

# Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant

Atomic Energy of Canada Limited

Subject

Application to Amend Atomic Energy of Canada  
Limited Non-Power Reactor Operating Licence  
for the Dedicated Isotope Facilities

Hearing  
Date

March 5, 2008

## RECORD OF PROCEEDINGS

Applicant: Atomic Energy of Canada Limited (AECL)

Address/Location: Chalk River Laboratories, Chalk River, Ontario, K0J 1J0

Purpose: Application to Amend Atomic Energy of Canada Limited Non-Power Reactor Operating Licence for the Dedicated Isotope Facilities

Application received: January 28, 2008

Date of hearing: March 5, 2008

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: M. Binder, Chair

Secretary: K. McGee  
Recording Secretary: P. Reinhardt

**Licence:**  
**Date of Release of Decision:**

**Amended**  
March 12, 2008

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## **Introduction**

1. Atomic Energy of Canada limited (AECL) has applied to the Canadian Nuclear Safety Commission<sup>1</sup> (CNSC) for an amendment to its Non-Power Reactor Operating Licence for its Dedicated Isotope Facilities at the Chalk River Laboratories, Chalk River, Ontario. The current licence is NPROL 62.00/2011.
2. The purpose of this request is to amend the current operating licence to change one of the documents listed in its Appendix B, the MAPLE Reactors Operating Limits and Conditions (OLCs). The new set of OLCs would incorporate changes required for performing the 400A-series of tests as part of AECL's investigation of the positive Power Coefficient of Reactivity of the MAPLE 1 reactor. Other changes resulting from AECL's Safety Review Committee (SRC) and CNSC staff comments on earlier versions of the OLCs would also be incorporated in the new OLCs.

## Issue

3. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*<sup>2</sup>:
  - a) if AECL is qualified to carry on the activity that the amended licence would authorize; and
  - b) if in carrying on that activity, AECL would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

## Hearing

4. The Commission, in making its decision, considered information presented for a hearing held on March 5, 2008 in Ottawa, Ontario. The hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*<sup>3</sup>. During the hearing, the Commission considered written submissions from CNSC staff (CMD 08-H106) and AECL (CMD 08-H106.1).

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<sup>1</sup> The *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.

<sup>2</sup> S.C. 1997, c. 9.

<sup>3</sup> S.O.R./2000-211.

## Decision

5. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*, the Commission concludes that AECL is qualified to carry on the activity that the amended licence will authorize. The Commission is of the opinion that AECL, in carrying on that activity, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends the Non-Power Reactor Operating Licence NPROL 62.00/2011 issued to Atomic Energy of Canada Ltd for its Dedicated Isotope Facilities. The amended licence, PROL 62.01/2011, remains valid until October 31, 2011.

6. The Commission includes in the licence the modifications as recommended by CNSC staff in CMD 08-H106.

## Issues and Commission Findings

7. In making its licensing decision, the Commission considered a number of issues relating to AECL's qualification to carry out the proposed activities and the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.

### *Qualifications and Protection Measures*

8. CNSC staff reviewed the MAPLE Reactors OLCs proposed by AECL with the following comments: the current OLCs include the main document and four different appendices that contain changes modifying the previous appendix depending of the current state of the reactor. The situation would be greatly improved if each of the appendix contained modifications to the main document to the particular reactor state and then at most one appendix, the one relevant to the current state of the reactor would be applicable at a given time.

9. CNSC staff recognized that the OLCs correctly reflect the safety case for operation with perforated flow tubes with the exception that these require using the reduced set point. Therefore this reduction remains in the conservative direction. There was also a concern raised by the fact that the following assumptions present in the safety case were absent in the OLCs: namely, section 5.2, the reflector cooling system heat exchanger is isolated when operating with the Primary Coolant System (PCS) not running and section 6.1.2, the operation of the reflector cover gas vent valve would be prohibited during the loss and subsequent restoration of reflector inventory.
10. One of the requirements proposed in the OLC revisions is to decrease the bound of the Limiting Condition for Safe Operations (LCO) for the acceptable range of plenum-to-pool pressure difference from the current limit of 118 kPa to 110 kPa. This change has been found acceptable by CNSC staff as it is expected to have only a minor effect on the suppression of core jet. However, CNSC staff request that the bypass flow limits present in the revision 21 of the OLCs be reinstalled in the next OLCs revision to be proposed by AECL.
11. The proposal to remove the requirement in regards of the Reactor Regulating System (RRS) to shut down the reactor at a certain value of plenum-to-pool pressure difference was accepted by CNSC staff.
12. CNSC staff considered that the comments above outline issues that are not impediments to the approval of Revision 23 of the MAPLE Reactors OLCs for the performance of the 400-A series of tests in the MAPLE 1 reactor. However, these comments should be addressed by AECL and dispositioned in the next revision of the MAPLE OLCs.
13. Based on the above information, the Commission approves revision 23 of the Operating limits and conditions proposed by the AECL.

#### ***Application of the Canadian Environmental Assessment Act***

14. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act*<sup>4</sup> (CEAA) have been fulfilled.
15. CNSC staff reported that it had completed an Environmental Assessment (EA) determination. CNSC staff stated that there was no requirement for an EA pursuant to subsection 5(1) of the CEAA.

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<sup>4</sup> S.C. 1992, c. 37.

16. The Commission determined that there is no requirement for an Environmental Assessment pursuant to subsection 5(1) of the *Canadian Environmental Assessment Act*<sup>[31]</sup> (CEAA). The Commission is satisfied that all applicable requirements of the CEAA have been fulfilled.

### **Conclusion**

17. The Commission has considered the information and submissions of CNSC staff as presented in the material available for reference on the record.
18. The Commission is of the opinion that the applicant meets the requirements of subsection 24(4) of the *Nuclear Safety and Control Act*. That is, the Commission is of the opinion that AECL is qualified to carry on the activity that the amended licence will authorize and that it will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.
19. The Commission therefore amends, pursuant to section 24 of the *Nuclear Safety and Control Act*, the Non-Power Reactor Operating Licence 62.00/2011 issued to AECL for its Dedicated Isotope Facilities, located in Chalk River, Ontario. The amended licence 62.01/2011 remains valid until October 31, 2011.
20. The Commission includes in the licence the recommendations made by CNSC staff in CMD 08-H106.
21. The Commission notes that its decision in this particular instance does not restrict the Commission's decisions in any future applications of this nature.

Michael Binder,  
President  
Canadian Nuclear Safety Commission

Date of release of Decision: March 12, 2008

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