

February 21, 2025

Canadian Nuclear Safety Commission (CNSC)  
280 Slater Street  
P.O. Box 1046, Station B  
Ottawa, Ontario, K1P 5S9

**Subject: Amendment to Application for Renewal of Nordion Operating License NSPFOL-11A.01/2025**

Dear Sir/Madame,

This submission is an amendment to Nordion's application for renewal of Nordion's Class 1B Nuclear Substance Processing Facility Operating License, NSPFOL-11A.01/2025, initially submitted on May 15, 2024.<sup>1</sup>

This amendment to our May 15, 2024 renewal submission is a revision to the table of supporting documents listed in Appendix A and referenced in Attachment 1. This revision is being made to focus the supporting documentation on those documents key to our licensing basis, as defined in our current Licence Condition Handbook and has been made in consultation with CNSC staff.

The revised Appendix A and Attachment 1 are enclosed.

The information contained in Appendix B, Attachment 2, and Attachment 3 of our May 15, 2024 renewal submission remains unchanged. These have been included with this amendment for completeness of the record.

Should you have any questions, please do not hesitate to contact me at (613) 592-3400 extension 2539, or e-mail at [richard.wassenaar@nordion.com](mailto:richard.wassenaar@nordion.com).

Sincerely,

Richard Wassenaar  
Director, Regulatory & EHS

cc: Andrew McAllister, Michael Davey and Jason Duhaime – CNSC  
Sabrina Sng - Nordion

Enclosure:

- Appendix A: Revised List of Supporting Documentation
- Appendix B: Justification for 25-year Licence Period
- Attachment 1: Revised Information Required for the Renewal of the Operating Licence
- Attachment 2: Summary of Facility and Program Improvements Since 2015
- Attachment 3: Supplementary Report to Support License Renewal

Reference:

[1] E-mail from S. Sng, Nordion, to the Commission Registry, CNSC, "Application for Renewal of Nordion's Operating License NSPFOL-11A.01/2025", dated May 15, 2024

447 March Road

Ottawa, ON Canada K2K 1X8

613-592-3400 | [nordion.com](http://nordion.com)

## Attachment 1: Revised Information Required for the Renewal of the Operating Licence

	REQUIREMENTS	SCA	Response
<b>General Nuclear Safety and Control Regulations</b>			
3(1)	An application for a licence shall contain the following information:		
3(1)(a)	the applicant's name and business address;		<p>Nordion (Canada) Inc. 447 March Road Ottawa, ON K2K 1X8</p> <p>Applicant authority: Riaz Bandali President (613) 592-3400 ext. 2589 riaz.bandali@nordion.com</p>

	REQUIREMENTS	SCA	Response
3(1)(b)	the activity to be licensed and its purpose;		<ul style="list-style-type: none"> <li>Nordion (Canada) Inc. is a nuclear processing facility situated at the location named in Section 3(1)(a) of this table under the <i>General Nuclear Safety and Control Regulations</i> and comprising the facilities described in the “Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12) and “Final Safety Analysis Report for Cobalt Pools”, IN/SR 2638 Co60 (5).</li> <li>Nordion (Canada) Inc. is applying for renewal of the Facility Operating Licence for a period of 25 years, from November 1, 2025 to October 31, 2050.</li> <li>Activities to be licenced: <ul style="list-style-type: none"> <li>a) Operate a nuclear substance processing facility at the location named in Section 3(1)(a) of this table under the <i>General Nuclear Safety and Control Regulations</i>, for the purpose of processing and manufacturing nuclear substances and sealed sources used in health sciences, health care, and industrial applications.</li> <li>b) Possess, transfer, use, process, import, manage, store, and dispose the nuclear substances that are required for, associated with or arise from the activities described in a);</li> <li>c) Possess, transfer, use, import, and service prescribed equipment that is required for, associated with, or arises from the activities described in a);</li> <li>d) Possess, transfer, use, service, or import prescribed equipment from clients;</li> <li>e) Possess and use prescribed information that is required for, associated with, or arises from the activities described in a).</li> </ul> </li> </ul>
3(1)(c)	the name, maximum quantity and form of any nuclear substance to be encompassed by the licence;	SA	<ul style="list-style-type: none"> <li><math>&gt;1 \times 10^{15}</math> Bq per calendar year Co-60 in solid, liquid or gaseous form.</li> <li>Various other radioisotopes atomic numbers between 1 to 103 in quantities of <math>&lt;1 \times 10^{15}</math> Bq per calendar year in solid, liquid or gaseous form that arise from the Nordion's activities.</li> </ul>

	REQUIREMENTS	SCA	Response
3(1)(d)	a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence;	SA	<ul style="list-style-type: none"> <li>• “Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12) and “Final Safety Analysis Report for Cobalt Pools”, IN/SR 2638 Co60 (5).</li> <li>• SE-LIC-018, “Facility Description”</li> <li>• Gammacell 220 (GC-220) Irradiator Serial Number 59 used for dosimeter calibrations and materials irradiation, containing Co-60 sealed sources.</li> <li>• Any Gammacell 220 Irradiators for dosimeter calibrations and materials irradiation.</li> <li>• GE Homeland Protection Mobile Trace electron capture detector Serial Number 160783 used for explosives detection, containing a Ni-63 source.</li> <li>• Security sensitive information including security response plans and procedures and CNSC security correspondence.</li> </ul>

	REQUIREMENTS	SCA	Response
3(1)(e)	the proposed measures to ensure compliance with the <i>Radiation Protection Regulations</i> and the <i>Nuclear Security Regulations</i> ;	RP/NS	<p><i>Radiation Protection Regulations:</i></p> <ul style="list-style-type: none"> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11) <ul style="list-style-type: none"> <li>• organization and administration for RP Refer to organizational charts</li> <li>• RP training and qualification Refer to Section 4(a)(ii) of this table under <i>Radiation Protection Regulations</i></li> <li>• classification of areas and local rules “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11) Section 4.4</li> <li>• radiation exposure and dose control “Keeping Radiation Exposures and Doses “As Low as Reasonably Achievable (ALARA)””, SE-RP-002 (8)</li> <li>• RP equipment and instrumentation Refer to Section 3(1)(i) of this table under <i>Nuclear Substances and Radiation Devices Regulations</i></li> <li>• radiation monitoring and dose assessment “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11) Sections 5.6, 5.7, and 6</li> <li>• contamination control “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11) Section 7</li> <li>• planning for unusual situations Refer to Section 4(a)(iv) of this table under <i>Radiation Protection Regulations</i></li> </ul> </li> </ul>

	REQUIREMENTS	SCA	Response
3(1)(e), continued			<ul style="list-style-type: none"> <li>RP program oversight EHS Committee - “Nordion Environmental, Health &amp; Safety Responsibilities and Committees”, CPM-6-19 (21) RP program oversight is provided by the EHS Committee. In addition, an EHS regulatory Compliance audit is performed at least once every 3 years by an external 3<sup>rd</sup> party. This audit is conducted to review all aspects of EHS, including Radiation Protection and is a requirement of Nordion’s EHS Management Systems and Nordion’s Board of Directors.</li> </ul> <p><i>Nuclear Security Regulations:</i></p> <ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), section 5.4.10</li> <li>“Physical Security Threat Assessment”. Updated annually and available to CNSC Security Division review on site at request, as per normal protocol. (Refer to Section 6(l) of this table under Class I Nuclear Facilities Regulations)</li> </ul>
3(1)(f)	any proposed action levels for the purpose of section 6 of the <i>Radiation Protection Regulations</i> ;	RP	<ul style="list-style-type: none"> <li>Sections 5.6, 5.7, 9.5 and 10 of the “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), previously submitted April 29<sup>th</sup>, 2024 (current version under review by CNSC)</li> <li>“Keeping Radiation Exposures and Doses “As Low as Reasonably Achievable (ALARA)””, SE-RP-002 (8), previously submitted April 29<sup>th</sup>, 2024 (current version under review by CNSC)</li> </ul>
3(1)(g)	the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment or prescribed information;	NS	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), section 5.4.10</li> <li>“Physical Security Threat Assessment”. Updated annually and available to CNSC Security Division review on site at request, as per normal protocol.</li> </ul>
3(1)(h)	the proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information;	NS	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), section 5.4.10</li> <li>“Physical Security Threat Assessment”. Updated annually and available to CNSC Security Division review on site at request, as per normal protocol.</li> </ul>
3(1)(i)	a description and the results of any test, analysis or calculation performed to substantiate the information included in the application;	SA	<ul style="list-style-type: none"> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12), Section 9, and “Final Safety Analysis Report for Cobalt Pools”, IN/SR 2638 Co60 (5).</li> </ul>

	<b>REQUIREMENTS</b>	<b>SCA</b>	<b>Response</b>
3(1)(j)	the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste;	WM	<ul style="list-style-type: none"> <li>• “Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12) “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 13</li> <li>• “Management System for Safety”, SE-LIC-001 (17)</li> </ul>
3(1)(k)	the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the Regulations made under the Act, including the internal allocation of functions, responsibilities and authority;	MS	<ul style="list-style-type: none"> <li>• “Management System for Safety”, SE-LIC-001 (17)</li> </ul>
3(1)(l)	a description of any proposed financial guarantee relating to the activity to be licensed; and	OMRI	<ul style="list-style-type: none"> <li>• Nordion has in place a financial guarantee that is acceptable to the CNSC.</li> </ul>
3(1)(m)	any other information required by the Act or the Regulations made under the Act for the activity to be licensed and the nuclear substance, nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence.	OMRI	As requested.

	REQUIREMENTS	SCA	Response
3(1.1)	The Commission or a designated officer authorized under paragraph 37(2)(c) of the Act, may require any other information that is necessary to enable the Commission or the designated officer to determine whether the applicant (a) is qualified to carry on the activity to be licensed; or (b) will, in carrying on that activity, 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.	OMRI	As requested.
3(2)	Subsection (1) does not apply in respect of an application for a licence to import or export for which the information requirements are prescribed by the <i>Nuclear Non-Proliferation Import and Export Control Regulations</i> , or in respect of an application for a licence to transport while in transit for which the information requirements are prescribed by the <i>Packaging and Transport of Nuclear Substances Regulations</i> .	N/A	Not applicable.
5	An application for the renewal of a licence shall contain:		
5(a)	the information required to be contained in an application for that licence by the applicable Regulations made under the Act; and		



	REQUIREMENTS	SCA	Response
5(b)	a statement identifying the changes in the information that was previously submitted.	MS	All programs and procedures have been revised .
7	An application for a licence or for the renewal, suspension in whole or in part, amendment, revocation or replacement of a licence may incorporate by reference any information that is included in a valid, expired or revoked licence.	N/A	See individual sections, as applicable.
15	<p>Every applicant for a licence and every licensee shall notify the Commission of:</p> <p>(a) the persons who have authority to act for them in their dealings with the Commission;</p> <p>(b) the names and position titles of the persons who are responsible for the management and control of the licensed activity and the nuclear substance, nuclear facility, prescribed equipment or prescribed information encompassed by the licence; and</p> <p>(c) any change in the information referred to in paragraphs (a) and (b), within 15 days after the change occurs.</p>	MS	<p>Applicant authority:</p> <p>Riaz Bandali President (613) 592-3400 ext. 2589 <a href="mailto:riaz.bandali@nordion.com">riaz.bandali@nordion.com</a></p> <p>Signing authorities:</p> <p>Richard Wassenaar (613) 592-3400 ext. 2539 <a href="mailto:richard.wassenaar@nordion.com">richard.wassenaar@nordion.com</a></p> <p>Sabrina Sng (613) 592-3400 ext. 2286 <a href="mailto:sabrina.sng@nordion.com">sabrina.sng@nordion.com</a></p>
<b>Class I Nuclear Facilities Regulations</b>			
3	An application for a licence in respect of a Class I nuclear facility, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the <i>General Nuclear Safety and Control Regulations</i> :		

	REQUIREMENTS	SCA	Response
3(a)	a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone;	SA/PD	<ul style="list-style-type: none"> <li>Refer to Section 3(1)(d) of this table under the <i>General Nuclear Safety and Control Regulations</i></li> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12) and “Final Safety Analysis Report for Cobalt Pools”, IN/SR 2638 Co60 (5).</li> </ul>
3(b)	plans showing the location, perimeter, areas, structures, and systems of the nuclear facility;	PD	<ul style="list-style-type: none"> <li>Refer to Section 3(1)(d) of this table under the <i>General Nuclear Safety and Control Regulations</i></li> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12):</li> <li>“Final Safety Analysis Report for Cobalt Pools”, IS/SR 2638 Co60 (4)</li> <li>SE-LIC-018 (9), “Facility Description”</li> </ul>
3(c)	evidence that the applicant is the owner of the site or has authority from the owner of the site to carry on the activity to be licensed;		<ul style="list-style-type: none"> <li>Refer to attach City of Ottawa Property Tax 2024 – Interim bill</li> </ul>
3(d)	the proposed quality assurance program for the activity to be licensed;	MS	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17)</li> </ul>

	REQUIREMENTS	SCA	Response
3(e)	the name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on;	WM	<ul style="list-style-type: none"> <li>Chemical inventory available upon request</li> <li>SDS sheets for all substances available upon request</li> </ul>
3(f)	the proposed worker health and safety policies and procedures;	CHS	<ul style="list-style-type: none"> <li>"Management System for Safety", SE-LIC-001 (17)</li> <li>"Fire Safety Plan", SE-ERP-001 (8)</li> <li>"Radiation Protection Manual – Ottawa Site", SE-RP-001 (11)</li> <li>"Keeping Radiation Exposures and Doses "As Low as Reasonably Achievable (ALARA)""", SE-RP-002 (8)</li> </ul>
3(g)	the proposed environmental protection policies and procedures;	EP	<ul style="list-style-type: none"> <li>"Management System for Safety", SE-LIC-001 (17)</li> <li>"Nordion Environmental Protection Program", SE-ENV-015 (8)</li> <li>"Environmental Management System Manual", SE-ENV-001 (12)</li> </ul>
3(h)	the proposed effluent and environmental monitoring programs;	EP	<ul style="list-style-type: none"> <li>"Nordion Environmental Protection Program", SE-ENV-015 (8)</li> <li>"Environmental Management System Manual", SE-ENV-001 (12)</li> <li>"Radiation Protection Manual - Ottawa Site", SE-RP-001 (11)</li> <li></li> </ul>
3(i)	if the application is in respect of a nuclear facility referred to in paragraph 2(b) of the <i>Nuclear Security Regulations</i> , the information required by section 3 of those Regulations;	N/A	Not applicable.
3(j)	the proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed; and	OMRI	<ul style="list-style-type: none"> <li>"Nordion Public Information Program", SE-LIC-010 (15)</li> </ul>

	REQUIREMENTS	SCA	Response
3(k)	the proposed plan for the decommissioning of the nuclear facility or of the site.	WM	<ul style="list-style-type: none"> <li>“Preliminary Decommissioning Plan for Class 1B Facility (KOB)”, SE-LIC-009 (6)</li> </ul>
6	An application for a licence to operate a Class I nuclear facility shall contain the following information in addition to the information required by section 3 of the <i>Class I Nuclear Facilities Regulations</i> :		
6(a)	a description of the structures at the nuclear facility, including their design and their design operating conditions;	PD	<ul style="list-style-type: none"> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> </ul>
6(b)	a description of the systems and equipment at the nuclear facility, including their design and their design operating conditions;	PD	<ul style="list-style-type: none"> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> </ul>
6(c)	a final safety analysis report demonstrating the adequacy of the design of the nuclear facility;	SA	<ul style="list-style-type: none"> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> </ul>
6(d)	the proposed measures, policies, methods, and procedures for operating and maintaining the nuclear facility;	OP/FS/EM/M S	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17)</li> <li>“EHS Regulatory Reporting and Notifications”, SE-EHS-009 (11)</li> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11)</li> <li>“Fire Protection Program – Nordion Ottawa Site”, SE-EHS-007 (7)</li> <li>“Facilities Maintenance Master Plan”, R-Master (15)</li> <li>“Calibration Master Plan”, CP-001 (1)</li> <li>Schedules for performing all routine maintenance available upon request</li> <li>“Site Emergency Response Plan”, SE-ERP-002 (12),</li> </ul>

	REQUIREMENTS	SCA	Response
6(e)	the proposed procedures for handling, storing, loading, and transporting nuclear substances and hazardous substances;	WM/PT/OP	<ul style="list-style-type: none"> <li>• “Management System for Safety”, SE-LIC-001 (17)</li> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11)</li> <li>• “Transport of Radioactive Material Program”, SE-OP-036 (6)</li> <li>• “Receiving Radioactive Material”, SE-OP-015 (7)</li> <li>• Shipping Radioactive Material”, SE-OP-014 (11)</li> <li>• “Sealed Source Reporting”, SE-OP-079 (24),</li> </ul>
6(f)	the proposed measures to facilitate Canada’s compliance with any applicable safeguards agreement;	SG	<ul style="list-style-type: none"> <li>• “Safeguards Program”, SE-LIC-016 (14)</li> </ul>
6(g)	the proposed commissioning program for the systems and equipment that will be used at the nuclear facility;	PD	<ul style="list-style-type: none"> <li>• “Management System for Safety”, SE-LIC-001 (17)</li> </ul>
6(h)	the effects on the environment and the health and safety of persons that may result from the operation and decommissioning of the nuclear facility, and the measures that will be taken to prevent or mitigate those effects;	SA/EP	<ul style="list-style-type: none"> <li>• “Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> <li>• “Nordion Environmental Protection Program”, SE-ENV-015 (8),</li> <li>• “Environmental Management System Manual”, SE-ENV-001 (12)</li> <li>• “Preliminary Decommissioning Plan for Class 1B Facility (KOB)”, SE-LIC-009 (6)</li> </ul>
6(i)	the proposed location of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics;	EP/WM	<ul style="list-style-type: none"> <li>• “Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11)</li> <li>• “Nordion Class 1B Facility Derived Release Limits”, REP-EHS-009 (1)</li> </ul>
6(j)	the proposed measures to control releases of nuclear substances and hazardous substances into the environment;	EP/WM	<ul style="list-style-type: none"> <li>• “Nordion Environmental Protection Program”, SE-ENV-015 (8)</li> <li>• “Environmental Management System Manual”, SE-ENV-001 (12)</li> <li>• “Radiation Protection Manual - Ottawa Site”, SE-RP-001 (11)</li> </ul>

	<b>REQUIREMENTS</b>	<b>SCA</b>	<b>Response</b>
6(k)	<p>the proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of national security, including measures to:</p> <ul style="list-style-type: none"> <li>(i) assist off-site authorities in planning and preparing to limit the effects of an accidental release,</li> <li>(ii) notify off-site authorities of an accidental release or the imminence of an accidental release,</li> <li>(iii) report information to off-site authorities during and after an accidental release,</li> <li>(iv) assist off-site authorities in dealing with the effects of an accidental release, and</li> <li>(v) test the implementation of the measures to prevent or mitigate the effects of an accidental release;</li> </ul>	EM	<ul style="list-style-type: none"> <li>• Nordion periodically meets with the local Fire, Paramedics, Police, and Ottawa Hospitals to review Nordion emergency management protocols, provide site familiarization, and to review roles of off-site authorities during on-site emergencies.</li> <li>• “Site Emergency Response Plan”, SE-ERP-002 (12)</li> <li>• “Radiation Emergency Response Plan”, SE-ERP-011 (7)</li> <li>• “Fire Safety Plan”, SE-ERP-001 (8)</li> </ul>
6(l)	<p>the proposed measures to prevent acts of sabotage or attempted sabotage at the nuclear facility, including measures to alert the licensee to such acts;</p>	NS	<ul style="list-style-type: none"> <li>• “Management System for Safety”, SE-LIC-001 (17), section 5.4.10</li> <li>• “Physical Security Threat Assessment”. Updated annually and available to CNSC Security Division review on site at request, as per normal protocol.</li> </ul>

	REQUIREMENTS	SCA	Response
6(m)	the proposed responsibilities of and qualification requirements and training program for workers, including the procedures for the requalification of workers; and	HP	<ul style="list-style-type: none"> <li>• Job descriptions are available for all Active Area Operations employees.</li> <li>• For professional and administrative support staff, Nordion uses a system of job families to describe job responsibilities and the minimum education requirements. General responsibilities for EHS professionals are described in the Quality, Regulatory Affairs/EHS job family description.</li> <li>• "Management System for Safety", SE-LIC-001 (17)</li> <li>• "Systematic Approach to Training System", SE-TRN-006 (9)</li> <li>• Departmental training programs define the initial and continuing training requirements. These are available upon request.</li> </ul>
6(n)	the results that have been achieved in implementing the program for recruiting, training and qualifying workers in respect of the operation and maintenance of the nuclear facility.	HP	<ul style="list-style-type: none"> <li>• There are currently, approximately 128 Nuclear Energy Workers (NEWs) working in the licensed facility. In the past year, EHS Compliance training has been provided to meet the training frequency required.</li> <li>• Training is assigned and tracked electronically in an Electronic Quality Management System (EQMS) that incorporates training management.</li> </ul>
<b>Radiation Protection Regulations</b>			
4	Every licensee shall implement a radiation protection program and shall, as part of that program,		
4(a)	keep the amount of exposure to radon progeny and the effective dose and equivalent dose received by and committed to persons as low as is reasonably achievable, social and economic factors being taken into account, through the implementation of	RP	<ul style="list-style-type: none"> <li>• Radon progeny is not applicable to Nordion</li> </ul>
4(a)(i)	management control over work practices,	RP	<ul style="list-style-type: none"> <li>• "Keeping Radiation Exposures and Doses "As Low as Reasonably Achievable (ALARA)", SE-RP-002 (8)</li> <li>• "Management System for Safety", SE-LIC-001 (17)</li> <li>• "Radiation Protection Manual - Ottawa Site", SE-RP-001 (11)</li> </ul>

	REQUIREMENTS	SCA	Response
4(a)(ii)	personnel qualification and training,	RP	<ul style="list-style-type: none"> <li>• "Keeping Radiation Exposures and Doses "As Low as Reasonably Achievable (ALARA)""", SE-RP-002 (8)</li> <li>• "Management System for Safety", SE-LIC-001 (17)</li> <li>• "Systematic Approach to Training System", SE-TRN-006 (9)</li> </ul>
4(a)(iii)	control of occupational and public exposure to radiation, and	RP	<ul style="list-style-type: none"> <li>• "Keeping Radiation Exposures and Doses "As Low as Reasonably Achievable (ALARA)""", SE-RP-002 (8)</li> <li>• "Radiation Protection Manual – Ottawa Site", SE-RP-001 (11)</li> </ul>
4(a)(iv)	planning for unusual situations; and	RP	<ul style="list-style-type: none"> <li>• "Keeping Radiation Exposures and Doses "As Low as Reasonably Achievable (ALARA)""", SE-RP-002 (8)</li> <li>• "Safety Analysis Reports", CPM-6-20 (18)</li> <li>• "Site Emergency Response Plan", SE-ERP-002 (12),</li> <li>• "EHS Committee Approved Activity Limits for Facilities", SE-LIC-007 (23)</li> <li>• "Management System for Safety", SE-LIC-001 (17)</li> </ul>
4(b)	ascertain the quantity and concentration of any nuclear substance released as a result of the licensed activity (i) by direct measurement as a result of monitoring, or (ii) if the time and resources required for direct measurement as a result of monitoring outweigh the usefulness of ascertaining the quantity and concentration using that method, by estimating them.	RP	<ul style="list-style-type: none"> <li>• "Nordion Environmental Protection Program", SE-ENV-015 (8)</li> <li>• "Environmental Management System Manual", SE-ENV-001 (12)</li> <li>• "Radiation Protection Manual – Ottawa Site", SE-RP-001 (11)</li> </ul>



	REQUIREMENTS	SCA	Response
5(1)	For the purpose of keeping a record of doses of radiation in accordance with section 27 of the Act, every licensee shall ascertain and record the magnitude of exposure to radon progeny of each person referred to in that section, as well as the effective dose and equivalent dose received by and committed to that person.	RP	<ul style="list-style-type: none"> <li>Radon progeny is not applicable to Nordion</li> </ul>
5(2)	<p>A licensee shall ascertain the magnitude of exposure to radon progeny and the effective dose and equivalent dose</p> <p>(a) by direct measurement as a result of monitoring; or</p> <p>(b) if the time and resources required for direct measurement as a result of monitoring outweigh the usefulness of ascertaining the amount of exposure and doses using that method, by estimating them.</p>	RP	<ul style="list-style-type: none"> <li>Radon progeny is not applicable to Nordion</li> </ul>
7(1)	Every licensee shall inform each nuclear energy worker, in writing,		
7(1)(a)	that he or she is a nuclear energy worker;	RP	<ul style="list-style-type: none"> <li>"Radiation Protection Manual – Ottawa Site", SE-RP-001 (11), Section 5.1 and NEW Acknowledgement forms Appendix H</li> <li>NEW acknowledgement forms, available upon request</li> </ul>
7(1)(b)	of the risks associated with radiation to which the worker may be exposed in the course of his or her work, including the risks associated with the exposure of embryos and fetuses to radiation;	RP	<ul style="list-style-type: none"> <li>"Radiation Protection Manual – Ottawa Site", SE-RP-001 (11), Sections 5.6 and 5.7, and Appendix B</li> <li>"Radiation Protection Manual – Ottawa Site", SE-RP-001 (11), Sections 5.1 and NEW Acknowledgement forms Appendix H</li> </ul>

	<b>REQUIREMENTS</b>	<b>SCA</b>	<b>Response</b>
7(1)(c)	of the applicable effective dose limits and equivalent dose limits prescribed by sections 13, 14 and 15; and	RP	<ul style="list-style-type: none"> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 5.6</li> <li>• Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 5.1 and NEW Acknowledgement forms Appendix H</li> </ul>
13(1)	Every licensee shall ensure that the effective dose received by and committed to a person described in column 1 of an item of the table to this subsection, during the period set out in column 2 of that item, does not exceed the effective dose set out in column 3 of that item.	RP	<ul style="list-style-type: none"> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Sections 5.6 and 5.7</li> <li>• “Keeping Radiation Exposures and Doses “As Low as Reasonably Achievable (ALARA)”, SE-RP-002 (8)</li> </ul>
14(1)	Every licensee shall ensure that the equivalent dose received by and committed to an organ or tissue set out in column 1 of an item of the table to this subsection, of a person described in column 2 of that item, during the period set out in column 3 of that item, does not exceed the equivalent dose set out in column 4 of that item	RP	<ul style="list-style-type: none"> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Sections 5.6 and 5.7</li> </ul>

	REQUIREMENTS	SCA	Response
20(1)	<p>No person shall possess a container or device that contains a radioactive nuclear substance unless the container or device is labelled with the radiation warning symbol set out in Schedule 3 and the words "RAYONNEMENT – DANGER – RADIATION"; and</p> <p>the name, quantity, date of measurement and form of the nuclear substance in the container or device.</p> <p>(2) Subsection (1) (2) Subsection (1) does not apply in respect of a container or device</p> <p>(a) that is an essential component for the operation of the nuclear facility at which it is located;</p> <p>(b) that is used to hold radioactive nuclear substances for current or immediate use and is under the continuous direct observation of the licensee;</p> <p>(c) in which the quantity of radioactive nuclear substances is less than or equal to the exemption quantity; or</p> <p>(d) that is used exclusively for transporting radioactive nuclear substances and labelled in accordance with the Packaging and Transport of Nuclear Substances Regulations.</p>	RP	<ul style="list-style-type: none"> <li>• "Radiation Protection Manual – Ottawa Site", SE-RP-001 (11), Section 4.4.4.1</li> </ul>

	REQUIREMENTS	SCA	Response
21(1)	<p>Every licensee shall post and keep posted, at the boundary of and at every point of access to an area, room enclosure or vehicle, a durable and legible sign that bears the radiation warning symbol set out in Schedule 3 and the words "RAYONNEMENT – DANGER – RADIATION"; if</p> <p>(a) there is a radioactive nuclear substance in a quantity greater than 100 times its exemption quantity in the area, room, enclosure or vehicle; or</p> <p>(b) there is a reasonable probability that a person in the area, room, enclosure or vehicle will be exposed to an effective dose rate greater than 25 <math>\mu</math>Sv/hr.</p>	RP	<ul style="list-style-type: none"> <li>• "Radiation Protection Manual – Ottawa Site", SE-RP-001 (11), Section 4.4.4.1</li> </ul>
22	<p>22. Whenever the radiation warning symbol set out in Schedule 3 is used,</p> <p>(a) it shall be</p> <p>(i) prominently displayed,</p> <p>(ii) of a size appropriate for the size of the container or device to which it is affixed or attached, or of the area, room, enclosure or vehicle in respect of which it is posted,</p> <p>(iii) in the proportions depicted in Schedule 3, and</p> <p>(iv) oriented with one blade pointed downward and centred on the vertical axis; and</p> <p>(b) no wording shall be superimposed on it.</p>	RP	<ul style="list-style-type: none"> <li>• "Radiation Protection Manual – Ottawa Site", SE-RP-001 (11), Section 4.4.4.1</li> </ul>

	REQUIREMENTS	SCA	Response
<b><i>Nuclear Substances and Radiation Devices Regulations</i></b>			
3(1)	An application for a licence in respect of a nuclear substance or a radiation device, other than a licence to service a radiation device, shall contain the following information in addition to the information required by section 3 of the <i>General Nuclear Safety and Control Regulations</i> :		
3(1)(a)	the methods, procedures and equipment that will be used to carry on the activity to be licensed;	OP	<ul style="list-style-type: none"> <li>• “Management System for Safety”, SE-LIC-001 (17)</li> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11)</li> <li>• Procedures associated with the licensed activity fall into the following categories: <ul style="list-style-type: none"> <li>- EHS procedures which cover radiation protection, chemical handling, calibration, environmental protection, emergency response</li> <li>- Operating procedures for Cobalt processing</li> <li>- Operating procedures for production of Medical Isotopes products</li> <li>- Packaging of nuclear substances</li> <li>- Shipping</li> <li>- Waste handling</li> <li>- Maintenance</li> <li>- Security</li> </ul> </li> </ul> <p>Environmental, health, and safety procedures are submitted with this application. Other procedures are available upon request.</p>
3(1)(b)	the methods, procedures and equipment that will be used while carrying on the activity to be licensed, or during and following an accident, to		
3(1)(b)(i)	monitor the release of any radioactive nuclear substance from the site of the activity to be licensed,	EP	<ul style="list-style-type: none"> <li>• “Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Sections 9 and 10</li> </ul>

	REQUIREMENTS	SCA	Response
3(1)(b)(ii)	detect the presence of and record the radiation dose rate and quantity in becquerels of radioactive nuclear substances at the site of the activity to be licensed,	RP/EP	<ul style="list-style-type: none"> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 12</li> </ul>
3(1)(b)(iii)	limit the spread of radioactive contamination within and from the site of the activity to be licensed, and	EP	<ul style="list-style-type: none"> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 7 and 14</li> </ul>
3(1)(b)(iv)	decontaminate any person, site or equipment contaminated as a result of the activity to be licensed;	RP/EP	<ul style="list-style-type: none"> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 7 and 14</li> <li>“Investigations”, SE-RP-003 (17), Section 5.2.1 and Appendix A</li> </ul>
3(1)(c)	a description of the circumstances in which the decontamination referred to in subparagraph (b)(iv) of the <i>Nuclear Substances and Radiation Devices Regulations</i> will be carried out;	RP/EP	<ul style="list-style-type: none"> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 7 and 14</li> </ul>
3(1)(d)	the proposed location of the activity to be licensed, including a description of the site;	PD	<ul style="list-style-type: none"> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> </ul>
3(1)(e)	the roles, responsibilities, duties, qualifications, and experience of workers;	HP	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), Sections 4 and 5.6</li> </ul>
3(1)(f)	the proposed training program for workers;	HP	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), Section 5.6</li> <li>“Systematic Approach to Training System”, SE-TRN-006 (9)</li> </ul>
3(1)(g)	the proposed instructions for dealing with accidents, including fires and spills, in which the nuclear substance may be involved;	EM	<ul style="list-style-type: none"> <li>“Site Emergency Response Plan”, SE-ERP-002 (12)</li> <li>“Fire Safety Plan”, SE-ERP-001 (8)</li> </ul>
3(1)(h)	the proposed inspection program for the equipment and systems that will be used to carry on the activity to be licensed;	FS	<ul style="list-style-type: none"> <li>“Facilities Maintenance Master Plan”, R-Master (15)</li> <li>“Calibration Master Plan”, CP-001 (1)</li> </ul>

	REQUIREMENTS	SCA	Response
3(1)(i)	the methods, procedures and equipment that will be used to calibrate radiation survey meters in accordance with these Regulations;	FS	<ul style="list-style-type: none"> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11), Section 6.5.4</li> <li>“Management System for Safety”, SE-LIC-001 (17), section 5.20.4</li> </ul>
3(1)(j)	the methods, procedures and equipment that will be used to calibrate and verify the calibration of dosimeters referred to in paragraphs 30(3)(d) and (e) of the <i>Nuclear Substances and Radiation Devices Regulations</i> ;	FS	<ul style="list-style-type: none"> <li>“Radiation Protection Manual – Ottawa Site”, SE-RP-001 (11)</li> <li>“Management System for Safety”, SE-LIC-001 (17)</li> </ul>
3(1)(k)	the methods, procedures and equipment that will be used to conduct the leak tests and surveys required by these Regulations;	FS	<ul style="list-style-type: none"> <li>“Radioactive Material Inventory”, SE-LIC-015 (21), Section 13</li> </ul>
3(1)(l)	where the application is in respect of a nuclear substance that is an unsealed source and that is to be used in a room, the proposed design of the room;	PD	<ul style="list-style-type: none"> <li>“Final Safety Analysis Report for Cobalt Operations”, IS/SR 1057 Z000 (12)</li> <li>“Final Safety Analysis Report for Cobalt Pools”, IN/SR 2638 Co60 (5)</li> </ul>
3(1)(m)	if the application is in respect of a nuclear substance that is contained in a radiation device, the brand name and model number of the radiation device, and the quantity of the devices;	PD	<ul style="list-style-type: none"> <li>Gammacell 220, Serial Number 59.</li> <li>Any serial number of Gammacell 220 devices brought to the facility for refurbishment and use or for servicing.</li> </ul>
3(1)(n)	where the application is in respect of Category I, II or III nuclear material, as defined in section 1 of the <i>Nuclear Security Regulations</i> ,	N/A	Not applicable
3(1)(n)(i)	the measures that will be taken to prevent nuclear criticality, and	N/A	Not applicable
3(1)(n)(ii)	the information required by section 3 or 4 of the <i>Nuclear Security Regulations</i> , as applicable;	N/A	Not applicable

	REQUIREMENTS	SCA	Response
3(1)(o)	if the applicant will be manufacturing or distributing radiation devices referred to in paragraph 5(1)(c) of the <i>Nuclear Substances and Radiation Devices Regulations</i> or section 6 or 7 of the <i>Nuclear Substances and Radiation Devices Regulations</i> , or check sources mentioned in section 8.1 of the <i>Nuclear Substances and Radiation Devices Regulations</i> , the proposed procedure for the disposal of each radiation device or check source or for its return to the manufacturer.	WM	Not applicable
4.	An application for a licence to service a radiation device shall contain the following information in addition to the information required by section 3 of the <i>General Nuclear Safety and Control Regulations</i> :	N/A	Not applicable
4.(a)	the brand name and model number of the device or the number of the certificate relating to the device;	SA	<ul style="list-style-type: none"> <li>Gammacell 220 Irradiator</li> </ul>
4(b)	a description of the nature of the servicing proposed to be carried on;	SA	<ul style="list-style-type: none"> <li>Servicing of the Gammacell 220 consisting of the following: <ul style="list-style-type: none"> <li>Source removal and reloading</li> <li>Surveying</li> <li>Wipe tests</li> <li>Routine preventative maintenance</li> <li>Maintenance as required for repairs (e.g. replacement of broken switches, motor repairs)</li> </ul> </li> <li>Servicing of any Gammacell 220 Irradiator at the Nordion Ottawa location. The devices would be brought to the facility to refurbish and use at the Nordion Ottawa location or to service and return to the customer.</li> </ul>
4(c)	the proposed methods, procedures and equipment for carrying on the servicing;	SA	<ul style="list-style-type: none"> <li>"Management System for Safety", SE-LIC-001 (17), Section 5.6.2</li> </ul>



	REQUIREMENTS	SCA	Response
4(d)	the proposed qualification requirements and training program for workers; and	SA	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), Section 5.6.2</li> </ul>
4(e)	the proposed procedures to be followed after completion of the servicing to confirm that the device is safe to use.	SA	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), Section 5.20.2</li> </ul>
<b>Nuclear Security Regulations</b>			
41	An application for a licence in respect of a nuclear facility shall contain, in addition to the information required by sections 3 to 8 of the <i>Class I Nuclear Facilities Regulations</i> , a description of the physical protection measures to be taken to ensure compliance with sections 42 to 48.	NS	<ul style="list-style-type: none"> <li>“Management System for Safety”, SE-LIC-001 (17), Section 5.4.10</li> </ul>

## ACRONYMS

SCA	Safety and Control Area	EP	Environmental Protection
MS	Management System	EM	Emergency Management and Fire Protection
HP	Human Performance Management	WM	Waste Management
OP	Operating Performance	NS	Security
SA	Safety Analysis	SG	Safeguards
PD	Physical Design	PT	Packaging and Transport
FS	Fitness for Service	OMRI	Other Matters of Regulatory Interest
RP	Radiation Protection	N/A	Not Applicable
CHS	Conventional Health and Safety		