Canada's Nuclear Regulator

L'organisme de réglementation nucléaire du Canada

☐ Protected B - Prescribed Information

☑ Unclassified Information

ORDER UNDER SECTION 35 OR PARAGRAPH 37(2)(f) OF THE *NUCLEAR SAFETY AND CONTROL ACT*

Index No./Order No.	1. CNSC licence No. (if applicable)	2. Date of order (YYYY-MM-DD)
1176	N/A	2026-07-09

3. Company/licensee (if applicable) and address

Institut national de la recherche scientifique, 1650, boul. Lionel-Boulet Varennes (Québec) J3X 1P7

4. Name (and title or position) of person(s) receiving the order

Francois Légaré, Director, Institut national de la recherche scientifique, Énergie Matériaux Télécommunications Research Centre

5a. Actions or measures required to be taken by licensee and/or other person(s) (specify) in respect of any facility, place, substance, vehicle, equipment or information (specify), including any time limits or restrictions

The Institut national de la recherche scientifique (INRS) must cease all operation of the LS1 laser for particle acceleration, for which it must obtain a licence from the Canadian Nuclear Safety Commission (CNSC).

A licence from the CNSC is required for electron or ion beam energy equal to or greater than 1 MeV.

☐ Addendum attached

5b. This order is closed when all terms listed in 5a of this form have been fulfilled, and

The INRS may resume operation of the LS1 laser for particle acceleration at an energy greater than 1 MeV when it has obtained a licence from the CNSC for such operation.

☐ Addendum attached

6. Information on which order is based

See addenda.

☑ Addendum attached

7. Time limit for complying ☑ Immediately ☐ Specified time (YYYY-MM-DD)

8. CNSC inspector or designated officer making the order	
Name: Leah Shuparski-Miller	Title: Project Officer
Address: 280 Slater St, Ottawa ON K1P 5S9	Email Address: leah.shuparski-miller@cnsc-ccsn.gc.ca
Telephone: 613-277-0375	Fax: (613) 995-5086

Signature (certificate)	See French version

9. Method of transmitting the order: ☐ Personal delivery ☐ Mail ☑ Email ☐ Fax ☐ Other (specify) _____

SUMMARY OF SOME RELEVANT SECTIONS OF THE *NUCLEAR SAFETY AND CONTROL ACT*

ORDERS OF AN INSPECTOR
35(1) Refer to this subsection for orders issued to licensees.
35(2) Refer to this subsection for orders issued to any person.

DESIGNATED OFFICERS
37(2)(f) The Commission may authorize a designated officer to make any order that an inspector may make under subsection 35(1) or (2).

PROCEDURES
38 Every order of an inspector and every order of a designated officer under paragraph 37(2)(f) shall be made, and every measure under paragraph 37(2)(c), (d) or (g) shall be taken, in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*.

COMPLIANCE WITH ORDER
41 Every person named in or subject to an order of the Commission, an inspector or designated officer shall, regardless of whether or not the person has had an opportunity to make representations with respect to the order, comply with the order within the time specified in it or, if no time is specified, immediately.

OPPORTUNITY TO BE HEARD
Refer to sections **39 and 40** of the *Nuclear Safety and Control Act.*

LIABILITY FOR COSTS
Refer to section **42** of the *Nuclear Safety and Control Act.*

OFFENCES AND PUNISHMENT
Refer to sections **48 to 65** of the *Nuclear Safety and Control Act.*

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ADDENDUM

☐ Inspection report ☑ Order	Index No. 1176	CNSC licence No. (if applicable) N/A

On July 9, two CNSC inspectors conducted a reactive inspection at 1650 Lionel-Boulet Boul., Varennes, QC. The inspectors confirmed the presence of a laser-driven particle accelerator subject to licensing under the Nuclear Safety and Control Act. The INRS holds three licences from the CNSC for laboratory studies, fixed gauges and self-shielded irradiators. None of those licences cover the operation of a particle accelerator.

There is evidence that the LS1 laser can accelerate electrons to 400 MeV (ref. 1) and protons to 7.3 MeV (ref 2). Though the INRS has implemented safety and radiation protection measures, these have not been evaluated in detail by CNSC staff.

Reference documents:
1. High repetition-rate 0.5 Hz broadband neutron source driven by the Advanced Laser Light Source, R. Lelièvre et al. Physics of Plasmas 31, 093106 (2024).
2. HIgh average-flux laser-driven neutron source. S. Vallières et al. Nature Communications 16:11498 (2025).

☑ Inspector ☐ Designated Officer	Name: Leah, Shuparski-Miller	Date: (YYYY-MM-DD) 2026-07-09

Signature (certificate)	See French version