



Supplementary Information

Written submission from Nordion (Canada) Inc.

In the Matter of the

Nordion (Canada) Inc.

Application to renew Nordion's operating licence NSPFOL-11A.01/2025 for a period of twenty-five years.

Commission Public Hearing

June 11-12, 2025

Renseignements supplémentaires

Mémoire de Nordion (Canada) Inc.

À l'égard de

Nordion (Canada) Inc.

Demande visant à renouveler le permis NSPFOL-11A.01/2025 du site de Nordion pour une période de vingt-cinq ans.

Audience publique de la Commission

11-12 juin 2025

Attachment 2: Summary of Facility and Program Improvements Since 2015

SCA	FACILITY AND PROGRAMS IMPROVEMENTS: 2015 to 2023
Management System	<ul style="list-style-type: none"> • The Management System for Safety (MSS) (previously known as Quality Assurance (QA) Program for Safety) and the internal audit program were expanded to include other program areas following Canadian Nuclear Safety Commission (CNSC) guidance • Management System for Safety was revised to align with the new CSA Standard N286-12, “Management System Requirement for Nuclear Facilities” • MSS Program was revised to add details as per CNSC comments to further align with the CSA Standard N286-12, “Management System Requirement for Nuclear Facilities” • Nordion implemented a behavioral based safety awareness program to encourage safety discussions within the organization and to encourage employees to report near misses and hazard identifications • Revised procedure for management of work in the Medical Isotopes Facility to reflect that work is sub-contracted to BWXT. The revision captured the changes made for the management of documents, work procedures, drawings, software, dosimetry, training and use of a standalone IT Common Business System (CBS), and to add details regarding workflow for design drawings changes, training, communications, problem identification and resolution and operations • Revisions to update the MSS Program were initiated in 2021 and completed in early 2022 due to BWXT obtaining an operating license and to update the associated procedures, roles and responsibilities within the stand-alone Nordion MSS Program
Human Performance Management	<ul style="list-style-type: none"> • Completion of the SAT Job Task Analysis (JTA) and the revision of the training programs for the following positions where the core duties of the positions are safety related: <ul style="list-style-type: none"> ○ Cobalt Monitors ○ Installation and Service Technicians ○ Surveyors. <p>JTA was also completed for numerous positions that have embedded safety related tasks, but where their core role is not a safety function.</p> • Modification of various safety training programs from in-class to self-directed training • Improved Contractor training by transitioning from read and understand training to annual in-class training • Assessment of all key occupational health and safety courses
Operating Performance	<ul style="list-style-type: none"> • Creation and implementation of two compliance awareness courses for personnel with roles related to reporting to the CNSC Sealed Source Tracking System • Modified where the tracking system retrieved the export license number within the electronic databases management system preventing duplication and reducing error associated with manual entries • Implemented a process for reporting amendments to the export license number to the CNSC • Improved manual reporting process to ensure reporting of all the required

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Operating Performance (cont'd)	<p>information within the required timeframe</p> <ul style="list-style-type: none"> • Implemented monitoring of sealed source receipts/imports and an electronic alert message to advise when sources are received into the building, but not yet entered into the tracking system • Introduced verification steps for the following manual entries: updating shipment date in tracking system by Forecasting & Planning Department, manual reporting of amendments to the Export License number, and manual revisions of the bulk file • Revised process for review of domestic site licenses to ensure the most recent radioactive material licenses are reported • Simplified process for routine waste shipments by changing responsible department for revising shipment dates in the tracking system • Streamlined the sealed source reporting procedure and developed a Job Aid for the SSTS Bulk Upload to the CNSC web portal • Various continuous improvements were completed in 2021, including but not limited to procedural changes to provide additional guidance to personnel for confirming sender information for SSTS reporting for received sources, and for confirming sender/recipient license information for SSTS reporting of domestic transfers of sources • The internal processes for reallocated Co-60 sources to a different end user after SSTS reporting has been completed were improved in 2022
Safety Analysis	<ul style="list-style-type: none"> • Modification in the KOB Mechanical room to meet seismic requirements • Created Cobalt Pool Safety Analysis Report • Nordion undertook a gap analysis of its safety analysis program against REGDOC-2.4.4, "Safety Analysis for Class 1B Nuclear Facilities". Minor, administrative changes are being made to Nordion's program based on this gap analysis
Fitness for Service	<ul style="list-style-type: none"> • Installed permanent in-pool deionizer system • Installed new Miura boiler in Mech Room 5 • Replacement of the KOB lower roof • Installation of a manual transfer switch for redundancy between the three emergency power generators • Installed stack 2 manual transfer switch • Replacement of breakers and cradles in the KOB electrical power distribution system • Modifications to improve HVAC to Human Resources area • Replaced a medium voltage load breaker switch in the Kanata Operations Building (KOB) electrical room • Upgraded motor controls on plant chillers to variable frequency speed control • Installation of reheat coil for air handling unit (AHU) #40 • Installation of re-circulation pumps (glycol) at AHU #1 and #3 • Chiller Upgrade in Heating Plant; refurbishment project as part of necessary maintenance • Chiller Upgrade included replacement of chiller starters with Variable Frequency Drive controlled chiller starters • Installed secondary water main on Solandt Road

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Fitness for Service (cont'd)	<ul style="list-style-type: none"> • Repaired air conditioner in Roy Errington (RE) basement phone room • Replacement of dock levelers on Shipping Door 6-9 and Door 6-7 • Replacement of Motor Controls on Chilled Water Condenser Pump • Upgraded condenser pump controls for the chilled water system (to Variable Frequency Drives) • Installed back flow preventers at the KOB, Kanata Radiopharmaceutical Manufacturing Facility (KRMF) and RE buildings • Replaced domestic water line in KOB Active area, no structural changes to designated Active areas • Upgraded valves and valve operators for the chilled water system • Replacement of culvert on March Road • Relocation of Bell Services from RE Building • Retrofitted facility for BXWT separate access • Relocated rooms and modified fire doors to security equipment as a result of sale to BWXT • Installed new milling machine in Cobalt Machine Shop • Modified ventilation in Room 1132 (Cobalt) fume hoods to the new sectioning saw • Cell 1 demolition and site preparation • Construction work continued for new hot cell (Cell 1) in the COF that was started in 2020 and completed in 2023 • Introduced new TIG brush cleaning unit for cleaning contaminated equipment • Installed Cell 1 • Installed Cell 1 Nuclear Ventilation System tie-in • Replacement of roof on the Cobalt building • Installed new industrial style 3D printer in Room 1139B (Active Lab) • Implemented Hytorc electric torque tool to help reduce ergonomic strain injuries from torquing • Rerouted Cobalt washing machine to low level liquid waste • Implemented in-cell probe in Cell 2 • Upgraded BMS (hardware and software) • Installed a storage mezzanine in the Cobalt Shipping area • Upgraded Liburdi welding cabinets
Radiation Protection / ALARA	<ul style="list-style-type: none"> • Installed new airflow monitoring detectors in Cobalt to improve measurement of stack flow at air release compliance monitoring sampling points • Created a new procedure to outline the necessary steps to maintain and use Nordion's database for creating calibration certificates for over 800 radiation detector calibrations performed annually • Efforts to monitor and track unreturned dosimeters • Purchased a new source for the radiation survey meter calibrations (SN 3007GG). The new higher activity source ensured compliance with precision in distance requirements • Designed, built, and installed a shield for the Cobalt whole-body scanner in men's change room to lower background radiation levels and increase sensitivity and reliability of performance • An analysis of doses to Cobalt operations personnel was performed to determine if there were any trends that could lead to further improvements. The analysis found that doses were well controlled. • Updated radiation protection program to reflect changes to the Radiation

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Radiation Protection / ALARA (cont'd)	<p>Protection regulations</p> <ul style="list-style-type: none"> • Installed a new whole-body scanner in the women's change room in Cobalt operations
Conventional Health and Safety	<ul style="list-style-type: none"> • Developed a back awareness training challenge • A new document was created to outline biosafety guidelines • Created a series of stretch videos to help teach employees about various stretches that they can perform at various times throughout their shift • Routine "Safety Focus Talks" were created for managers to provide to their teams • An EHS compliance management software was implemented for incident, near miss and hazard identification reporting and all employees were trained on its use • A formal site-wide reassessment was completed related to designated substances and materials containing asbestos • A formal occupational health and safety manual was developed • A formal pre-start health and safety review procedure was established • Safe handling of silica and mercury programs were established • Improvements were made to the Asbestos Management Program and an Asbestos Inventory was established • Nordion's Confined Space assessment was reassessed and updated • Improvements were made to on-site chemical spill kits • Improvements were made to facility eyewash stations • Improvements were made to hoisting safety program • Improvements were made to respirator protection program • Chemical awareness training was updated to include reference to WHMIS 2015 • Updated the Right to Refuse Dangerous Work procedure • Introduction of a behavioural based safety awareness program • Improvements were made to the Lead Control Program and training was updated and provided to applicable employees • Reviewed and updated Fall Protection training and provided to applicable employees. Some equipment specific training was also conducted • Implementation of the WHMIS 2015 requirements • Completion of Chemical Spill Response training • Rolled out of Canada Labour Code Part II training for managers • Implementation of a Working Alone procedure • Implementation of a Bio-Safety procedure • Updated the departmental Job Hazard Analysis and Risk Assessment process • Improvements were made to documents for reporting of occupational injuries, and work reintegration • Improvements were made to the Work Permit procedure • Improvements were made to the Manual Material Handling procedure • Improvements were made to the Respirator Program • Created a Machine Guarding Program • Improvements were made to the Hearing Conservation Program • Creation of COVID related programs/processes (education, response, decontamination) • Installed new Safety Boards in key locations throughout the site • Developed safety scorecard to track leading and lagging metrics

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Conventional Health and Safety (cont'd)	<ul style="list-style-type: none"> • Developed a Hand Protection Policy
Environmental Protection	<ul style="list-style-type: none"> • Implementation of the CSA standards N288.4, N288.5, and N288.6 which included developing a formal Environmental Risk Assessment, revising Nordion's Derived Release Limits and developing Nordion's Environmental Monitoring Program. • Initiated changes to the Environmental Management System (EMS) to meet the requirements of ISO 14001:2015 • Implemented changes to the EMS System to meet the requirements of ISO 14001:2015 • Updated risk assessments for lead, silica, and mercury • Undertook a comprehensive review and implemented improvements of sanitary release program
Emergency Management and Fire Protection	<ul style="list-style-type: none"> • Developed a Transient Combustible Materials Management Program with the assistance from a third party • Revised documents and practices to align with N393-13, "Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances" • Developed training for all employees on fire prevention and safety • Provided Fire Watch training to applicable staff • Generated new documents and revised existing emergency management program documents and all sub-plans to reflect the updated program and incorporate Incident Management System. The revised program documentation incorporated the elements of REGDOC 2.10.1 "Nuclear Emergency Preparedness and Response". • Revised Nordion's Fire Safety Plan (SE-ERP-001) to align with Incident Management System protocol • Completion of project to replace halon fire suppression in hot cells with argon, or in some instances, removed in-cell fire suppression as for some cells, combustible loading is minimal • Implemented Fire Watch and Fire Extinguisher Training for applicable staff • Completed program enhancements to address minor areas for improvement identified in exercises and drills and other continuous improvements included: <ul style="list-style-type: none"> ○ Designed and implemented minor revision to the program to address items identified during the 2016 major exercise ○ Designed and implemented a two-way radio training program for responders ○ Provided orientation visits to approximate 90 fire fighters from two responding stations. ○ Onboarded 3 new Incident Managers ○ Created refresher training courses • Completed a fire response training needs analysis for the Fire Protection Program • Completed a Fire Response Needs Analysis to meet requirements of CSA Standard N393, "Fire protection for facilities that process, handle, or store nuclear substances" • Implemented Fire Extinguisher Training for applicable staff • Designed and implemented minor plan adjustments related to the sale of the Medical Isotopes business. These were limited to command and control relationships and liaison. The response plans were otherwise unchanged due

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Emergency Management and Fire Protection (cont'd)	<p>to the sale</p> <ul style="list-style-type: none"> • Created additional refresher training courses using online delivery tool • Held a tabletop exercise involving the Incident Command Post personnel pool as participants or observers • Updated the Fire Safety Plan and Fire Warden and Fire Marshall Responsibilities procedures. • Added “expected Emergency Response Organization activation times” to better define expected response times from key emergency response plan personnel • General update to program documentation to include BWXT personnel and associated contact information in the program • Minor update to contact information for key personnel • Designed and implemented minor revisions to the program to address items identified during the 2019 major exercise • Replaced all combustible strapping for compressed air tanks to a non-combustible alternative • The response to the Covid-19 pandemic was the primary focus in 2020 and 2021. Significant effort was required to maintain a safe facility and to reduce any impacts. Continuous adaptation was required as the external situation and guidelines changed very frequently. These adaptations were active program improvements and Nordion was very successful in mitigating the pandemic’s impact • Initiated updates to the Fire Hazard Analysis in 2020, which was finalized in 2021 • Updated the Fire Safety Plan and Fire Warden and Fire Marshall Responsibilities procedures • Updated the Fire Protection Program • Created a new “Fire Protection System Impairments” procedure to supplement the “Work Permit Authorization Program” • Conducted a revised Code Compliance Review and Fire Hazard Assessment • Updated the Fire Safety Plan • Equipment upgrades, including additional Incident Command Post vests • Actioned on program enhancements to address CNSC recommendations on Emergency Management inspection in 2022 • Conducted Fire Protection Program Audit • Conducted a gap analysis against CSA N393-22, NBCC 2020 and NFCC 2020. • Provided tour/orientation to approximately 80 Ottawa Fire Services personnel
Waste Management	<ul style="list-style-type: none"> • Secured waste bins in the Heating Plant • Worked with the waste service provider to include coffee cups in the organics waste stream, reducing the demand on landfills • Replaced non-radiological waste diversion program signage throughout the facilities in an effort to improve program performance

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Waste Management (cont'd)	<ul style="list-style-type: none"> Reduced the amount of waste from Ir-192 process sent to CNL. Several small projects completed to reduce Ir-192 process wastes and to optimise filling of the waste package. This work is related to a Nordion initiative to reduce Ir-192 process wastes and implement the practise of storing Ir-192 process waste for decay and then sending to Energy Solutions Inc. as low-level waste (versus continuing to send to CNL)
Security	<ul style="list-style-type: none"> Renovation and enhancement of the Security Control Centers Installation of network security hardware Upgrading of the Security Systems Upgrading the Security cameras and alarms Installation of new lighting in and around the facility
Safeguards & Non-Proliferation	<ul style="list-style-type: none"> Revised to remove the requirement for submission of two nuclear material accountancy reports following CNSC confirmation that some of the reporting requirements in RD-336 could be reduced The safeguards program document was revised and reorganized to align with and demonstrate compliance with REGDOC-2.13.1 Nordion initiated the process to exempt transport containers model number 3300 and 3750 that contained depleted uranium (DU). As of December 31st, 2021, eight containers were granted exemption by the IAEA: one of model number 3300 and seven of model number 3750 As of December 31st, 2022, an additional ten DU packages were granted exemption by the IAEA: four of model number 3300 and six of model 3750. The request to exempt the final two DU transport packages model 3300 remains outstanding since January 2022
Packaging and Transport	<ul style="list-style-type: none"> Updated training to a virtual format
Public Information	<ul style="list-style-type: none"> Updated the Social Responsibility content on Nordion.com and gave the section greater prominence in the navigation Added an Emergency Preparedness section to the Nordion website A comprehensive Virtual Tour was published on the website Updated the Nordion Public Information Program to align with CNSC REGDOC-3.2.1 Transitioned to a virtual community outreach event during COVID to ensure community engagement continued