January 29, 2004

Mr. Vince Langman
ACR Licensing Manager
Atomic Energy of Canada Limited (AECL) Technology, Inc.
481 North Frederick Avenue, Suite 405
Gaithersburg, Maryland 20877

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION - ACR-700 PRE-APPLICATION QUALITY ASSURANCE REVIEW

Dear Mr. Langman:

Atomic Energy of Canada Limited (AECL) submitted a formal request for a pre-application review of the Advanced CANDU Reactor (ACR-700) design on June 19, 2002.

The Nuclear Regulatory Commission (NRC) staff is reviewing technical information provided by AECL as part of the on-going pre-application review activities for the ACR-700 design. The NRC staff has determined that additional information is necessary to continue the review. The requests for additional information (RAIs) are included in the enclosure. The topic covered in these RAIs include the AECL's probabilistic safety assessment methodology of the ACR-700 design. An advanced copy of the RAIs were sent to you via electronic mail on December 29, 2003. On January 22, 2004, AECL participated in a teleconference with the staff to discuss the content of the RAIs and agreed to provide the documents containing the ACR-700 information requested in the RAIs by February 13, 2004.

If you have any questions or comments concerning this matter, you may contact the undersigned at (301) 415-4125 or jsk@nrc.gov.

Sincerely,

/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

Enclosure: As stated

cc: See next page

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481 North Frederick Avenue, Suite 405
Gaithersburg, Maryland 20877

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION - ACR-700 PRE-APPLICATION QUALITY ASSURANCE REVIEW

Dear Mr. Langman:

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NAME	JKim	LDudes
DATE	1/23/04	1/23/04

OFFICIAL RECORD COPY

REQUEST FOR ADDITIONAL INFORMATION - LETTER 3
ACR-700 PRE-APPLICATION REVIEW - PRA Methodology

The following questions and comments were generated from an initial review of Chapter 12, "Quality Assurance," of "Analysis Basis: Probabilistic Safety Assessment Methodology," AECL Report 108-03660-AB-001, Revision 1, July 2003. This document is also being reviewed by the Office of Research (RES). Therefore, additional questions and comments may be generated at a future date.

33. Section 12, Page 12-1: Please discuss how the quality program described in the ACR Quality Assurance (QA) Manual is being implemented with respect to the PSA work. In particular, provide the QA audit schedule and discuss any findings made during previous QA audits.

34. Section 12.3, Page 12-2: This section lists the codes and standards that AECL will apply to the probabilistic safety assessment (PSA). However, Section 1.1, Page 1-2 identifies three additional references pertaining to quality of the PSA:

    1. ASME RA-S-2002, "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications"

    2. Standard Review Plant Chapter 19.1, "Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities"

    3. Draft Regulatory Guide DG-1122, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities"

    How will these three additional references be utilized to help ensure the quality of the ACR-700 PSA?

35. Section 12.7, Pages 12-4 through 12-5: This section describes the review activities for the ACR-700 PSA work. Are there any plans for an independent, external (to AECL) peer review of the PSA before it is submitted to the NRC? If so, please describe in general the planned participants (e.g., Canadian Atomic Energy Control Board, other CANDU operators, IAEA), discuss their qualifications to perform the peer review, and describe the guidance/process/procedures they will use during the peer review. If not, please identify in general the AECL reviewers of the PSA, discuss their qualifications to perform the internal review, and explain how the internal AECL PSA reviewers maintain their independence from the AECL staff who are actually performing the PSA.

36. Section 12.7.5, Page 12-5: During accident sequence quantification (ASQ), it is typical for many changes to be made to the PSA during the event tree and fault tree integration process (e.g., changes to resolve circular logic loops, logic flag settings, errors). As a result, previously reviewed and issued PSA documentation (e.g., system-level fault tree analyses) may be out of date with respect to the final integrated PSA model. Please describe how PSA documentation is updated to ensure that it is internally consistent throughout the project.

ATTACHMENT

ACR-700

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