Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

CNSC
Departmental Plan
2022–23

Departmental Plan 2022–23

Canada

Canadian Nuclear Safety Commission

2022–23

Departmental Plan

The Honourable Jonathan Wilkinson, P.C., M.P.
Minister of Natural Resources

2022–23 DEPARTMENTAL PLAN
CANADIAN NUCLEAR SAFETY COMMISSION

ISSN: 2371-7467

GOVERNMENT OF CANADA CATALOGUE NUMBER: CC171-28E-PDF

TABLE OF CONTENTS

MESSAGE FROM THE PRESIDENT

I am pleased to present the Canadian Nuclear Safety Commission (CNSC) 2022–23 Departmental Plan, which informs parliamentarians and Canadians about our work and the results we aim to achieve during the upcoming fiscal year. Despite the uncertainties that we will continue to face throughout 2022–23, our top priority will always be to ensure the safety and security of Canadians and the protection of the environment. This commitment is evident in everything we do, from our licensing decisions to our open public meetings, to the vigilance and professionalism shown every day by our staff.

Innovation, resulting in new technologies, and growing public expectations continue to test the adaptability and readiness of regulators around the globe. I am proud of the CNSC for always rising to the occasion by demonstrating agility in the face of rapid change while maintaining high safety standards. As we look ahead, we will continue to be flexible and agile to adapt as the industry we regulate evolves.

With the increasing momentum for the deployment of small modular reactors (SMRs) in Canada, we must maintain our focus on key areas to ensure our state of readiness for potential deployment. We have put significant effort into ensuring we have a regulatory framework that is performance-based and technology-neutral with regulatory requirements that are commensurate with the risks involved. We welcome the opportunity to lead discussions, domestically and internationally, about rethinking how we regulate innovative technologies while remaining committed to our longstanding principles and an unwavering commitment to safety.

There is a need for international standardization of SMR designs and harmonization of regulatory practices to support the potential widespread global deployment of this technology. In 2022–23, we will expand on our cooperation agreements with other regulators, and continue to advocate for harmonization, recognizing the important role that mature regulators from Tier 1 nuclear countries play in leading in this area. As chair of the IAEA's Commission on Safety Standards (CSS)[1], I have the opportunity to lead the improvement of safety standards and harmonization of regulatory practices on the global stage. As a result, the CSS has set a priority to ensure that the existing safety standards are technology neutral and are applicable for SMRs. I am pleased with the excellent progress being made, and the CSS will continue to lead in this area.

As the nuclear sector keeps evolving, we will continue to ready ourselves to address the regulatory implications of the modernization of nuclear waste regulation in Canada. This includes the work underway to prepare for the regulation of the Nuclear Waste Management Organization's Adaptive Phased Management, ongoing oversight of refurbishment projects at the Bruce and Darlington Nuclear Generating Stations, and the implications of potential waste policy development within Canada. Regardless of the project or changes that come, our focus will be on verifying that all projects are being carried out safely.

In 2022–23, we will take steps to ensure that we have the right technology, tools, and people to continue to be an effective regulator as the nuclear industry evolves. We have proactively undertaken a strategic review, named Project Athena, of our work to prepare for these and a number of other anticipated changes to our operating environment over the next 5 to 10 years. This year, we will begin implementing our findings to ensure that we remain an effective, agile regulator that is able to adapt to an ever-changing sector.

With the potential introduction of new technologies that may be unfamiliar to Canadians, it is incumbent upon us to place even greater focus on building relationships and progressing with the implementation of our trust-building strategy and Indigenous reconciliation strategy. We will continue to look for innovative ways to consult, build relationships and take concrete steps towards working together.

Innovation is also playing a larger role in the changing way we conduct our day-to-day business. We are adapting our workforce and workplace to our new normal, including leveraging employee experiences working remotely. Various initiatives are underway to improve how we work as we implement the Government of Canada's GCWorkplace[2] project.

We know that diversity, equity and inclusion are fundamental to strengthening our safety culture, spurring innovation and collaboration, and supporting better decision making. And so, a priority for us in the coming year will be to update our Diversity, Equity and Inclusion Plan to ensure that our efforts in this area are thoughtful and strategic. As part of this priority, I continue to lead initiatives such as the Driving Advancement of Women in Nuclear and the International Gender Champions Impact Group on Gender Equality in Nuclear Regulatory Agencies.

As always, I thank the CNSC's highly skilled, professional staff who are dedicated in their efforts to regulate Canada's nuclear industry and are committed to keeping the environment and Canadians safe. Together, we will remain true to our goals and keep enforcing the highest safety standards.

_____

Rumina Velshi
President

PLANS AT A GLANCE

THE CNSC'S 4 STRATEGIC PRIORITIES

TO HAVE A **MODERN** APPROACH TO NUCLEAR REGULATION

- The CNSC is committed to a modern approach to nuclear regulation using science-based and risk-informed regulatory practices and regulatory framework that take into account scientific uncertainties, an evolving industry and changing regulatory expectations.

TO BE A **TRUSTED** REGULATOR

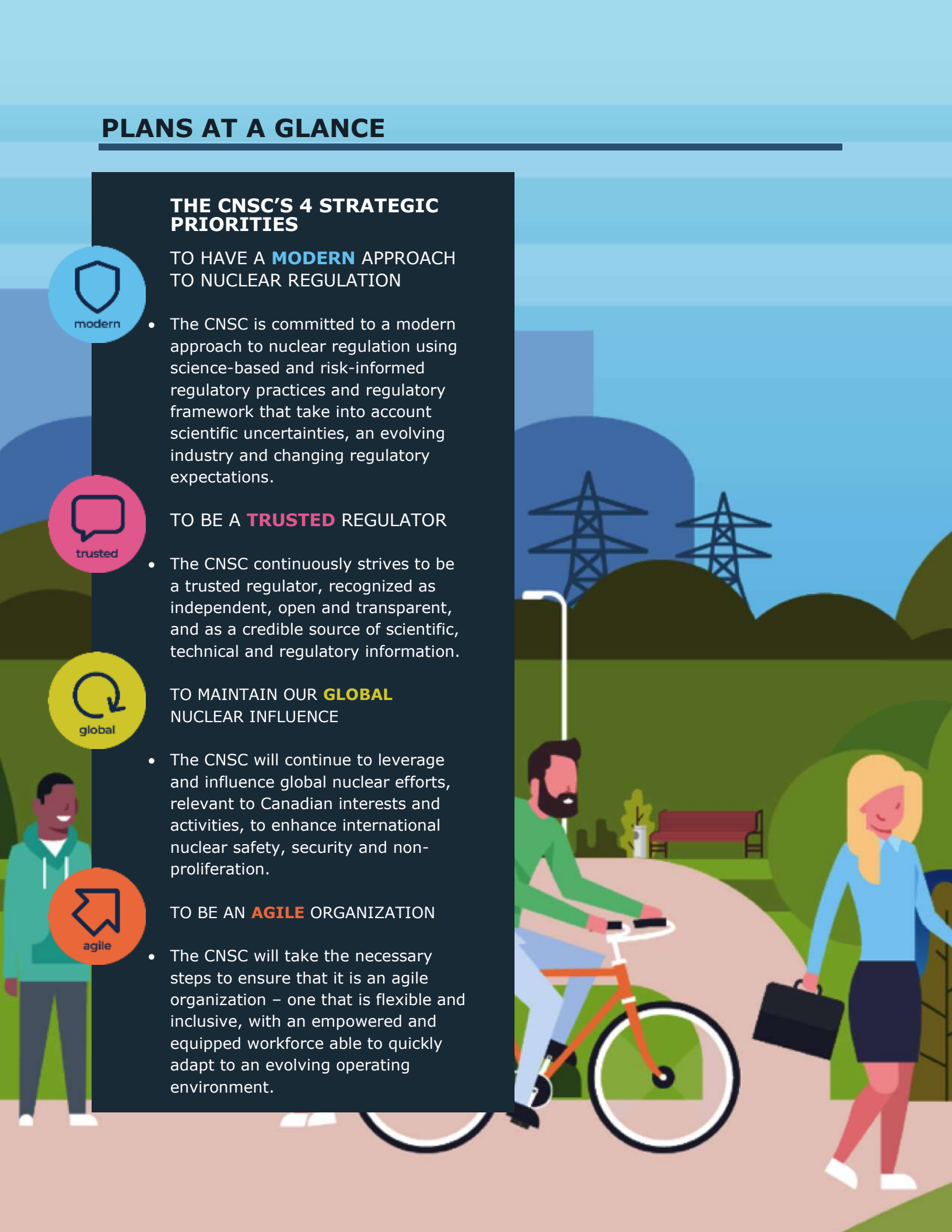
- The CNSC continuously strives to be a trusted regulator, recognized as independent, open and transparent, and as a credible source of scientific, technical and regulatory information.

TO MAINTAIN OUR **GLOBAL** NUCLEAR INFLUENCE

- The CNSC will continue to leverage and influence global nuclear efforts, relevant to Canadian interests and activities, to enhance international nuclear safety, security and non-proliferation.

TO BE AN **AGILE** ORGANIZATION

- The CNSC will take the necessary steps to ensure that it is an agile organization – one that is flexible and inclusive, with an empowered and equipped workforce able to quickly adapt to an evolving operating environment.



PLANS AT A GLANCE

The commitment to the CNSC's core responsibility of nuclear regulation, the fulfillment of its mandate, and the achievement of its Departmental Results for 2022–23 and beyond are delivered through five programs (plus Internal Services) that are guided by the following four strategic priorities: modern, trusted, global and agile.

The CNSC is committed to a **modern** approach to nuclear regulation using science-based, risk-informed, and technically sound regulatory practices that take into account scientific uncertainties and evolving expectations. In 2022–23, the CNSC will:

- play a key role in Canada's small modular reactor (SMR) action plan[3], which requires modernizing its regulatory process to enable effective regulation of first-of-a-kind reactor technologies that meet safety standards. The plan outlines four key actions the CNSC will continue to focus on in 2022–23: nuclear security, regulatory efficiency, engagement, and international collaboration.
- work on pre-licensing vendor-design reviews[4] for many SMR vendors. These vendors, while subject to change, include GE-Hitachi Nuclear Energy's BWRX-300 boiling water reactor, X Energy, LLC's Xe-100 High-temperature gas reactor, NuScale Power, LLC's Integral pressurized water reactor, Ultra Safe Nuclear Corporation's micro-modular reactors (MMR-5 and MMR-10), Terrestrial Energy Inc.'s Integral Molten Salt Reactor and ARC Clean Energy Canada's ARC-100 Reactor.
- remain actively engaged in the modernization of Canada's radioactive waste policy and closely monitoring policy developments to ensure the necessary updates to its regulatory framework are made efficiently.
- leverage its newly created Innovation and Research Hub, a centralized and dedicated function to explore and provide a strategic lens for new and emerging technologies to effectively regulate licensees and applicants.
- support the establishment of new laboratory requirements and the science collaboration approach for TerraCanada Science and Innovation Hub, which is part of a federal government-wide initiative[5] to both modernize science infrastructure and enhance collaboration among scientists.
- formalize its hybrid inspection approach, implemented out of necessity as a result of pandemic restrictions, by undertaking a self-assessment of its inspection process. This assessment will allow the CNSC to ensure that its approach is consistent while providing opportunities for continuous improvement and flexibility.

Experimentation
The CNSC is continuously striving to be ready to regulate new nuclear technologies. One of these new technologies are Transportable Nuclear Power Plants (TNPPs), which are moveable nuclear power plants. In 2022–23, the CNSC will begin collaborating with other regulators, such as Transport Canada, to examine the interface between marine regulations and nuclear regulations. This will be a step in the

direction of understanding the complexity of TNPPs and how the CNSC's regulatory framework could be impacted.

The CNSC continuously strives to be a **trusted** regulator, recognized as independent, open and transparent, and as a credible source of scientific, technical and regulatory information. In 2022–23, the CNSC will:

- implement its trust-building strategy, centered on 3 pillars: 1) transforming stakeholder engagement; 2) demonstrating its independence; and 3) modernizing Commission proceedings. A key piece of this strategy will be the development of a Strategic Stakeholder Engagement Program to guide the development and maintenance of long-term relationships, prior to and after licensing activity, with specific stakeholders to understand perspectives and values, and ensure that concerns are taken into consideration.
- implement and make progress on actions included in the Indigenous reconciliation strategy. Actions include examining and updating regulatory documentation, reviewing and improving engagement activities, undertaking consultations, enhancing collaboration and participation processes and tools, and identifying training opportunities to help enhance the CNSC's cultural competencies and awareness.
- host a Country-Specific Safety Culture Forum in collaboration with the Nuclear Energy Agency (NEA) and World Association of Nuclear Operators in the fall of 2022 with a focus on the role leaders and decision-makers have to play in highlighting the importance of safety culture principles.
- contribute to the Nuclear Energy Agency's tasks and workshops on trust, risk communication and stakeholder engagement. This is directly related to the CNSC's efforts on safety culture, with a focus on communications. As part of this initiative, the CNSC will provide communications advice and share information and best practices.

CNSC will continue to leverage and influence **global** nuclear efforts, relevant to Canadian interests and activities, to enhance international nuclear safety, security and non-proliferation. In 2022–23, the CNSC will:

- play a leadership role to support an international nuclear governance framework.
- support improvements to safety standards through the CNSC President's role as Chair of the Commission on Safety Standards[1] (CSS), including prioritizing work to establish harmonized international standards for SMRs that are technology neutral, commensurate with the risks presented, and minimally sufficient for the needs of all countries.
- further advance international coordination in nuclear energy regulation to allow for safe and successful deployment of SMRs around the world through participation in the International Atomic Energy Agency (IAEA) SMR Regulators' Forum and working groups and the NEA's SMR-related working groups.

- collaborate with the U.S. and the UK in a trilateral agreement, with representation from both regulators and policy makers to find opportunities to harmonize licensing.
- continue to influence and hold leadership positions within multilateral organizations tasked with addressing priorities through participation in international conferences that align with CNSC priorities and needs such as International Nuclear Regulators Association and Western European Nuclear Regulators Association to share regulatory expertise. Additionally, the CNSC participates in annual multinational events, specifically, the IAEA General Conference and the U.S. NRC Regulatory Information Conference.

CNSC President Rumina Velshi, Executive Vice-President and Chief Regulatory Operations Officer Ramzi Jammal and Interim Vice-President and Chief Communications Officer Liane Sauer at the 2021 IAEA Fukushima Conference.

The CNSC will take the necessary steps to ensure that it is an **agile** organization – one that is flexible and inclusive, with an empowered and equipped workforce able to quickly adapt to an evolving operating environment. Improvements in this area support the attainment of all the CNSC's strategic priorities and Departmental Results. In 2022–23, the CNSC will:

- align its policies and processes to enable and empower a mobile and flexible workforce in support of a hybrid work model. In this model, managers and employees will co-create flexible, in-office and remote work practices that prioritize personal well-being, and maximize team connection, collaboration and innovation, regardless of location.
- will continue to implement its digital strategy to support transformation to a digitally enabled workforce that delivers long-term sustainability, as well as flexible tools to respond to future needs.
- transition to the implementation phase of its internal strategic review, Project Athena. The project aimed to generate high quality, evidence-based information on CNSC activities and develop options for change. The goal is to ensure that any changes the CNSC makes to adapt to our new environment are smart, timely, and durable.

CNSC's Women in Science, Technology, Engineering and Math initiative

With greater diversity, the CNSC will be better equipped to achieve regulatory excellence and deliver on its mandate. That is why it has undertaken a Women in Science, Technology, Engineering and Math (WISTEM) initiative to raise awareness of and support women in STEM careers at the CNSC and elsewhere. Of note in 2022–23, the CNSC is

leading the facilitation and coordination of the first Canadian NEA International Mentorship Workshop, a capacity-building effort focusing on STEM fields and generally aimed at young women, who are significantly under-represented. The WISTEM initiative also continues to act as scientific secretary to two major gender equality initiatives led by CNSC President Velshi: Driving Advancement of Women in Nuclear and the International Gender Champions Impact Group on Gender Equality in Nuclear Regulatory Agencies. In addition, through the WISTEM initiative, CNSC has implemented mentorship and coaching programs, continues to host networking events, participate and coordinate outreach activities, support strategic partners and continue to promote the CNSC-university collaborative model to encourage more women to undertake academic research in STEM. Work undertaken under the WISTEM initiative serves to support the Government of Canada's contribution to the United Nations' 2030 Agenda for Sustainable Development[6]: Goal 5 – Gender Equality and Goal 10 – Reduced Inequalities.

For more information on the CNSC's plans, see the "Core responsibilities: planned results and resources" section of this plan.

CORE RESPONSIBILITIES: PLANNED RESULTS AND RESOURCES

CORE RESPONSIBILITY: NUCLEAR REGULATION

THE CNSC'S DEPARTMENTAL RESULTS

1 The environment is protected from releases from nuclear facilities and activities.

PAGE 10

2 Canadians are protected from radiation resulting from nuclear facilities and activities.

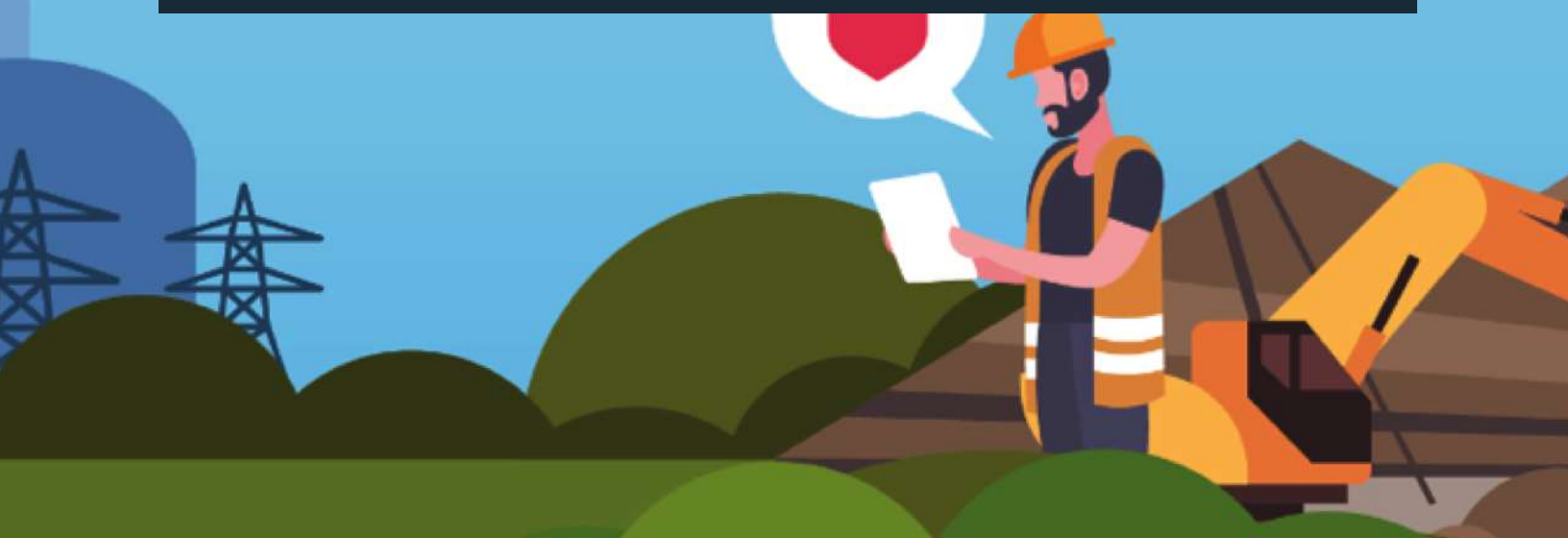
PAGE 10

3 Nuclear material and substances, facilities and activities are secure and used for peaceful purposes.

PAGE 12

4 Canadians, including Indigenous peoples, have meaningful information about, and the opportunity to participate in, the nuclear regulatory process.

PAGE 13



CORE RESPONSIBILITIES: PLANNED RESULTS AND RESOURCES

This section contains detailed information on the department's planned results and resources for each of its core responsibilities.

Nuclear Regulation

Description

The CNSC regulates the development, production and use of nuclear energy and substances to protect health, safety, security of persons and the environment; implements Canada's international commitments on the peaceful use of nuclear energy; and disseminates objective scientific and regulatory information to members of the public. The CNSC maintains a regulatory framework and conducts licensing (including environmental protection reviews), compliance verification and enforcement. The CNSC is committed to building and maintaining the confidence of the public and Indigenous peoples through transparent, open and inclusive regulatory processes.

LIFECYCLE REGULATION

The CNSC is one of the only federal regulators to regulate the entire lifecycle of a project, from resource extraction, through nuclear fuel processing and power production, to decommissioning and waste management.

Planning highlights

DEPARTMENTAL RESULT 1

The environment is protected from releases from nuclear facilities and activities.

DEPARTMENTAL RESULT 2

Canadians are protected from radiation resulting from nuclear facilities and activities.

For the CNSC to achieve its planned results, risks must be identified, monitored and controlled across all nuclear facilities and activities by CNSC inspectors who conduct compliance verification activities for nearly 1,700 licensees in various sectors.

To ensure the environment is protected from radiological and hazardous releases from nuclear facilities and activities, as to ensure that Canadians are protected from radiation resulting from nuclear facilities and activities, in 2022–23, the CNSC will:

- continue its regulatory oversight of Bruce Power's[7] Unit 6 major component replacement. In 2022–23, CNSC staff will ensure that the systems, structures and components will function as designed. Once this verification has been completed, the CNSC will release a hold point allowing

Bruce Power to load fuel into the refurbished reactor and proceed with the remainder of the commissioning tests in order to allow the unit to return to service in 2023.

- ensure continued regulatory oversight of the refurbishments of Unit 3 and Unit 1 at Darlington Nuclear Generating Station[8]. Unit 3 oversight will include return to service activities, while Unit 1 refurbishment will be focused on the removal of segments. Throughout, the CNSC will be verifying that the projects are carried out safely and that the required safety improvements are implemented.
- support the relicensing process to ensure that the Point Lepreau Nuclear Generating Station[9] meets CNSC regulatory requirements.
- conduct major project environmental assessments[10] such as those for the Near Surface Disposal Facility[11], Nuclear Power Demonstration closure project[12], Rook 1 project[13], Wheeler River[14], and Whiteshell Reactor #1[15].
- prepare to regulate Adaptive Phased Management (APM) being overseen by the Nuclear Waste Management Organization (NWMO)[16], which is responsible for implementing Canada's plan for the long-term management of used nuclear fuel. APM involves the containment and isolation of used fuel at a new deep geological repository site.

March 2019 renewed Special Project Service Arrangement signed by President Velshi and President of NWMO

- undertake compliance and licensing activities for SMRs, including conducting technical reviews of Ontario Power Generation's (OPG's) Darlington New Nuclear Project[17] application for a licence to construct and Global First Power's[18] licence application and associated environmental assessment.

CNSC isotope evaluation initiatives

In 2022–23, the CNSC will evaluate recent medical isotope-producing initiatives that are progressing at both the Darlington and Bruce sites. Ontario Power Generation (OPG) has notified the CNSC of its intention to modify the plant to allow for the production of the molybdenum-99 (Mo-99) radionuclide at Darlington in 2022–23. Mo-99 and its decay product, technetium-99 (Tc-99m), are widely used by the medical industry for diagnostic imaging. In October 2021, the Commission amended OPG's Darlington power reactor operating licence to include the possession and production of Mo-99, through the operation of an isotope irradiation system. OPG's remaining work for the Mo-99 project, including training, installation, and commissioning, is expected to continue through FY 2022–23 under planned regulatory oversight from CNSC staff.

OPG also intends to produce cobalt-60 (Co-60) at Darlington. Co-60 is currently produced in other Ontario reactors and is primarily used to sterilize medical equipment. OPG will be required to submit a licence application to include the intended Co-60 initiative as a licensed activity at the Darlington Nuclear Generating Station. The CNSC continues to review planned submissions from OPG in preparation for the licence amendment process.

In September 2021, the Commission accepted Bruce Power's request for a licence amendment to produce the radioisotope lutetium-177 (Lu-177), for cancer treatment. In 2022–23, the CNSC will ensure commissioning activities are completed by Bruce Power to the satisfaction of CNSC staff prior to commercial production of Lu-177.

To support the assurance that the public and environment are safe around licensed nuclear facilities, the CNSC has implemented an Independent Environmental Monitoring Program[19] (IEMP). The IEMP complements the ongoing compliance verification program and involves taking samples from public areas around nuclear facilities. These samples are analyzed by the CNSC Laboratory to determine the amounts of radiological and hazardous substances. The results are then compared to applicable guidelines and resulting conclusions are communicated on the CNSC website[19]. In 2022–23, the CNSC will:

- sample 7 sites which include the Bruce site, Whiteshell, Chalk River, BWXT-Toronto, TRIUMF, Elliot Lake and Rabbit Lake. This also serves to support the Government of Canada's contribution to the United Nations' 2030 Agenda for Sustainable Development[6], particularly Goal Three, which focuses on good health and well-being.

DEPARTMENTAL RESULT 3

Nuclear material and substances, facilities and activities are secure and used for peaceful purposes.

Through the *Nuclear Safety and Control Act* (NSCA), the CNSC implements Canada's international commitments on the peaceful use of nuclear energy. The CNSC implements regulatory programs to ensure that CNSC licensees and Canada at large meet the obligations arising from Canada's international safeguards agreements with the IAEA. Safeguards conclusions drawn by the IAEA assure Canadians and the international community that all nuclear materials in Canada are used for peaceful purposes.

To ensure nuclear material and substances, facilities and activities are secure and used for peaceful purposes, in 2022–23, the CNSC will:

- publish the updated *Nuclear Security Regulations*[20] as part of its nuclear security regulatory modernization project. Modernizing the nuclear security regulatory framework[21] involves extensive consultation with the public and stakeholders, as well as working to meet Government of Canada requirements for developing regulations. These requirements include weighing the impacts of potential changes to the security programs of licensees and applicants against the benefits to Canadians. The CNSC plans to seek approval from the Treasury Board Cabinet

Committee to pre-publish the draft regulations for consultation in 2022 and final approval in 2023.

- revise its nuclear security series of regulatory documents under the nuclear security regulatory modernization project to provide guidance for applicants and licensees on meeting the requirements of the updated *Nuclear Security Regulations*[20]. The CNSC plans to post the revised regulatory documents for public consultation in spring 2023 and publish the documents in fall 2023.
- continue to develop its approach to regulating cyber security and information protection at nuclear facilities and for nuclear substance licensees. Additionally, the CNSC will continue to monitor and assess cyber security threats for the purposes of informing the design basis threat analysis process. This analysis looks at the characteristics of a potential adversary to ensure appropriate countermeasures are incorporated into the design and evaluation of a physical protection system.
- participate in a full-scale emergency training exercise at the Bruce Power Nuclear Generating Station in October 2022. As part of their regulatory requirement, all Canadian reactor operators must undertake a full-scale emergency training exercise every 3 years. Full-scale exercises must include the participation of various stakeholders, including provincial, municipal, and federal authorities who have responsibilities in nuclear emergency response. The CNSC participates in these full-scale exercises to test its own preparedness and effectiveness in responding to a nuclear emergency.
- Implement Phase 2 of its Potassium Iodide (KI) Pill Working Group's[22] mandate, which includes looking at feasibility of pre-distribution of KI pills to all schools within the ingestion planning zone (IPZ) and establishing clear and detailed plans for the distribution of KI pills throughout the IPZ, if necessary.

DEPARTMENTAL RESULT 4

Canadians, including Indigenous peoples, have meaningful information about, and the opportunity to participate in, the nuclear regulatory process.

The CNSC is a proactive regulator that supports participation by members of the public and Indigenous peoples in the CNSC's regulatory processes. Public hearings and meetings are open to the public, are sometimes held in the community and are always webcast live on the CNSC's website. In addition, the CNSC offers funding through its Participant Funding Program[23] (PFP) to help support the participation of Indigenous peoples, members of the public, and stakeholders in bringing valuable information to the Commission. This is recognized internationally as a best practice to emulate.

The public and Indigenous peoples are also consulted on discussion papers and draft regulatory framework documents prior to publication. Furthermore, the CNSC frequently participates in community outreach and engagement activities, and responds to media calls and public information inquiries. As an agent of the Crown, the CNSC has an important responsibility to engage and consult with interested Indigenous Nations and communities and is committed to developing long-term positive relationships with these communities. The CNSC is always striving to implement ideas to improve its outreach and engagement strategies with all stakeholders and Indigenous Nations and communities.

To ensure that Canadians, including Indigenous peoples, have meaningful information about, and the opportunity to participate in, the nuclear regulatory process in 2022–23, the CNSC will:

- implement a long-term e-consultation platform to increase engagement with Indigenous Nations and communities, the public, and environmental non-governmental organizations (ENGOs) following the evaluation of the letstalknuclearsafety.ca[24] pilot tool. To complete the pilot project, the CNSC will hold 35 virtual workshops / Meet the Nuclear Regulator sessions with ENGOs and industry stakeholders.
- implement digital regulatory documents to enhance accessibility and clarity of regulatory information to allow stakeholders to have the flexibility to collate relevant regulatory information and view relevant regulatory information on a new, interactive interface.

Increasing the availability of scientific and regulatory information

The CNSC strives to continually improve its release of scientific and regulatory information to Canadians. In addition to ensuring scientific information and data are more accessible in accordance with the Open Government initiative[25], in 2022–23, the CNSC will:

- make environmental protection review reports and licensee data in the National Pollution Release Inventory available for publication on the Open Science platforms to increase transparency of scientific information.
- improve its process for publishing regulatory oversight reports. The CNSC is looking to move towards a streamlined, easy-to-read dashboard that would provide ongoing, clear, focused information with the support of a short written document containing additional information where needed. A conversation will be held with the Commission to look at the path forward to improved regulatory oversight reports in 2022–23.

Planned results for Nuclear Regulation

The following table shows, for Nuclear Regulation, the planned results, the result indicators, the targets and the target dates for 2022–23, and the actual results for the three most recent fiscal years for which actual results are available.

Departmental results	Departmental Result Indicators	Target	Date to achieve target	2018–19 Actual results	2019–20 Actual results	2020–21 Actual results
The environment is protected from releases from nuclear facilities and activities.	Number of instances of radiological releases that exceeded regulatory limits	0	March 31, 2022	0	1[26]	0
	Number of instances of hazardous releases that exceeded regulatory limits	≤5	March 31, 2022	9[27]	2	2
	Percentage of Independent Environmental Monitoring (IEMP) samples (food, water, air, soil, sediment, sand and vegetation) that met guidelines	≥95%	March 31, 2022	97%	98.9%	94.9%[28]
Canadians are protected from radiation resulting from nuclear facilities and activities.	Number of radiation doses to members of the public that exceeded regulatory limits	0	March 31, 2022	1[29]	0	0
	Number of radiation doses to workers that exceeded regulatory limits	0	March 31, 2022	1[30]	2[31]	3[32]
Nuclear material and substances, facilities and activities are secure and used for peaceful purposes.	Number of instances of non-peaceful or malicious use of Canadian exports of nuclear substances, equipment and information	0	March 31, 2022	0	0	0
	Number of lost or stolen radioactive sealed sources	≤2	March 31, 2022	0	0	0
	Canada's international commitments to the International Atomic Energy Agency (IAEA) with respect to nuclear safeguards and verification are met	IAEA broader conclusion	December 31, 2022	Met	Met	Met
Canadians, including Indigenous peoples, have meaningful information about, and the opportunity to participate in, the nuclear regulatory process.	Percentage of Commission proceedings that were accessible to members of the public and Indigenous peoples	>90%	March 31, 2022	100%	100%	100%
	Percentage of Commission proceedings for which the Participant Funding Program (PFP) was made available to members of the public and Indigenous peoples	>90%	March 31, 2022	100%	100%	100%
	Percentage of Commission proceedings documents that were available in a timely manner on the CNSC external website upon request by members of the public and Indigenous peoples	> 90%	March 31, 2022	100%	100%	100%
	Number of self-identified Indigenous groups and organizations who participated in CNSC proceedings	Increasing trend	March 31, 2022	18[33]	22	18[34]

The financial, human resources and performance information for the Canadian Nuclear Safety Commission's program inventory is available in the GC InfoBase[35].

Planned budgetary spending for Nuclear Regulation

2022–23 budgetary spending (as indicated in Main Estimates)	2022–23 planned spending	2023–24 planned spending	2024–25 planned spending
96,985,453	104,496,124	105,177,164	106,505,624

Financial, human resources and performance information for the Canadian Nuclear Safety Commission's program inventory is available in the GC InfoBase[35].

Planned human resources for Nuclear Regulation

2022–23 planned full-time equivalents	2023–24 planned full-time equivalents	2024–25 planned full-time equivalents
613	608	608

Financial, human resources and performance information for the Canadian Nuclear Safety Commission's program inventory is available in the GC InfoBase[35].

INTERNAL SERVICES: PLANNED RESULTS

Description

Internal services are the services that are provided within a department so that it can meet its corporate obligations and deliver its programs. There are 10 categories of internal services:

- management and oversight
- communications
- legal
- human resources management
- financial management
- information management
- information technology
- real property management
- materiel management
- acquisition management

Reimagine the workplace

The pandemic has shown us the benefits and drawbacks of a remote workforce and changed the expectations of our employees. Even pre-pandemic, the pace of change had been accelerating; this requires new ways of working to stay relevant, developing the flexibility to adapt to new changes as they occur and capitalizing on technology to improve our work experience. Given these change drivers, the CNSC launched the Reimagine the Workplace Initiative (RWI) to look at the future of workplace at the CNSC. Looking ahead to 2022–23, the CNSC will continue to advance the RWI goals, which include moving away from large centralized office locations to a hybrid model (blending both telework and office teams and spaces), and supporting a new approach to how work is managed so that managers and employees can thrive in this new hybrid model.

Planning highlights

Diversity, equity and inclusion are fundamental to the CNSC's regulatory safety culture and critical to spurring innovation and team collaboration. The CNSC has taken deliberate actions to build a healthy, collaborative workplace and a supportive culture for employees. In 2022–23, the CNSC will update its Diversity, Equity and Inclusion Plan to include initiatives such as:

- establishing three new employee networks: Accessibility Network, a Visible Minority Network, and LGBTQ2+ Network
- developing an accessibility plan, to respond to the requirements[36] under the *Accessible Canada Act*[37] the December 2022 deadline. The CNSC will work to identify how it will find and remove current and future barriers, consulting individuals with disabilities throughout the process.
- establishing a pay equity plan by September 2024 under the *Pay Equity Act*[38] to identify and where it exists, correct gender wage gaps. To accomplish this, the CNSC will form an employee-employer pay equity committee as required under the Act that will work to identify job classes, determine which job classes are predominantly held by women or men, value the work done in each, calculate total compensation and determine if there are differences in compensation between jobs of equal value.

Planned budgetary spending for internal services

2022–23 budgetary spending (as indicated in Main Estimates)	2022–23 planned spending	2023–24 planned spending	2024–25 planned spending
46,696,700	50,312,948	50,640,857	51,280,486

Planned human resources for internal services

2022–23 planned full-time equivalents	2023–24 planned full-time equivalents	2024–25 planned full-time equivalents
284	282	282

PLANNED SPENDING AND HUMAN RESOURCES

This section provides an overview of the department's planned spending and human resources for the next three fiscal years and compares planned spending for 2022–23 with actual spending for the current year and the previous year.

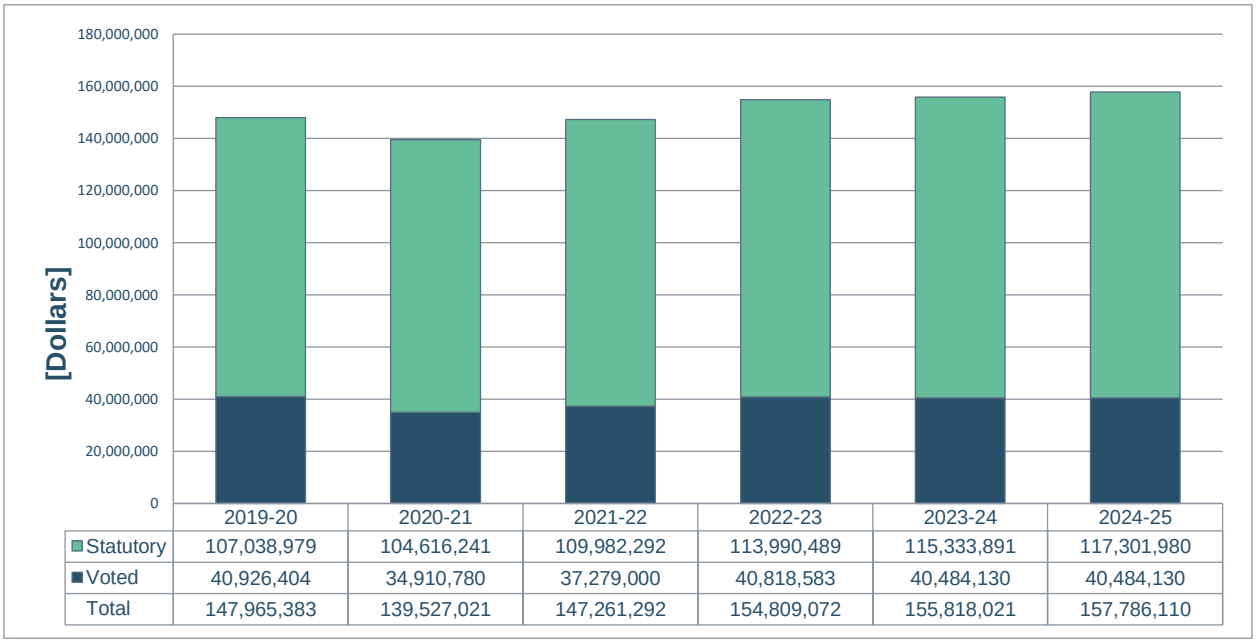
Planned spending

Departmental spending 2019–20 to 2024–25

The following graph presents planned (voted and statutory) spending over time.

The CNSC is financed by the Government of Canada through voted Parliamentary and statutory authorities. Included in the statutory appropriation is a revenue-spending authority, which allows the CNSC to spend most licence fee revenue, as well as the funding for contributions to employee benefit plans. The voted authority provides funding for activities exempt from paying fees (i.e., hospitals and universities) and activities with respect to Canada's international obligations (including non-proliferation activities), public responsibilities such as emergency management and public information programs, and the updating of the Nuclear Safety Control Act and its associated regulations.

The budgetary planning summary section provides variance explanations on year to year fluctuations in spending.



	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Statutory	107,038,979	104,616,241	109,982,292	113,990,489	115,333,891	117,301,980
Voted	40,926,404	34,910,780	37,279,000	40,818,583	40,484,130	40,484,130
Total	147,965,383	139,527,021	147,261,292	154,809,072	155,818,021	157,786,110

Budgetary planning summary for core responsibilities and internal services (dollars)

The following table shows information on spending for each of the Canadian Nuclear Safety Commission's core responsibilities and for its internal services for 2022–23 and other relevant fiscal years.

Core responsibilities and internal services	2019–20 actual expenditures	2020–21 actual expenditures	2021–22 forecast spending	2022–23 budgetary spending (as indicated in Main Estimates)	2022–23 planned spending	2023–24 planned spending	2024–25 planned spending
Nuclear Regulation	101,570,723	92,862,646	97,781,498	96,985,453	104,496,124	105,177,164	106,505,624
Subtotal	101,570,723	92,862,646	97,781,498	96,985,453	104,496,124	105,177,164	106,505,624
Internal services	46,394,660	46,664,375	49,479,794	46,696,700	50,312,948	50,640,857	51,280,486
Total	147,965,383	139,527,021	147,261,292	143,682,153	154,809,072	155,818,021	157,786,110

The $8.5 million decrease in actual spending from $148.0 million in 2019–20 to $139.5 million in 2020–21 is mainly due to a decrease in travel expenditures, with management implementing extensive restrictions as a consequence of the COVID-19 pandemic and lower personnel costs resulting from a decrease in FTE utilization as hiring was halted by the pandemic.

Planned spending is forecasted to increase by $7.8 million from $139.5 million in 2020-21 to $147.3 million in 2021–22 due largely to higher personnel costs as a result of hiring halted by the pandemic resuming, in addition to negotiated salary adjustments. The planned spending in 2021–22 also reflects an increase in professional and special services for management consultants engaged in a strategic review of the CNSC's operations and for information technology and telecommunications consultants.

The CNSC's planned spending is forecasted to increase by $7.5 million to $154.8 million in 2022–23, from $147.3 million in 2021–22, due to a forecasted increase in FTE utilization, cost-of-living increases, including salary and wages, anticipated resumption of travels, as well as planned investments in the new Government of Canada initiative to modernize the workplace for the public service.

The CNSC's overall spending plans indicate no significant changes over the 2022–23 to 2024–25 planning periods. The increase in planned spending from $154.8 million in 2022–23 to $155.8 million in 2023–24 and $157.8 million in 2024-25 are primarily attributable to cost-of-living increases, including salary and wages.

The difference between the 2022–23 Main Estimates of $143.7 million and the 2022–23 planned spending of $154.8 million is due to the practice of including only the employee benefit costs associated with the voted appropriation funds in the Main Estimates, while including the additional employee benefits associated with the revenue spending authority in the planned spending. Fees collected by the CNSC represent approximately 70% of planned spending.

Planned human resources

The following table shows information on human resources, in full-time equivalents (FTEs), for each of the Canadian Nuclear Safety Commission's core responsibilities and for its internal services for 2022–23 and the other relevant years.

Human resources planning summary for core responsibilities and internal services

Core responsibilities and internal services	2019–20 actual full-time equivalents	2020–2021 actual full-time equivalents	2021–22 forecast full-time equivalents	2022–23 planned full-time equivalents	2023–24 planned full-time equivalents	2024–25 planned full-time equivalents
Nuclear regulation	605	581	604	613	608	608
Subtotal	605	581	604	613	608	608
Internal services	281	269	283	284	282	282
Total	886	850	887	897	890	890

The decrease in actual FTEs from 886 in 2019–20 to 850 in 2020–21 is primarily a result of staffing delays due to the COVID 19 pandemic. The forecasted increase from 850 FTEs in 2020–21 to 887 FTEs in 2021-22 is attributable to the staffing of vacant positions as staffing delays were experienced in 2020–21 due to the COVID-19 pandemic.

The FTE forecast anticipates marginal changes from 887 FTEs in 2021–22 to 897 FTEs in 2022–23, and 890 FTEs in both 2023–24 and 2024–25.

Estimates by vote

Information on the Canadian Nuclear Safety Commission's organizational appropriations is available in the 2022–23 Main Estimates[39].

Future-oriented condensed statement of operations

The future-oriented condensed statement of operations provides an overview of the Canadian Nuclear Safety Commission's operations for 2021–22 to 2022–23.

The forecast and planned amounts in this statement of operations were prepared on an accrual basis. The forecast and planned amounts presented in other sections of the Departmental Plan were prepared on an expenditure basis. Amounts may therefore differ.

A more detailed future-oriented statement of operations and associated notes, including a reconciliation of the net cost of operations to the requested authorities, are available on the Canadian Nuclear Safety Commission's website[40].

Future-oriented condensed statement of operations for the year ending March 31, 2023 (dollars)

Financial information	2021–22 forecast results	2022–23 planned results	Difference (2022–23 planned results minus 2021–22 forecast results)
Total expenses	162,481,000	169,616,000	7,135,000
Total revenues	120,176,000	123,991,000	3,815,000
Net cost of operations before government funding and transfers	42,305,000	45,625,000	3,320,000

The CNSC's 2022–23 net cost of operations of $45.6 million reflects an increase of $3.3 million (or 7.9%) when compared to the 2021–22 forecasted results, due to a projected decrease in appropriation lapse. This change is a result of an increase in total expenses of $7.1 million (or 4.4%). This is primarily due to forecasted increases in FTE utilization, cost-of-living increases, including salary and wages and a potential increase in travel expenditures, contingent upon the result of a change in COVID-19 travel restrictions. Total revenues are forecasted to increase by $3.8 million (or 3.2%). Regulatory fee revenues fund most of the CNSC's expenses, and the increase in total revenues is mainly a result of the forecasted increases in expenses for salary and wages and travel.

CORPORATE INFORMATION

Organizational profile

Appropriate minister: Jonathan Wilkinson

Institutional head: Rumina Velshi[41]

Ministerial portfolio: Natural Resources Canada[42]

Enabling instrument: *Nuclear Safety and Control Act*[43]

Year of incorporation: 2000

Other: The CNSC's headquarters are located in Ottawa, Ontario. The CNSC maintains 11 regional offices, both at major facilities and elsewhere, in order to conduct inspections of licensees across the country on a regular basis.

Raison d'être, mandate and role: who we are and what we do

Information on the Canadian Nuclear Safety Commission's raison d'être, mandate and role is available on the department's website[44].

Operating context

Information on the operating context is available on the Canadian Nuclear Safety Commission's website[44].

Reporting framework

The Canadian Nuclear Safety Commission's approved departmental results framework and program inventory for 2022–23 are as follows.

Core Responsibility: Nuclear Regulation	
Description: The CNSC regulates the development, production and use of nuclear energy and substances to protect health, safety, security of persons and the environment; implements Canada's international commitments on the peaceful use of nuclear energy; and disseminates objective scientific and regulatory information to members of the public. The CNSC maintains a regulatory framework and conducts licensing (including environmental protection reviews), compliance verification and enforcement. The CNSC is committed to building and maintaining the confidence of the public and Indigenous peoples through transparent, open and inclusive regulatory processes.	
Departmental Results	**Indicators**
R 1: The environment is protected from releases from nuclear facilities and activities.	Number of instances of radiological releases that exceeded regulatory limits
	Number of instances of hazardous releases that exceeded regulatory limits
	Percentage of Independent Environmental Monitoring Program (IEMP) samples (food, water, air, soil, sediment, sand and vegetation) that met guidelines

R 2: Canadians are protected from radiation resulting from nuclear facilities and activities.	Number of radiation doses to members of the public that exceeded regulatory limits
	Number of radiation doses to workers that exceeded regulatory limits
R 3: Nuclear material and substances, facilities and activities are secure and used for peaceful purposes.	Number of instances of non-peaceful or malicious use of Canadian exports of nuclear substances, equipment and information
	Number of lost or stolen radioactive sealed sources
	Canada's international commitments to the International Atomic Energy Agency (IAEA) with respect to nuclear safeguards and verification are met
R 4: Canadians, including Indigenous peoples, have meaningful information about, and the opportunity to participate in, the nuclear regulatory process.	Percentage of CNSC proceedings that were accessible to members of the public and Indigenous peoples
	Percentage of CNSC proceedings for which the Participant Funding Program (PFP) was made available to members of the public and Indigenous peoples
	Percentage of public proceedings documents that were available in a timely manner upon request by members of the public and Indigenous peoples
	Number of self-identified Indigenous groups and organizations who participated in CNSC proceedings

Program Inventory				
Nuclear Fuel Cycle	Nuclear Reactors	Nuclear Substances and Prescribed Equipment	Nuclear Non-Proliferation	Scientific, Regulatory and Public Information
Internal Services				

SUPPORTING INFORMATION ON THE PROGRAM INVENTORY

Supporting information on planned expenditures, human resources, and results related to the Canadian Nuclear Safety Commission's program inventory is available in the GC InfoBase[Error! Bookmark not defined.].

SUPPLEMENTARY INFORMATION TABLES

The following supplementary information tables are available on the Canadian Nuclear Safety Commission's website[44]:

- Reporting on Green Procurement
- Details on transfer payment programs
- Gender-based analysis plus

FEDERAL TAX EXPENDITURES

The Canadian Nuclear Safety Commission's Departmental Plan does not include information on tax expenditures.

Tax expenditures are the responsibility of the Minister of Finance. The Department of Finance Canada publishes cost estimates and projections for government-wide tax expenditures each year in the Report on Federal Tax Expenditures[45]. This report provides detailed information on tax expenditures, including objectives, historical background and references to related federal spending programs, as well as evaluations, research papers and gender-based analysis plus.

ORGANIZATIONAL CONTACT INFORMATION

Mailing address

Head office
280 Slater Street
P.O. Box 1046, Station B
Ottawa, Ontario K1P 5S9
Canada

Telephone: 613-995-5894

Toll free: 1-800-668-5284

Fax: 613-995-5086

Email: cnsc.info.ccsn@cnsc-ccsn.gc.ca

Website(s): www.nuclearsafety.gc.ca

APPENDIX: DEFINITIONS

appropriation (crédit)

Any authority of Parliament to pay money out of the Consolidated Revenue Fund.

budgetary expenditures (dépenses budgétaires)

Operating and capital expenditures; transfer payments to other levels of government, organizations or individuals; and payments to Crown corporations.

core responsibility (responsabilité essentielle)

An enduring function or role performed by a department. The intentions of the department with respect to a core responsibility are reflected in one or more related departmental results that the department seeks to contribute to or influence.

Departmental Plan (plan ministériel)

A report on the plans and expected performance of a department over a 3-year period. Departmental Plans are tabled in Parliament each spring.

departmental result (résultat ministériel)

A consequence or outcome that a department seeks to achieve. A departmental result is often outside departments' immediate control, but it should be influenced by program-level outcomes.

departmental result indicator (indicateur de résultat ministériel)

A factor or variable that provides a valid and reliable means to measure or describe progress on a departmental result.

departmental results framework (cadre ministériel des résultats)

A framework that consists of the department's core responsibilities, departmental results and departmental result indicators.

Departmental Results Report (rapport sur les résultats ministériels)

A report on a department's actual accomplishments against the plans, priorities and expected results set out in the corresponding Departmental Plan.

experimentation (expérimentation)

The conducting of activities that seek to first explore, then test and compare, the effects and impacts of policies and interventions in order to inform evidence-based decision-making, and improve outcomes for Canadians, by learning what works and what doesn't. Experimentation is related to, but distinct form innovation (the trying of new things), because it involves a rigorous comparison of results. For example, using a new website to communicate with Canadians can be an innovation; systematically testing the new website against existing outreach tools or an old website to see which one leads to more engagement, is experimentation.

full-time equivalent (équivalent temps plein)

A measure of the extent to which an employee represents a full person-year charge against a departmental budget. Full-time equivalents are calculated as a ratio of assigned hours of work to scheduled hours of work. Scheduled hours of work are set out in collective agreements.

gender-based analysis plus (GBA Plus) (analyse comparative entre les sexes plus [ACS Plus])
An analytical process used to assess how diverse groups of women, men and gender-diverse people experience policies, programs and services based on multiple factors including race, ethnicity, religion, age, and mental or physical disability.

government-wide priorities (priorités pangouvernementales)

For the purpose of the 2021–22 Departmental Plan, government-wide priorities refers to those high-level themes outlining the government's agenda in the 2020 Speech from the Throne, namely: Protecting Canadians from COVID-19; Helping Canadians through the pandemic; Building back better – a resiliency agenda for the middle class; The Canada we're fighting for.

horizontal initiative (initiative horizontale)

An initiative in which two or more federal organizations are given funding to pursue a shared outcome, often linked to a government priority.

non-budgetary expenditures (dépenses non budgétaires)

Net outlays and receipts related to loans, investments and advances, which change the composition of the financial assets of the Government of Canada.

performance (rendement)

What an organization did with its resources to achieve its results, how well those results compare to what the organization intended to achieve, and how well lessons learned have been identified.

plan (plan)

The articulation of strategic choices, which provides information on how an organization intends to achieve its priorities and associated results. Generally a plan will explain the logic behind the strategies chosen and tend to focus on actions that lead up to the expected result.

planned spending (dépenses prévues)

For Departmental Plans and Departmental Results Reports, planned spending refers to those amounts presented in the Main Estimates.

A department is expected to be aware of the authorities that it has sought and received. The determination of planned spending is a departmental responsibility, and departments must be able to defend the expenditure and accrual numbers presented in their Departmental Plans and Departmental Results Reports.

program (programme)

Individual or groups of services, activities or combinations thereof that are managed together within the department and focus on a specific set of outputs, outcomes or service levels.

program inventory (répertoire des programmes)

Identifies all of the department's programs and describes how resources are organized to contribute to the department's core responsibilities and results.

result (résultat)

An external consequence attributed, in part, to an organization, policy, program or initiative. Results are not within the control of a single organization, policy, program or initiative; instead they are within the area of the organization's influence.

statutory expenditures (dépenses législatives)

Expenditures that Parliament has approved through legislation other than appropriation acts. The legislation sets out the purpose of the expenditures and the terms and conditions under which they may be made.

target (cible)

A measurable performance or success level that an organization, program or initiative plans to achieve within a specified time period. Targets can be either quantitative or qualitative.

voted expenditures (dépenses votées)

Expenditures that Parliament approves annually through an Appropriation Act. The vote wording becomes the governing conditions under which these expenditures may be made.

ENDNOTES

1 International Atomic Energy Agency, Commission on Safety Standards Terms of Reference, https://www-ns.iaea.org/downloads/standards/css-tor.pdf#:~:text=The%20Commission%20on%20Safety%20Standards%20%28CSS%29%20is%20a,the%20overall%20programme%20on%20regulatory%20aspects%20of%20safety.
2 Government of Canada, GCworkplace: A modern workplace for the new public service, https://www.tpsgc-pwgsc.gc.ca/biens-property/mt-wp/mt-wp-eng.html
3 Canada's Small Modular Reactor, SMR Action Plan, https://smractionplan.ca/
4 Canadian Nuclear Safety Commission, Pre-Licensing Vendor Design Review, https://nuclearsafety.gc.ca/eng/reactors/power-plants/pre-licensing-vendor-design-review/index.cfm
5 Government of Canada, Laboratories Canada, https://www.ic.gc.ca/eic/site/063.nsf/eng/h_97809.html
6 United Nations 2030 Agenda for Sustainable Development, https://sdgs.un.org/2030agenda
7 Canadian Nuclear Safety Commission, Bruce A and B Nuclear Generating Station, http://nuclearsafety.gc.ca/eng/reactors/power-plants/nuclear-facilities/bruce-nuclear-generating-station/index.cfm
8 Canadian Nuclear Safety Commission, Darlington Nuclear Generating Station, https://nuclearsafety.gc.ca/eng/reactors/power-plants/nuclear-facilities/darlington-nuclear-generating-station/index.cfm
9 Canadian Nuclear Safety Commission, Point Lepreau Nuclear Generating Station, https://nuclearsafety.gc.ca/eng/reactors/power-plants/nuclear-facilities/point-lepreau-nuclear-generating-station/index.cfm
10 Canadian Nuclear Safety Commission, Environmental assessments, http://www.nuclearsafety.gc.ca/eng/resources/environmental-protection/environmental-assessments/index.cfm
11 Canadian Nuclear Laboratories, Near Surface Disposal Facility, https://www.cnl.ca/environmental-stewardship/near-surface-disposal-facility-nsdf/
12 Canadian Nuclear Laboratories, Nuclear Power Demonstration Closure Project, https://www.cnl.ca/environmental-stewardship/nuclear-power-demonstration-closure-project/
13 NexGen Energy, Rook 1, https://nexgenenergy.ca/projects/rook-1/
14 Denison Mines, Wheeler River Project, https://www.denisonmines.com/projects/core-projects/wheeler-river-project/
15 Canadian Nuclear Laboratories, Whiteshell Reactor #1 Decommissioning, https://www.cnl.ca/environmental-stewardship/wr-1-reactor-decommissioning/
16 Nuclear Waste Management Organization, About Adaptive Phased Management, https://www.nwmo.ca/en/Canadas-Plan/About-Adaptive-Phased-Management-APM
17 Canadian Nuclear Safety Commission, Darlington New Nuclear Project, https://nuclearsafety.gc.ca/eng/resources/status-of-new-nuclear-projects/darlington/index.cfm
18 Canadian Nuclear Safety Commission, Global First Power Micro Modular Reactor Project, https://nuclearsafety.gc.ca/eng/reactors/research-reactors/nuclear-facilities/chalk-river/global-first-micro-modular-reactor-project.cfm
19 Canadian Nuclear Safety Commission, Independent Environmental Monitoring Program, http://nuclearsafety.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/index.cfm

20 Justice Laws Website, *Nuclear Security Regulations*, https://laws-lois.justice.gc.ca/eng/regulations/sor-2000-209/

21 Canadian Nuclear Safety Commission, Regulatory Initiative: Regulations amending the *Nuclear Security Regulations*, https://nuclearsafety.gc.ca/eng/acts-and-regulations/regulatoryplan/forward-regulatory-plan-details/index.cfm#R3

22 Canadian Nuclear Safety Commission, Potassium iodide (KI) Pill Working Group, https://nuclearsafety.gc.ca/eng/resources/emergency-management-and-safety/potassium-iodide-pill-working-group.cfm

23 Canadian Nuclear Safety Commission, Participant Funding Program, https://nuclearsafety.gc.ca/eng/the-commission/participant-funding-program/opportunities/index.cfm

24 Let's Talk Nuclear Safety, https://www.letstalknuclearsafety.ca/

25 Canada, Open Government, https://open.canada.ca/en

26 DraxImage event, reported to the Commission in December 2019. Jubilant Draximage Inc. reported that its weekly sampling monitoring results were above the weekly release limit for I-131 as specified in its licence. On November 20, 2019 the average weekly release concentration was calculated as 322 Bq/m^3 for I-131 and the weekly release limit for I-131 is 175 Bq/m^3.

27 In 2018–19, there were 9 total exceedances of provincial hazardous substances limits, all at nuclear power plants. At Pickering Nuclear Generating Station (NGS), there were 4 exceedances of provincial hazardous substances limits. One exceedance was for morpholine concentration, 2 were for oil and grease, and 1 was an effluent temperature exceedance. At Darlington NGS, one morpholine result was slightly above provincial hazardous substances limits. At Bruce NGS, there were 2 toxicity exceedances and 2 ammonia exceedances of the provincial hazardous substances limits. The number of exceedances are related to minor sporadic issues at the nuclear power plants and vary from year to year. For all instances, CNSC staff reviewed the event and concluded that the licensee took appropriate corrective actions. The exceedances were discussed in CMD 19-M30, scheduled for November 6–7, 2019. The provincial hazardous substances regulatory limit exceedances have always been reported in the CNSC's regulatory oversight reports. However, in previous years, the CNSC had not reported this information at the departmental level, as it was considered duplicative to any provincial reporting. In 2018–19, the CNSC started to report these exceedances at the departmental level as well to improve transparency and dissemination of information. CNSC staff confirmed that the public in the vicinity of these nuclear power plants were protected and that there were no expected health impacts resulting from exceedances of provincial hazardous substances limits at these nuclear power plants.

28 In fiscal year 2020–21, 94.9% of IEMP results met the guidelines. Exceedances for the 2020–21 fiscal year were expected, and similar to the values reported by CNSC licensees' environmental monitoring programs. No unexpected exceedances were noted. There were 3 exceedances at Port Hope Conversion Facility. Three fluoride concentrations measured in lake water samples were slightly above the CCME freshwater quality guideline for the protection of aquatic life but were below Health Canada's guidelines for drinking water quality and well below the CCME toxicity benchmark for sensitive aquatic biota. Thus, adverse effects are not expected. There were 26 exceedances at Cigar Lake out of 468 samples. The exceedances were selenium and polonium-210 in fish tissue samples collected at both the exposure station, which could potentially be impacted by the operation of the facility, and the reference station, which is not impacted by the operation of the facility. Thus, the exceedances are not attributed to the facility. These results were also within

the natural background range for the region. Exceeding a guideline does not mean that there is an expected health impact; rather, it triggers a more in-depth assessment by CNSC staff to ensure that the health and safety of people and the environment are protected. In all noted cases, CNSC staff concluded that the public and environment are protected from ongoing releases from nuclear facilities and activities. More information in IEMP results for each site is available on the CNSC website.

29 During the period of March 1, 2017 to February 28, 2018, a member of the public received a cumulative dose of approximately 1.06 mSv. This dose is above the annual regulatory effective dose limit of 1 mSv for members of the public, but would not result in any effect on the health and safety of the person. This person was a non-nuclear energy worker responsible for transporting packages, the majority of which contain nuclear substances. CNSC staff reviewed an investigation report submitted by the licensee and are satisfied with the actions taken to prevent a recurrence. The incident was reported to the Commission in Commission member document (CMD) 18-M43 on August 22, 2018.

30 In November 2018, a nuclear energy worker received an equivalent dose of approximately 1,680 mSv to the left hand, in excess of the annual regulatory equivalent dose limit of 500 mSv. No health effects have been observed since the incident and no physical effects due to the exposure are expected. The incident was reported to the Commission in CMD 18-M65 on December 13, 2018.

31 Unexplained dose of 1.85 mSv on quarterly badge reading of a non-nuclear energy worker, which exceeded the annual dose limit of 1 mSv/year. No health effects were observed or expected as a consequence of this event. This event was reported to the Commission in November 2019 in CMD 19-M41. Unexplained dose on quarterly badge reading of a nuclear medicine technologist. NEW worker exceeded both the one-year effective dose limit (recorded dose of 56.91 mSv) and equivalent dose limit for the lens (recorded dose of 174.9 mSv). Investigation concludes that the recorded dose is likely non-personal but rather due to contamination on the dosimeter although this cannot be demonstrated conclusively. No health effects were observed or expected. This event will be reported to the Commission in 2020.

32 In 2020–21, there were 3 occurrences of a worker exceeding a regulatory dose limit. The first instance involved a non-NEW who received an effective dose of 1.28 mSv, which exceeded the annual dose limit of 1 mSv/year. The second instance involved a non-NEW who received an effective dose of 1.3 mSv, which exceeded the annual dose limit of 1 mSv/year. This event was reported to the Commission in January 2021 in CMD 21-M10. The third instance involved a non-NEW who received an effective dose of 1.05 mSv, which exceeded the annual dose limit of 1 mSv/year. Note that there was a fourth event reported to the Commission in 2020/21, although the event occurred in 2019/20. This case involved a non-Nuclear Energy Worker (NEW) who recorded a non-occupational effective dose of 3.54 mSv on their dosimeter. This exceeded the annual dose limit for non-NEWs of 1 mSv/year. This event was reported to the Commission in September 2020 in CMD 20-M27. In all cases, there was no health effect to the worker from the exposures.

33 The decrease in Indigenous participation in 2018–19 relative to 2017–18 is due to fewer total public proceedings.

34 The decrease in Indigenous participation in 2020–21 relative to 2019–20 is due to less overall total number of proceedings, including public proceedings because of the COVID-19 pandemic.

35 GC InfoBase, https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html#start

36 Employment and Social Development Canada, Summary of the proposed Accessible Canada Regulations, https://www.canada.ca/en/employment-social-development/programs/accessible-canada/regulations-summary-act.html#h2.04
37 *Accessible Canada Act*, https://laws.justice.gc.ca/eng/acts/A-0.6/page-1.html
38 Canadian Human Rights Commission, Pay Equity Act, https://www.payequitychrc.ca/en
39 2022–23 Main Estimates, http://www.tbs-sct.gc.ca/hgw-cgf/finances/pgs-pdg/gepme-pdgbpd/index-eng.asp
40 Canadian Nuclear Safety Commission, Future-Oriented Statement of Operations, http://nuclearsafety.gc.ca/eng/resources/publications/reports/quarterly-financial-reports/index.cfm
41 Canadian Nuclear Safety Commission, President, https://nuclearsafety.gc.ca/eng/about-us/organization/president.cfm
42 Natural Resources Canada, http://www.nrcan.gc.ca/home
43 *Nuclear Safety and Control Act,* http://laws-lois.justice.gc.ca/eng/acts/N-28.3/
44 Canadian Nuclear Safety Commission, Departmental Plans, http://www.nuclearsafety.gc.ca/eng/resources/publications/reports/rpp/index.cfm
45 Report on Federal Tax Expenditures, https://www.canada.ca/en/department-finance/services/publications/federal-tax-expenditures.html