



Licence Application Form for Class II Isotope Production Accelerators

SECTION A – APPLICANT INFORMATION

A.1 Type of request (Mark only ONE of the following boxes)

- Construction licence Operation to commission licence Routine operation licence
 Decommissioning licence

(Mark only ONE of the following boxes)

- New licence Renewal

Current licence No. (if applicable): _____

A.2 Language of licence

- English French Both

A.3 Applicant information

Name of applicant: _____
(Please print or type)

Head office address:

Street: _____

City: _____ Province: _____ Postal code: _____

Mailing address (if different from above):

Street: _____

City: _____ Province: _____ Postal code: _____

A.4 Proof of legal status (new licensees only)

Append proof of incorporation or sole proprietorship.

Appended as: _____

A.5 Public access to information

Is any part of this application subject to a request for exemption from the CNSC policy on public access to licensing information?

- No Yes (append a description of the reason for the exemption)

Appended as: _____

continued on next page



A.6 Billing contact person (for applicants subject to cost-recovery fees)

Mr. Mrs. Ms.

Name: _____
Surname Given name Middle name

Title: _____ Telephone: _____

Email: _____ Facsimile: _____

Mailing address (if different from A.3):

Street: _____

City: _____ Province: _____ Postal code: _____

A.7 Financial guarantees

Append information regarding the value and form of the financial guarantee, if required.

Appended as: _____

SECTION B – LICENSED ACTIVITIES AND LOCATIONS

B.1 Licensed activities

Check as many activities as the applicant intends to conduct in association with the type of licence applied for.

Possess Use Store Transport Transfer

Import Export Other _____

B.2 Principal location of use or storage or both

Identify the location of the isotope production accelerator facility.

Building: _____ Room: _____

Street: _____

City: _____ Province: _____ Postal code: _____

Append proof of ownership of the site or authorization to construct and operate a nuclear facility at this location from the owner.

Appended as: _____

B.3 Other locations

Identify any other locations where nuclear substances may be used or stored.

Building: _____ Room: _____

Street: _____

City: _____ Province: _____ Postal code: _____

Location of use Location of storage Both

Building: _____ Room: _____

Street: _____

City: _____ Province: _____ Postal code: _____

Location of use Location of storage Both

Additional locations appended as: _____

continued on next page

SECTION C – NUCLEAR SUBSTANCES AND CLASS II PRESCRIBED EQUIPMENT

C.1 Class II prescribed equipment

A Isotope production accelerators – for each accelerator provide the following information.

Manufacturer: _____
 Model name and number: _____
 Types of beam and accelerator's maximum energy and current: _____
 CNSC certificate No.: _____

Information on additional accelerators appended as: _____

B Accelerator targets – for each accelerator target provide the following information.

Target chamber				Maximum beam current (µA)	Bombardment time (min)	Maximum EOB activity (GBq)
Part No.	Nuclear reaction	Product	Material			

Additional accelerator targets appended as: _____

C.2 Nuclear substances

For each radioisotope produced using the accelerator, list the maximum quantity that will be possessed under the licence at any time.

Name or symbol and mass number	Maximum total quantity in possession	Maximum total activity (produced in one calendar year)

Additional radioisotopes appended as: _____

List any sealed sources (e.g., check sources) that are to be encompassed by the licence.

Manufacturer	Model number	Name or symbol mass number	Maximum activity (per source)	Serial number (if available)

Additional sealed sources appended as: _____

continued on next page

SECTION D – RADIATION PROTECTION PROGRAM

D.1 Radiation safety officer (RSO)

Dr. Mr. Mrs. Ms.

Name: _____
Surname Given name Middle name

Title: _____ Telephone: _____

Email: _____ Facsimile: _____

Mailing address (if different from A.3):

Street: _____

City: _____ Province: _____ Postal code: _____

CNSC RSO certificate number: _____

D.2 Radiation safety officer job description

Append the job description of the RSO, which should include the time and resources allotted for the RSO to carry out the duties of the position.

Appended as: _____

D.3 Radiation safety officer acknowledgement

I am willing to be designated as the RSO and accept the duties of the RSO job description appended to this licence application.

Date: ____/____/____ Signature: _____
YYYY MM DD

D.4 Organizational management structure

Append a description of the management and organizational structures that relate to radiation safety. Include the name, position title, function, responsibilities and authority of each person. Attach a copy of the organizational chart.

Appended as: _____

D.5 Radiation Safety Committee terms of reference

Append the terms of reference of the applicant's Radiation Safety Committee or its equivalent.

Appended as: _____

SECTION E – RADIATION SAFETY POLICIES AND PROCEDURES

E.1 ALARA (as low as reasonably achievable)

Append the applicant's ALARA policy and procedures.

Appended as: _____

E.2 Qualifications and duties of workers

Append a list of all anticipated job categories of workers who will be working with the accelerator or nuclear substances encompassed by the licence. Include a description of the roles and responsibilities of each category as well as a description of the duties and qualification requirements for those categories of workers involved in accelerator operations or who work with nuclear substances. In addition, include an overview of the proposed in-house training program.

Appended as: _____

E.3 Worker radiation safety training

Append a description of the proposed radiation safety training program for workers.

Appended as: _____

continued on next page

E.4	Designation of nuclear energy workers (NEWs)
	Append the proposed policy and procedures to designate workers as NEWs and notify them of their classification. Appended as: _____
E.5	Personal dose monitoring
	Append the procedures for monitoring radiation exposure. Appended as: _____
E.6	Action levels (if applicable)
	Append a description of any proposed action levels and the actions to be taken if they are reached. If no action levels are proposed, append a description of the proposed measures to evaluate the effectiveness of the radiation protection program. Appended as: _____
E.7	Radiation detection instruments
	Append the types, and models of radiation detection instruments that will be used and the procedures for calibrating and using these instruments. Appended as: _____
E.8	Radioactive contamination control
	Append the policy and procedures for monitoring the workplace for evidence of radioactive contamination. Appended as: _____
E.9	Rooms – posting
	Append the policy for the posting of rooms where accelerators and nuclear substances are used or stored or both. Appended as: _____
E.10	Access control and security
	Append the policy for restricting access to the facility and nuclear substances to authorized persons only. Appended as: _____
E.11	Inventory control and records
	Append the policy and procedures for inventory control. Appended as: _____
E.12	Receipt of packages
	Append the procedures for receiving shipments of nuclear substances. Appended as: _____
E.13	Packaging and transporting nuclear substances
	Append the procedures for packaging and transporting nuclear substances. Appended as: _____
E.14	Leak testing of sealed sources (if applicable)
	Append the procedures for leak-testing of sealed radioactive sources. Appended as: _____

continued on next page

E.15 Management of radioactive waste and other hazardous waste**Radioactive waste**

List all radioactive waste or activated components to be handled, transferred or disposed of.

Name	Description	Activity	Form	Weigh or volume or both

Additional waste and activated components appended as: _____

Append the procedures for handling, transferring and disposing of waste containing nuclear substances.

Appended as: _____

Other hazardous waste

List all non-radioactive hazardous waste to be handled, transferred or disposed of.

Name	Quantity	Form	Nature of hazard	Origin

Append the procedures for handling, transferring and disposing of non-nuclear hazardous waste.

Appended as: _____

E.16 Emergency procedures

Append the methods, procedures and equipment that will be used during an emergency. Include the proposed instructions for dealing with emergencies such as fires, spills, and radiation exposure accidents in which nuclear substances or other hazardous materials may be involved.

Appended as: _____

E.17 Reporting requirements

Append the policies and procedures for ensuring reportable occurrences are reported to the CNSC within the required time period.

Appended as: _____

E.18 Record-keeping requirements

Append the policy and procedures for ensuring that required records will be maintained and available for inspection.

Appended as: _____

E.19 Quality assurance

Append the organization's QA program as it applies to radiation safety at the facility.

Appended as: _____

E.20 Decommissioning

Append the preliminary decommissioning plan.

Appended as: _____

continued on next page

SECTION F – RENEWALS

F.1 Radiation dose summary

Append a summary of the most recent annual radiation dosimetry results, including the name of the dosimetry service used. Provide a separate list of the names of individuals whose recorded doses exceed any limit.

Appended as: _____

F.2 Sealed sources acquired, transferred or disposed of

Append a list giving details of all sealed sources acquired, purchased, transferred, or disposed of during the previous licensing period.

Appended as: _____

F.3 Nuclear substances inventory

Append the inventory of all nuclear substances currently in the applicant's possession.

Appended as: _____

F.4 Incidents

Append a brief description of any incident or occurrence that required investigation in the previous licensing period and, if needed, any remedial actions.

Appended as: _____

F.5 Occupancy review

Append an update of the purpose and occupancy of the areas surrounding the accelerator. Highlight any changes from the original facility design.

Appended as: _____

F.6 Class II prescribed equipment operating workload

Provide a summary of the accelerator workload.

Reaction	Product	Typical EOB activity (GBq)	No. of targets used	Total operation (hours)	Total activity (GBq)

F.7 Radiation survey

Append the results of the most recent photon and neutron radiation surveys of the accelerator facility.

Appended as: _____

continued on next page

SECTION G – FACILITY DESIGN

G.1 Information program

Append a description of the program to inform persons living in the vicinity of the site of the general nature and characteristics of the Class II nuclear facility.

Appended as: _____

G.2 Accelerator facility plans and drawings

Append the plans and elevation drawings of the accelerator facility, including all of the information listed in part G.2 of the guide.

Appended as: _____

G.3 Description of targets

Append the design drawings and technical specifications for the targets to be used and provide information demonstrating that the targets will not fail in a way that would result in the release of radioactivity.

Appended as: _____

G.4 Design of processing facilities

If applicable, append the plans and design of the radioisotope processing facilities including all of the information listed in part G.4 of the guide. Also append a completed copy of the *Design Assessment Form for Nuclear Substance Laboratories and Nuclear Medicine Rooms* from the CNSC document GD-52, *Design Guide for Nuclear Substance Laboratories and Nuclear Medicine Rooms*, detailing the design of the radiochemical processing facilities.

Appended as: _____

G.5 Description of radiochemical hot cells / processing stations

Append a description of the hot cells or other shield containment used for hot chemistry.

Appended as: _____

G.6 Classification of adjacent areas

Append a description of the purpose of the areas adjacent to the accelerator and processing facilities, including classification and occupancy factor.

Appended as: _____

G.7 Accelerator workload

Provide a summary of the anticipated accelerator workload.

Reaction	Type of isotope	Product	Typical EOB activity (GBq)	No. of targets used	Total operation (hours)	Total activity (GBq)

G.8 Isotope pathway

Append the description of the isotope product pathway during its lifecycle at the facility.

Appended as: _____

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G.9	Dose rates and annual dose calculations for adjacent areas
	Append detailed calculations of the maximum dose rates and annual doses expected in each of the adjacent areas listed in subsection G.6. Appended as: _____
G.10	Other design considerations
	Append a description of the proposed means of verifying the shielding density and composition. Appended as: _____
SECTION H – SAFETY SYSTEM REQUIREMENTS	
H.1	Door interlocks
	Append a description of the door interlocks and their functions. Appended as: _____
H.2	Warning lights
	Append a description of the warning lights and indicate their locations on the facility plans. Appended as: _____
H.3	Pre-irradiation alarms
	Append a description of the pre-irradiation alarms and identify their locations on the facility plans. Appended as: _____
H.4	Emergency off buttons
	Append a description of the function of the emergency stop devices and identify their locations on the facility plans. Appended as: _____
H.5	Radioisotope release monitoring and containment
	Append a description of the proposed devices to monitor and contain releases of radioactive material in the ventilation system. Appended as: _____
H.6	Radiation monitors
	Append a description of the design and function of all area radiation monitors incorporated into the facility and identify their locations on the facility plans. Appended as: _____
H.7	Ventilation monitoring
	Append a description of the ventilation monitoring system which will verify the ventilation system is functioning properly. Appended as: _____
H.8	Personnel contamination monitoring system
	Append a description of the contamination monitoring system. Appended as: _____

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SECTION I – CLASS II NUCLEAR FACILITY OPERATING LICENCE FOR THE PURPOSE OF COMMISSIONING

I.1 Accelerator commissioning plan

Append the accelerator commissioning plan.

Appended as: _____

I.2 Commissioning of radiochemical processing facilities

Append the commissioning plan for the radiochemical processing facilities.

Appended as: _____

SECTION J – CLASS II NUCLEAR FACILITY OPERATION LICENCE

J.1 Accelerator safety system test results

Append a summary of the results of the safety system commissioning tests.

Appended as: _____

J.2 Accelerator radiation survey

Append a copy of the radiation survey for the accelerator facility.

Appended as: _____

J.3 Processing facility commissioning results

Append a summary of the results of the commissioning tests for the radiochemical processing facilities.

Appended as: _____

J.4 Accelerator operating procedures

Append the facility operating procedures for the accelerator.

Appended as: _____

J.5 Processing procedures

Append the procedures for isotope processing.

Appended as: _____

SECTION K – DECOMMISSIONING

K.1 Overview of decommissioning plan

Append a brief overview of decommissioning activities, including the scope and schedule and planned end state of the facility once decommissioning is complete.

Appended as: _____

K.2 Personnel qualifications and training

Append a brief description of the proposed responsibilities, qualifications and training for persons supervising and participating in decommissioning work.

Appended as: _____

K.3 Estimation of types, activities and radiation doses from nuclear substances

Append a description of the nature, type and activity of any radioactive nuclear substances or contamination at the nuclear facility. Also provide an estimate of the anticipated maximum dose rates that persons may be exposed to and an estimate of the maximum dose that a person may receive as a result of decommissioning.

Appended as: _____

continued on next page

K.4 Disposal of Class II prescribed equipment, nuclear substances and hazardous materials

Append a description of the proposed methods of disposal for the accelerator, nuclear substances and any other hazardous materials at the facility. Indicate whether any of this material will be released into the environment and provide an estimate of the maximum quantities and concentrations that may be released.

Appended as: _____

SECTION L – LEGAL SIGNING AUTHORITY

L.1 Signing authority

Dr. Mr. Mrs. Ms.

Name: _____
Surname Given name Middle name

Title: _____ Telephone: _____

Email: _____ Facsimile: _____

Address: _____

The representative for the applicant signs the application.

I _____ (name of Signing Authority), accept the designation of Signing Authority and certify that all information submitted is true and correct to the best of my knowledge. I understand that all statements and representations made in this application and on supplementary documentation are binding on the applicant.

Signature: _____ Date: _____ / _____ / _____
YYYY MM DD

L.2 Applicant authority

Dr. Mr. Mrs. Ms.

Name: _____
Surname Given name Middle name

Title: _____ Telephone: _____

Email: _____ Facsimile: _____

Address: _____

The representative for the applicant signs the application.

I _____ (name of Applicant Authority), have the authority to sign the application and to designate persons for the purpose of Section 15 of the *General Nuclear Safety and Control Regulations*. I designate the person named in L.2 of this application as the person who has the authority to act in dealings with the Commission and who is responsible for the management and control of the licensed activity and nuclear substances. I certify that all statements and representations made in the application and on supplementary pages are true and correct to the best of my knowledge and are binding to the applicant.

Signature: _____ Date: _____ / _____ / _____
YYYY MM DD

Mail the completed application form, together with all relevant documentation to:

Canadian Nuclear Safety Commission
Directorate of Nuclear Substance Regulation
P.O. Box 1046, Station B
280 Slater Street
Ottawa ON, K1P 5S9
Fax: 613-995-5086

The application form, together with all relevant documentation may also be submitted electronically.

Email: forms-formulaires@cnsccn.gc.ca