



UNPROTECTED

Questions from Commission Panel Members

In the Matter of

Application to allow the production of lutetium-177(Lu-177) at the Bruce Nuclear Generating Station (NGS)

Public Hearing - Hearing in writing based on written submissions

July 2021

NON PROTÉGÉ

Questions des membres de la formation de la Commission

À l'égard de

Demande de modification de permis visant à permettre la production de lutécium 177 à la centrale nucléaire de Bruce

Audience Publique - Audience fondée sur des mémoires

Juillet 2021



INTRODUCTION

The Panel of the Commission, in conducting hearing in writing [2021-H-100](#)¹ has reviewed the written submissions provided by CNSC staff, Bruce Power, and 20 intervenors. In its consideration of whether to amend, under subsection 24(2) of the [Nuclear Safety and Control Act](#), the Power Reactor Operating Licence for Bruce NGS A and B to authorize the production of Lutetium-177, the Panel of the Commission requires additional information with respect to [CMD 21-H100](#), [CMD 21-H100.A](#), [CMD 21-H100.1](#) and [CMD 21-H100.1A](#)

QUESTIONS

The Panel’s seven questions for CNSC staff’s attention and response are set out in Table 1.

Table 1 – CMD 21-H100Q Questions for CNSC Staff

#	Commission Panel Questions
1.	<p>If there is a breach in the pneumatic delivery system, Bruce Power notes that contaminated inert carrier gas would be directed to the exhaust stack and be contained by the high-efficiency particulate air (HEPA) filters. Furthermore, releases through the stack would be detected by the continuous monitoring system.</p> <p>Question: It is not mentioned how the carrier gas would become contaminated, but HEPA filters are designed for particulate matter capture. Therefore, are the HEPA filters sufficient to capture the contaminated carrier gas?</p>
2.	<p>Bruce Power will be shipping the irradiated targets to a third party, name withheld due to commercial confidentiality, that is a licensed entity outside of Canada. Although it is stated that the recipient of the irradiated targets is a licensed entity, can CNSC staff confirm that it has validated these credentials, and that the entity is in fact known and in good international standing? The purpose of this question is not to place in doubt the business dealings of Bruce Power, but solely to ensure that withholding names of recipients of nuclear materials for business reasons does not prevent CNSC from doing its due diligence investigation for safety and international obligations. The name does not need to be revealed, the only request is for confirmation that CNSC has in fact investigated and approved the recipient.</p>
3.	<p>Under <i>Design Background</i> in CNSC’s CMD it was mentioned that targets that become stuck in the carrier tubes would remain in place until the unit’s next outage.</p> <p>Questions:</p> <p>(i) Would such a blockage prevent any further irradiation of targets, making the system inoperative, and</p> <p>(ii) Would the targets be highly radioactive after such prolonged exposure, and what would the handling and disposal implications be?</p>

¹ Notice of Hearing in Writing [2021-H-100](#), January 19, 2021



4.	Related to the previous issue, if targets become stuck in the delivery system, is there any risk of pressure build-up due to trapped delivery gas heating, or the possibility of the delivery tube bursting and releasing contaminated gas?
5.	What happens to the target in the event of an unplanned shutdown? Can it be retrieved, or left in place to complete its irradiation as planned and then retrieved? Has this scenario been planned for?
6.	Has the Canadian endorsement certificate for the shielded transportation container been completed (estimated as May 2021, which was after delivery of CNSC's CMD)?
7.	Has the structural floor loading plan of the IPS design been revised and approved by CNSC staff? This was estimated to be completed by March 31, 2021.

REQUEST

CNSC staff's responses shall be submitted by way of supplementary CMD by July 16, 2021, if possible. The Secretariat should be informed of any concerns respecting this deadline.

Name:	Marc Leblanc, Commission Secretary <i>On behalf of the Panel of the Commission</i>	Date: 2021-06-29
Signature:	Leblanc, Marc	Digitally signed by Leblanc, Marc DN: C=CA, O=GC, OU=CNSC-CCSN, CN="Leblanc, Marc" Reason: I am the author of this document Location: your signing location here Date: 2021-06-29 14:46:43 Foxit Reader Version: 9.7.1