



UNPROTECTED/ NON PROTÉGÉ

CMD 23-H3Q

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Questions from Commission Panel Members

Questions des membres de la formation de la Commission

In the Matter of

À l'égard du

Royal Military College of Canada

Collège militaire royal du Canada

Application from the Royal Military College of Canada to renew its non-power reactor operating licence for its SLOWPOKE-2 facility for a period of 20 years

Demande du Collège militaire royal du Canada concernant le renouvellement, pour 20 ans, de son permis d'exploitation d'un réacteur non producteur de puissance pour l'installation SLOWPOKE-2

Public Hearing - Hearing in writing based on written submissions

Audience publique - Audience fondée sur des mémoires

April 2023

Avril 2023



Question(s) from Commission Panel Member(s)	Question(s) des membre(s) de la formation de la Commission
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INTRODUCTION

The Panel of the Commission, in conducting a [Hearing in Writing](#)¹ to consider an application from the Royal Military College of Canada (RMC) to renew its non-power reactor operating licence for its SLOWPOKE-2 reactor facility for a period of 20 years, has reviewed the written submissions provided by CNSC staff in [Commission Member Document](#) (CMD) CMD 23-H3, CMD 23-H3.A, and CMD 23-H3.B and RMC in its application, CMD 23-H3.1, and CMD 23-H3.1A. The Panel of the Commission also reviewed written submissions from 2 intervenors. The Panel of the Commission requires additional information with respect the questions set out below.

QUESTIONS

The Panel’s questions for CNSC staff are set out in Table 1 and the Panel’s questions for RMC are set out in Table 2.

Table 1: CMD 23-H3Q Questions for CNSC staff

#	Commission Panel Questions
1.	CNSC staff’s assessment noted that the safety of the reactor had been demonstrated for a reactivity addition of up to 6.5 mk and, therefore, an increase of the maximum allowable excess reactivity of 4.3 mk would not affect the safety of the reactor, “with a significant margin”. Describe the adequacy of the safety margin around 6.5 mk.
2.	CNSC staff propose extracting the Operating Limits and Conditions (OLCs) from the licence and incorporating them in the Licence Conditions Handbook under ‘Operating Performance’ instead. What is the reason for this move? Ease of reference?
3.	With respect to the OLCs: It appears that if both the Uninterruptible Power Supply and the backup generator fail to supply power to the reactor, there would be a guaranteed shutdown of the reactor. How? Does it mean that the SLOWPOKE-2 has an automatic trip system? Automatic shutdown or a manual shutdown system? Incidentally, is the main shutdown system decoupled from the control system (cadmium control rod)? Should the control rod fail and/or the reactor room cannot be entered, cadmium shut down capsules can be inserted in the irradiation sites. Is this considered as the backup (2nd) shutdown system? Is the action of inserting cadmium capsules in the irradiation sites fast enough to prevent a reactor excursion? Or is the reactor dynamics bounded by its safety design characteristics (negative thermal power

¹ Revised Notice of Public Hearing 2023 H-3, April 17, 2023



	coefficient, decrease in density of moderator)? Has this shut down procedure been tested on the RMC SLOWPOKE?
4.	During the refueling of the SLOWPOKE in August/September 2021, cameras were used to provide detailed visual examination of the reactor container and its components (radiation sites, shims, etc.). Does a visual examination suffice to conclude that there are no aging issues related to the structures, the systems, and the components of the reactor facility?
5.	The SLOWPOKE reactor is said to be ‘inherently safe’. Is there a formal (e.g., International Atomic Energy Agency) definition for this expression?
6.	The intervention by D. Winfield (CMD 23-H3.2) raised that there is no existing OLC for the maximum number of irradiation sample vials that are allowed simultaneously in the inner irradiation sites. Is there a maximum number of irradiation sample vials that are allowed simultaneously in the irradiation sites? If so, where is this limit documented?
7.	The intervention by D. Winfield (CMD 23-H3.2) raised that there is no existing OLC for limiting the amount of fissile material that may be irradiated. Is there a limit for the amount of fissile material that may be irradiated? If so, where is this limit documented?
8.	The intervention by D. Winfield includes several additional recommendations related to use of the graded approach and outdated document references, as summarized in section 7 (iv), (v), and (vi) of CMD 23-H3.2. Provide a response to each of these recommendations.

Table 2: CMD 23-H3Q Questions for RMC

#	Commission Panel Questions
1.	Must the students who work at the SLOWPOKE facility attend the education and training session on Workplace Hazardous Materials Information System, safety, and introduction to radiation safety? Also, do the students have to pass an exam on the content of the training?
2.	With respect to Conventional and Nuclear Emergency Preparedness and Response: Who is the ultimate authority at RMC for managing/coordinating an emergency on-site? Off-site?
3.	With respect to the Preliminary Decommissioning Plan: describe whether and how lessons learned from the previously decommissioned SLOWPOKE reactors have been incorporated.



REQUEST

CNSC staff and RMC shall submit responses by way of supplementary CMD on or before, 2023-05-05, if possible. RMC and CNSC staff are expected to inform the Registry of any concerns respecting this deadline within five working days of receiving this CMDQ.

Name: Denis Saumure, Commission Registrar <i>On behalf of the Panel of the Commission</i>	Date: 2023-04-20
Signature:	