how the ACRS reports its findings. The staff said that the committee issues a letter to the Commission at the end of the committee's review which is incorporated into the FSER. ACRS may also issue interim letters to communicate its thoughts earlier in the review.

AECL asked how different points of view between the staff and ACRS are resolved. If such cases arise, the staff and ACRS each communicate their position to the Commission which decides how to resolve the issue.

AECL asked if there is any opportunity for an applicant to point out information and request ACRS feedback on a particular topic. The staff said the applicant can do so in the public ACRS meetings.

In the discussion of the design certification application schedule and impacts, AECL noted that some testing may not be complete before the application is submitted for review, and asked how this situation should be addressed. The staff said that, at a minimum, the submittal needs to include a detailed description of the testing that has been performed, and the schedule for planned testing. If data from planned tests are needed for the staff to make its safety finding, the test schedule could affect the overall review schedule.

An expectation was described for AECL to present the DCD to the staff in a public meeting. The staff stated in response to a question that it expects this meeting to be conducted early in the acceptance review period.

The staff noted that project managers will coordinate all RAIs, including negotiation of proposed response dates. Those response dates can be revised, but changes could affect the project completion schedule. The staff intends to identify issues as early as possible in the review, which gives the greatest amount of time to resolve them. The applicant must incorporate material provided in RAI responses into the DCD if that information is relied upon in the staff's safety evaluation. Clear communication of information needs and plans will help ensure problems are identified in a timely manner and that surprises are avoided.

The staff outlined the process of resolving draft safety evaluation report (DSER) open items, development of the final safety evaluation report (FSER), and processing of the document. AECL asked if DSER open items can be a surprise to the applicant. The NRC staff said that it has a goal to clearly communicate the status of the review to the applicant so surprises are avoided. However, there can be circumstances where the applicant believes that it has provided sufficient information to resolve an issue, but the staff is unable to incorporate that information into the DSER because of its submittal late in the DSER development process.

AECL asked if the NRC staff can decide whether testing is required. The staff said yes for cases where it does not otherwise have sufficient information to reach a safety conclusion. Applicants are expected to describe necessary testing, while characterizing other testing as beneficial, but not essential. The staff could take exception to the applicant's assertion, concluding that some tests are in fact necessary rather than just "nice to have."

A question was asked on whether all testing needs to be complete to docket the application. The staff said that while this is preferred, earlier design certification applications did not include complete test results. It is important for the staff to understand the applicant's plans, so it is beneficial to discuss those plans as early as possible.

During the discussion of screening of regulations and guidance to determine their applicability to the ACR-700 design, the staff stated that it needed to understand the process AECL had applied to address this topic. It was agreed that a future meeting should be held to discuss how the design certification application will address regulatory requirements and guidance.

In the discussion of the comparison of the design to the standard review plan (SRP), AECL asked how cases where the NRC staff and the applicant have different opinions regarding which SRP version (i.e., official or draft) should be used to review the design. The NRC staff replied that such differences should be resolved at as low a level of staff as possible, with issues being escalated to management only as necessary. It was also noted that the SRP was written to be applied to licensing under 10 CFR 50 vs. 10 CFR 52, so some differences of opinion should be expected.

It was also noted that conclusions of the Preapplication Safety Assessment Report (PASAR) currently under development by the NRC staff are not binding. That is, a conclusion that the staff does not see an impediment to certifying the design is not equivalent to accepting the design. The DCD and FSER will be stand-alone documents, each providing a thorough description of the basis for their safety conclusions. The DCD needs to provide complete documentation, though it is possible some detailed information can be included by reference.

In the discussion of lessons learned from previous design certifications, AECL and the staff discussed the possibility that the application will be submitted electronically. AECL was advised to review the regulatory requirements of the "eRule" and the associated agency policies, including Commission papers. For expected DCD revisions, AECL asked if electronic submittals should provide complete documents or only changes. The staff said that it will review the issue and inform AECL.

CNSC representatives asked about the process for developing the FSER from the DSER. The NRC staff outlined the process where the applicant provides written responses to open items identified in the DSER. The staff reviews these responses to determine if the issue has been addressed. In some cases, additional information will be needed. DCD revisions will also be needed to reflect the information provided to address the open item. It is expected that the FSER will be complete when all open items have been resolved.

CNSC also asked about the difference between an RAI and an open item. RAIs are questions arising during the staff's review that leads to issuing the DSER, while open items are issues that are unresolved at the time the DSER is issued. It is expected that the open item list will be based largely on issues where RAIs were provided. It was also noted that NRC and CNSC intend to share information over the course of their respective licensing reviews. The two agency's have a formal agreements in place governing their interactions.

AECL asked how long a time period will elapse from receipt of the first set of RAIs to the last. The staff replied that that question cannot be addressed until the overall review schedule is established after receipt of the application.

The staff concluded the meeting by discussing key messages for the day:

- Safety is the number 1 priority
- A complete, high quality application will be needed, including thorough consideration of 10 CFR 52.47 testing issues
- Early communication on issues helps gain timely resolution

/RA/

Joseph Williams, Senior Project Manager
New Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 722

Attachments: As stated

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OFFICE	PM:RNRP	SC:RNRP
NAME	JWilliams	LDudes
DATE	9/7/2004	9/10/2004

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OGC	
GBagchi	
SArndt	
JKlein	
KHeck	
KWelter	

NRC Presentations Regarding Design Certification

August 17, 2004, Ramada Inn, Rockville, MD. 8:30 AM - 5:00

ATTENDANCE LIST

Name	Affiliation	Phone	E-Mail
Amy Cubbage	NRC/RNRP	415-2875	aec@nrc.gov
Raj Anand	NRC/RNRP	415-1146	rka@nrc.gov
Carl Paperiello	NRC/RES	415-6641	cjp1@nrc.gov
Massimo Bonechi	AECL	905-823-9040	bonechim@aecl.ca
Gwen Rousseau	AECL	905-823-9040	rousseag@aecl.ca
Stephen Yu	AECL	905-823-9040	yus@aecl.ca
Robert Ion	AECL	905-823-9060	ionr@aecl.ca
Nik Pipov	AECL	905-823-9040	popovn@aecl.ca
Victor Snell	AECL	905-823-9040	snellv@aecl.ca
Glenn Archinoff	AECL Technologies	301-332-9152	archinoffg@aecl.ca
Dave Wren	AECL	613-584-8811	wrend@aecl.ca
John Polcyn	AECL Technologies	301-228-8409	polcynj@aecl.ca
Ken Petrunik	AECL	405-823-9040	petrunikk@aecl.ca
Steve Frantz	Morgan Lewis	202-739-5460	sfrantz@morganlewis.com
J.V. Smith	Bechtel	301-228-6531	jvsmith@bechtel.com
Belkys Sosa	NRC/RNRP	301-415-2375	bxs2@nrc.gov
Joe Colaccino	NRC/RNRP	301-415-2753	jxc1@nrc.gov
Joe Sebrosky	NRC/RNRP	301-415-1132	jms3@nrc.gov
Joe Williams	NRC/RNRP	301-415-1470	jfw1@nrc.gov
Jerry Wilson	NRC/RNRP	301-415-3145	jnw@nrc.gov
Bill Beckner	NRR/RNRP	301-415-1126	wdb@nrc.gov
Goutam Bagchi	NRR/DE/EMEB	301-415-3305	gxb1@nrc.gov

Name	Affiliation	Phone	E-Mail
Steven Arndt	RES/DET/ERAB	301-415-6502	saa@nrc.gov
Joel Klein	NRC/NMSS/SPB	301-415-6498	jjk2@nrc.gov
Ken Heck	NRC/NRR/DIPM	301-415-2682	kch1@nrc.gov
Kent Welter	NRC/RES/ARRFB	301-415-5740	kbw@nrc.gov
Laura Dudes	NRC/NRR/DRIP	301-415-0146	lad@nrc.gov
Jim Dyer	NRC/NRR	301-415-1270	jed2@nrc.gov
Ahmed Ibrahim	CNSC/EAD	613-947-0624	ibrahima@cnscccsn.gc.ca
Miguel Santini	CNSC/ACRPD	613-995-0406	santinim@cnscccsn.gc.ca
Thecla Fabian	NucNet	301-869-0721	teklfabian@verizon.net
Christian Carrier	CNSC/ACRPD	613-944-6774	carrierc@cnscccsn.gc.ca
Richard Lee	NRC/RES/DSARE	301-415-6795	ryl@nrc.gov
Sud Basu	NRC/RES/DSARE	301-415-6774	sxb2@nrc.gov
Cedric Jobe	NEI	202-739-8128	clj@nei.org
Lauren Quinones	NRC/NRR/DRIP	301-415-2007	lnq@nrc.gov
Edward Burns	Self-Attorney	703-528-5975	ed.burns@earthlink.net
George Stramback	GENE	408-925-1913	george.stramback@gene.ge.com
J. Alan Beard	GENE	301-208-1460	james.beard@gene.ge.com
Shiro Akahori	Hitachi America Ltd.	301-228-8407	shiro.akahori@hal.hitachi.com
N. P. Kadambi	NRC/RES/ARREB	301-415-5896	npk@nrc.gov
Marsha Gamberoni	NRC/RES/ARREB	301-415-1193	mkg@nrc.gov
Frank Gillespie	NRC/NRR/DRIP	301-415-1267	fpg@nrc.gov
Scott Burnell	NRC/OPA	301-415-8204	srb3@nrc.gov
Mike Schoppman	AREVA/Framatome-ANP	301-254-7695	mas22@comcast.net
Ian Grant	CNSC	613-947-7767	granti@cnscccsn.gc.ca
Greg Rzentkowski	CNSC	613-947-7767	rzentkowskig@cnscccsn.gc.ca
Walt Jensen	NRR/DSSA/SRXB	301-415-2856	wlj@nrc.gov
Dave Terao	NRR/DE/EMEB	301-415-3317	dxt@nrc.gov
Pat Sekerak	NRR/DE/EMEB	301-415-2623	pxs1@nrc.gov

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. Glenn Archinoff
Licensing Manager
AECL Technologies Inc.
481 North Frederick Avenue
Suite 405
Gaithersburg, MD 20877

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

Mr. 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

Mr. Ken Petrunik
Vice President, Project and Services
Atomic Energy of Canada, Limited
2251 Speakman Drive
Mississauga, Ontario
Canada L5K 1B2