



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant McMaster University

Subject Application to Amend the Non-Power Reactor
Operating Licence for the McMaster Nuclear
Reactor (MNR)

Hearing
Date August 9, 2012

RECORD OF PROCEEDINGS

Applicant: McMaster University

Address/Location: 1280 Main Street West Hamilton, ON L8S 4L8

Purpose: Application to Amend Non-Power Reactor Operating Licence for the McMaster Nuclear Reactor (MNR)

Application received: March 16, 2012

Date of hearing: August 9, 2012

Location: Canadian Nuclear Safety Commission (CNSC) 280 Slater St., Ottawa, Ontario

Members present: M. Binder, Chair

Secretary: M. Leblanc

Recording Secretary: C. Heyendal / S. Gingras

Licence: Amended

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Introduction

1. McMaster University has applied to the Canadian Nuclear Safety Commission¹ (CNSC) for an amendment to the Non-Power Reactor Operating Licence for its McMaster Nuclear Reactor (MNR) located in Hamilton, Ontario. The current licence, NPROL-01.00/2014, expires on June 30, 2014.
2. McMaster University is requesting an amendment to the MNR's operating licence to reflect a change in the Class III power supply at the MNR. This change affects the description of the electrical system in MNR's Safety Analysis Report (SAR), therefore the SAR needs to be updated. A licence amendment is required to reflect the updated SAR, this document being listed in Appendix A of the MNR operating licence.
3. The MNR is used for a variety of purposes including research and education, commercial applications such as neutron radiography, and medical radioisotope production. The MNR is an important producer of Iodine-125, used in cancer therapy.

Issue

4. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*² (NSCA):
 - a) if McMaster University is qualified to carry on the activity that the amended licences would authorize; and
 - b) if in carrying on that activity, McMaster University 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

5. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to review the application. The Commission, in making its decision, considered information presented for a hearing held on August 9, 2012 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from CNSC staff (CMD 12-H118 and CMD 12-H118.A) and McMaster (CMD 12-H118.1).

¹ 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.

² Statutes of Canada (S.C.) 1997, chapter (c.) 9.

Decision

6. 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 McMaster University has met the conditions of subsection 24(4) of the NSCA. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends the Non-Power Reactor Operating Licence NPROL-01.00/2014 issued to McMaster University for the McMaster Unclear Reactor located in Hamilton, Ontario. The amended licence, NPROL-01.01/2014, is valid until June 30, 2014.

7. The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 12-H118.

Issues and Commission Findings

Qualifications and Protection Measures

8. McMaster University proposes to change the course of Class III power from the original 25 kW gasoline generator to a modern set of four emergency diesel generators, located on the McMaster University campus. Each emergency diesel generator can supply the demand in emergency power for the entire campus.
9. CNSC staff reported that the starting system is designed to initiate generator start within three to five seconds of loss of Class IV power. CNSC staff added that the diesel generators, batteries and their associated switchgear are function-tested weekly, and serviced annually under contracts with the applicable suppliers. Additional tests are performed at least monthly by MNR personnel and according to written procedures, and more often than the minimum frequency specified by the Canadian Standards Association.
10. CNSC staff considers that, although Class III power is not a safety concern to the reactor itself since it is not required to maintain the reactor or any subsystems in a safe configuration, it should be available in the long term in order to maintain basic systems operable. In addition, at the request of CNSC staff and in light of the lessons learned from the Fukushima events, McMaster University agreed to install an additional connection point should the new Class III power become unavailable. This connection point would allow for an easy connection to a portable generator.
11. CNSC staff noted that McMaster University has provided the updated section of the SAR that reflects the changes made to the Class III power, and that they consider this document to be acceptable.

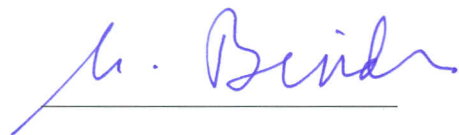
12. CNSC staff has determined that a licence amendment to reflect the revised SAR, listed in Appendix A of the licence, would not have adverse effects on the environment, the health and safety of the public or the maintenance of national security. In fact, CNSC staff reported that this proposed change is an improvement in the overall safety, reliability and maintainability of the facility.

Application of the *Canadian Environmental Assessment Act*

13. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act, 2012*³ (CEAA 2012) have been fulfilled.
14. CNSC staff reported that it had completed an Environmental Assessment (EA) determination under the CEAA 2012. CNSC staff stated that the proposed upgrade to the backup electrical power for the MNR at McMaster University is not classified as a “designated project” pursuant to the *Regulations Designating Physical Activities* made under paragraph 84(a) of the CEAA 2012. Therefore, the CNSC is not considered a responsible authority pursuant to paragraph 15(a) of the CEAA 2012 and no federal EA is required.

Conclusion

15. The Commission has considered the information and submissions from McMaster University and CNSC staff and is satisfied that the requested amendment will not adversely impact the safety of the MNR operations. The Commission is also satisfied that aboriginal consultation is not necessary in relation to the proposed amendment.
16. The Commission is also satisfied that all applicable requirements of the CEAA have been fulfilled.



Michael Binder
President,
Canadian Nuclear Safety Commission

AUG 09 2012

Date

³ S.C. 2012, c.19, s.52.