Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

CNSC Annual Report 2001-2002

Canada

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Published by Authority of The Honourable Herb Dhaliwal, P.C., M.P.
Minister of Natural Resources Canada

Catalogue number CC171-2002E
ISBN 0-662-32524-9

Please note that the Canadian Nuclear Safety Commission Report on Public Proceedings and Decisions is located on the reverse side of this document.

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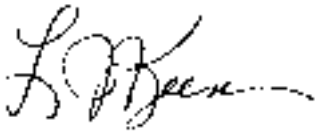
Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

The Honourable Herb Dhaliwal
Minister of Natural Resources Canada
Ottawa, Ontario

Sir:

I have the honour of presenting you with the Annual Report of the Canadian Nuclear Safety Commission for the fiscal year ending March 31, 2002. The report has been prepared and is submitted in accordance with Section 72 of the *Nuclear Safety and Control Act*.



Linda J. Keen
President and Chief Executive Officer

Canada

Message from the President and Chief Executive Officer

Last year, the CNSC embraced three strategic objectives with a goal of becoming one of the best nuclear regulators in the world: ensuring that the CNSC's regulatory regime is effective and efficient; operating with a high level of openness and transparency; and attracting and retaining excellent staff.

Linda J. Keen
President
and Chief Executive Officer

During 2001-2002, the CNSC achieved concrete results in pursuit of these strategic objectives. The outcome, I believe, is that the CNSC is a better nuclear regulator today than one year ago, and better serves Canadians in fulfilling its mandate to protect health, safety, security and the environment, and to respect Canada's international commitments on the peaceful use of nuclear energy.

The strengths and capabilities of the CNSC were illustrated by our thorough response to the events of September 11. The terrorist attacks in the United States created an explicit and immediate nuclear security challenge, and the CNSC responded to this challenge in a timely and effective manner. Security issues remained front-and-centre throughout the year and we continued another phase of assessing our security and that of licensees. Further actions will be taken as necessary in the year to come.

The CNSC improved its effectiveness and efficiency by implementing a number of new initiatives in 2001-2002. For example, a new system for rating safety performance has been introduced to clarify CNSC expectations for licensees and the public. We have also moved to the application of risk-based assessment throughout the regulatory regime to ensure that regulatory effort is directed where it is needed most. The CNSC will soon be implementing an internal on-line licensing initiative in health and also creating a single-window concept for power reactor licensees to further enhance regulatory effectiveness and efficiency. In 2001-2002, the CNSC staff organization was restructured to ensure a clear separation between the Commission and CNSC staff, to clarify roles and responsibilities and to increase accountability. In keeping with

the independence of the Commission from the CNSC staff, the activities of the Commission are detailed in a distinct report on the reverse side of this document.

With respect to international activities, the CNSC continued its industry outreach program on the implementation of the Canada/ International Atomic Energy Agency (IAEA) Additional Protocol that entered into force in 2000. Under the agreement, the IAEA verifies that Canada is fulfilling its commitment to not develop nuclear weapons or other nuclear explosive devices. The IAEA successfully conducted complementary access visits for the first time in Canada at 14 nuclear sites and other locations.

Our openness and transparency objective was the driver for publishing more comprehensive Commission Records of Proceedings, including Reasons for Decisions, during 2001-2002. Over the past year, the CNSC held meetings with public interest groups to hear their concerns, addressed boards of trade to communicate with the business community and enhanced relationships with municipal governments to understand the challenges of local communities.

To address our objective of attracting and retaining excellent staff, the CNSC began a pilot internship program to attract new employees to the field of power reactor regulation. The CNSC also began supporting the Canadian Universities Network for Excellence in Nuclear Engineering.

These are but a few examples of achievements illustrating the CNSC's continuous improvement. Under our Strategic Plan (2002-2007), the CNSC has identified new initiatives to become a better regulator. In the coming year, the CNSC will measure its performance against the Strategic Plan and will communicate these results to Canadians.

The key element to our success is our staff who, through their knowledge, professionalism and continued commitment, are making the CNSC one of the best nuclear regulators in the world. I commend all CNSC staff for facing the challenges of 2001-2002 with dedication and integrity.

Sincerely,

Linda J. Keen

Executive Committee of the CNSC

Irene Gendron *Senior Counsel and Manager, Legal Services Unit*

Mike Taylor *Executive Director, Office of Regulatory Affairs*

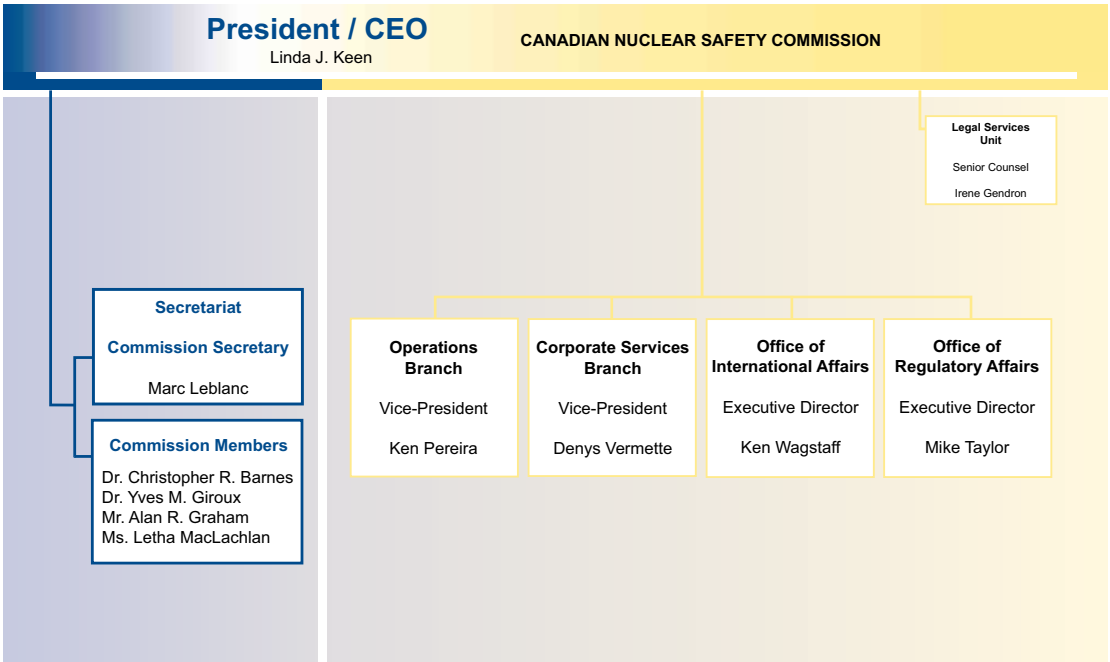
Marc Leblanc *Commission Secretary*

Linda J. Keen *President and Chief Executive Officer*

Ken Pereira *Vice-President, Operations*

Ken Wagstaff *Executive Director, Office of International Affairs*

Denys Vermette *Vice-President, Corporate Services*



Becoming a Better Regulator

A Plan for Progress

With a mission to regulate the use of nuclear energy and materials to protect health, safety, security and the environment, and to respect Canada's international commitments on the peaceful use of nuclear energy, the CNSC has a responsibility to Canadians to pursue excellence in fulfilling its responsibilities.

During 2001-2002, the CNSC embarked on an ambitious program to become one of the best nuclear regulators in the world. A better regulator will provide Canadians with a safe nuclear industry in the most effective and efficient approach. The *Nuclear Safety and Control Act* (NSCA) and the new responsibilities and powers it confers upon the CNSC have necessitated many changes at the CNSC. In addition, externally-driven developments, such as the introduction of new processes and technologies, have spurred us to look with a critical eye at the way we regulate.

We have begun by analyzing our business processes and organizational structure to identify how and where change for the better could be made. Where possible, we have studied other regulators to identify best practices and to benchmark our performance.

Our Framework for Excellence

The CNSC's Framework for Excellence was adopted as a foundation for success. The Framework has four pillars which provide the CNSC with the tools necessary for the maintenance of excellence and to provide Canada with one of the best nuclear regulators in the world.

The *Nuclear Safety and Control Act* and Management Charter: The NSCA provides the CNSC with the necessary mandate, tools and independence to regulate the nuclear industry effectively. Our Management Charter defines our mission, mandate, vision and values.

A Strong and Coherent Strategic Planning Process: The CNSC Strategic Plan provides the direction and focus required to successfully carry out our mandate. The plan gives broad corporate direction by identifying where efforts need to be focused and provides guidance for setting priorities and allocating resources. The introduction of the CNSC's Strategic Objectives signals our intention towards stronger performance measurement.

A Well Designed Organizational Structure: The CNSC's organizational structure must allocate human and financial resources appropriately to ensure that our regulatory mandate is fulfilled as effectively and efficiently as possible.

Effective Information and Knowledge Management: Effective information and knowledge management ensures that the CNSC collects, retains, stores and disseminates the knowledge, expertise, and information necessary to maintain regulatory excellence.

Our Strategic Objectives

In early 2001, the CNSC adopted three strategic objectives which must be achieved to become one of the best nuclear regulators in the world. These objectives were defined following an assessment of regulatory and business practices and programs and in recognition of recurring themes among areas identified for improvement.

Ensure that the CNSC regulatory regime is effective and efficient: Regulatory effectiveness equates with safety, and safety is always the first priority of the CNSC. Regulatory efficiency provides value-for-money for both the public and licensees, to ensure regulatory effort is placed where necessary.

Ensure that the CNSC operates with a high level of openness and transparency: By communicating with licensees and the public in a timely, understandable and accountable manner, an effective dialogue in pursuit of safety is maintained. Trust in and among the regulator, licensees, and the public is enhanced as well.

Ensure that the CNSC attracts and retains excellent staff: The CNSC must seek out, attract, and retain people with the skills and knowledge necessary to effectively carry out its regulatory mandate. This need is particularly acute for scientific and technical positions for which there is currently a limited pool of talent to draw from.

A comprehensive Strategic Plan (2002-2007) and Corporate Plan (2002-2004) have been developed to achieve these objectives. A solid foundation has been laid for improvements the CNSC will be instituting in the coming years.

Key Developments in 2001-2002

The CNSC's ongoing pursuit of excellence includes the implementation of new initiatives in support of our strategic objectives and upholding the highest standards in ongoing enforcement and compliance activities. As demonstrated by the key developments listed below, the CNSC has made significant progress in achieving regulatory excellence throughout 2001-2002.

April 2001 The Office of Regulatory Affairs was created to enhance the CNSC's effectiveness and efficiency. ◆ The Office of International Affairs was created to strengthen the CNSC's international nuclear non-proliferation and safeguards business line. ◆ The CNSC instituted a comprehensive automated resource management process to ensure that regulatory effort is more accurately accounted for, and also strengthened its financial management systems to support a revised cost recovery program which will be in place in 2003.

May 2001 The CNSC published its compliance policy to document basic principles and directives for a more comprehensive compliance program. To support the policy, corporate-wide service line compliance strategies were developed to ensure a more consistent approach to promotion, verification and enforcement activities.

June 2001 The CNSC hired the first eight interns for a pilot internship program in power reactor regulation to ensure that we continue to have a suitable pool of talent from which to draw new employees. The new interns began an intensive multi-disciplinary training program that will last two years.

July 2001 The Secretariat was restructured and separated from the CNSC staff organization to improve the independence of and support for the Commission.

August 2001 The CNSC committed funding to the Canadian Universities Network for Excellence in Nuclear Engineering to enhance the viability and success of nuclear engineering education programs in Canada.

September 2001 The CNSC Emergency Operations Centre was activated to monitor and respond to the terrorist attacks in the United States. Major Canadian nuclear facilities were immediately ordered to enhance security measures. ◆ Risk-based principles and assessments were used in the CNSC review of security at licensed facilities. ◆ An integrated risk management framework for regulatory activities was developed during the reporting period.

October 2001 CNSC President met with executives of Class I facilities to deliver an order for further enhanced security measures. ◆ The CNSC completed the second phase of its Early Identification of Management Potential Program which, through a rigorous screening process, identified 13 employees most suited for possible succession to management positions in technical disciplines in future years.

November 2001 Enhanced security measures were ordered for selected Class II facilities. ◆ The Corporate Services Branch was restructured to deliver improvements in the management of corporate functions, including strategic planning responsibilities to facilitate the integration of non-financial elements with financial elements in support of modern comptrollership principles.

January 2002 The operational directorates were restructured to consolidate all regulatory functions previously being delivered by three directorates under the management of the Vice-President, Operations Branch. The new Operations Branch consists of the Directorates of Power Reactor Regulation, Nuclear Cycle and Facilities Regulation, Nuclear Substance Regulation, Assessment and Analysis, and Operational Strategies. ◆ An improved rating system for ranking the safety performance of major nuclear facilities was implemented to clarify CNSC expectations and findings. The more standardized approach improves the consistency

and quality of the information provided by CNSC staff to the Commission to facilitate its licensing decision-making. Issues are categorized and presented in a consistent format aligned with CNSC licensing requirements, trends in performance are easier to show, and an indication of regulatory responses or compliance action is possible.

February 2002 The CNSC reported progress in implementing recommendations made by the Office of the Auditor General (OAG) in a December 2000 value-for-money audit of power reactor regulation. Progress on responding to the OAG recommendations was on schedule according to the CNSC Action Plan of February, 2001.

March 2002 The CNSC began consultations with licensees for input on the redesign of its cost recovery program. ◆ A more flexible, consistent and rational basis for recommending licence periods was proposed, which takes into account the relative risk posed by the facility, activity or equipment being licensed. In some cases, the past standard two-year licence period had a number of shortcomings including a lack of flexibility and the imposition of a significant regulatory burden. Staff recommendations for licence periods may now vary according to risk assessment of facilities and performance by licensees on designated criteria.

Regulating for Safety

The CNSC Response to September 11

Immediately upon learning of the terrorist attacks in the United States on September 11, 2001, the CNSC activated its Emergency Operations Centre to monitor developments as they unfolded. Within one hour, the CNSC had instructed major licensees to implement enhanced security measures at their facilities.

The CNSC subsequently performed a comprehensive re-evaluation of security measures in place at nuclear facilities and on October 18, the Commission ordered immediate action on a number of additional measures to increase security at Canada's nuclear generating stations and nuclear research and test establishments. The CNSC also delivered a Designated Officer order for new security measures to be put in place at other types of facilities, such as uranium processing and fuel fabrication facilities. CNSC licensees were cooperative and quick to act in responding to the Commission's orders.

As of March 31, 2002, the CNSC has remained in close contact with licensees, and emergency and security organizations - internationally, federally and provincially - to be continually apprised of security concerns. At this time, it is the CNSC's position that the new security measures will be maintained permanently as part of a continuum of improvement in security and safety. In addition, the CNSC continues to investigate other security measures which may be appropriate to ensure the continued safety of Canadians.

In recognition of the exceptional work undertaken in the aftermath of the events of September 11, the CNSC's Security Review Task Force received a Public Service Award in December 2001.

Security

The CNSC monitors and assesses the effectiveness of licensees' security measures for nuclear facilities and nuclear materials, and provides advice and assistance to licensees in determining appropriate application of the *Nuclear Security Regulations*.

During the reporting period, CNSC staff conducted 14 security inspections at Canadian nuclear facilities and four security inspections at waste-management areas, all of which verified compliance with applicable regulations. CNSC staff assessed 20 security plans for the transport of nuclear materials, assessed eight security reports, and monitored and evaluated three security exercises conducted by licensees. As a result, CNSC staff determined that these licensees were prepared to handle a security incident.

In addition to regulating domestic security requirements, the CNSC assessed and approved approximately 150 applications for the import, export, and transit of nuclear materials which had security implications. The CNSC also participated in the IAEA illicit trafficking database program and provided expertise on physical protection at the international level.

Emergency Preparedness

The CNSC maintains an Emergency Response Plan and implements it through a comprehensive emergency preparedness program. Recent events and recognition of the potential vulnerability of nuclear facilities to terrorist acts increased the CNSC's commitment to oversee on-site nuclear emergency response plans and capabilities so that they are appropriate.

The CNSC's emergency preparedness and response activities involve cooperation and planning with licensees, provincial and federal government agencies, and international organizations. The CNSC's role during an emergency is to monitor the response of the licensee, evaluate emergency response actions, provide technical advice and regulatory approval when required, and inform the government and the public on its assessment of the situation.

The CNSC participates in simulated incidents in order to evaluate and improve its emergency response capabilities. During the reporting period, CNSC staff participated in one emergency exercise involving a potential scenario with Atomic Energy of Canada Limited (AECL). This exercise involved full participation with other federal emergency partners and the provincial government. In November 2001, the CNSC's Emergency Response Plan was revised to incorporate new emergency-response elements as a result of lessons learned from exercises and drills.

The CNSC maintains a Duty Officer program to receive and respond to reports on actual or potential incidents, and to respond to those seeking emergency information. The Duty Officer is available on a 24-hour basis, and is the first point of contact in case of emergencies. In 2001-2002, CNSC Duty Officers received and followed up on calls for 200 separate occurrences. Of these, 125 calls were related to simulated incidents, administrative requirements or non-emergency matters, and 75 were related to actual or potential incidents. These ranged from notification of system failures at nuclear generating stations, to stolen or damaged portable nuclear gauges. These incidents were investigated and had no significant safety implications.

Radiation Protection

The CNSC's *Radiation Protection Regulations* prescribe regulatory limits on the dose of radiation that the public and workers may be exposed to from the use of nuclear energy and radioactive materials. Licensees are required to implement radiation protection programs to keep doses below regulatory limits and "As Low As Reasonably Achievable" (the ALARA principle). Annual doses received by workers are recorded in the National Dose Registry, managed by Health Canada and monitored by the CNSC.

The ALARA principle helps ensure that doses received are much lower than the prescribed limits.

During the reporting period, CNSC staff conducted 15 on-site evaluations of radiation protection programs in addition to regular compliance inspections. There was one over-exposure from the previous reporting period confirmed during 2001-2002, and during this reporting period there were six suspected over-exposures among nuclear energy workers which are still under investigation.

The CNSC also evaluates radiation doses to the public living in the vicinity of nuclear generating stations and other nuclear facilities. In 2001-2002, exposures to members of the public were well below regulatory limits. For example, the total radiation dose for 2001 (as a percentage of the legal limit of 1000 microsieverts per year) due to emissions from the Pickering nuclear generating stations was 0.64%, Darlington nuclear generating station (0.11%), Bruce nuclear generating stations (0.27%), and Point Lepreau nuclear generating station (0.05%).

Environmental Protection

The CNSC verifies that licensed activities do not pose an unreasonable risk to the environment. This involves reviewing predicted environmental effects, environmental protection programs, and environmental monitoring data. During the reporting period, there were no releases of radiation to the environment in excess of regulatory limits resulting from licensed activities and operations.

Environmental protection activities carried out by CNSC staff during the reporting period, in addition to regular compliance inspections, include:

- two on-site evaluations of environmental monitoring programs;
- evaluations of documentation related to environmental performance of uranium mines;
- technical reviews of ecological risk assessments for two nuclear generating stations;

- environmental pathways analysis for estimating radiation doses to the public resulting from the activities of licensees;
- hosting information sessions on environmental protection requirements for licensees; and,
- continued implementation of an Environmental Information Management System to assist in assessing and reporting on the environmental performance of major licensees.

Two environmental assessments were completed and 14 were ongoing under the *Canadian Environmental Assessment Act* during 2001-2002.

Ongoing Environmental Assessments, 2001-2002

Decommissioning of Bruce Heavy Water Plant	Tiverton, ON
COGEMA – Cluff Lake Decommissioning	Cluff Lake, SK
Containment of Prescribed Substances for Idle Mines	Elliot Lake, ON
Cigar Lake Waste Rock Disposal in McClean Lake Mining Facility Sue C pit	McClean Lake, SK
Isomedix Industrial Irradiator Facility	Whitby, ON
AECL Building 204	Chalk River, ON
Iter Facility	Clarington, ON
Point Lepreau Solid Radioactive Waste Management Facility	Point Lepreau, NB
Restart of Bruce NGS-A Units 3 and 4	Tiverton, ON
Darlington Used Fuel Dry Storage Facility	Clarington, ON
Port Granby Long Term Low Level Radioactive Waste Management Project	Port Granby, ON
Port Hope Long Term Low Level Radioactive Waste Management Project	Port Hope, ON
Decommissioning of AECL Heavy Water Upgrading Plant	Chalk River, ON
Decommissioning of AECL Whiteshell Laboratories	Pinawa, MB

Completed Environmental Assessments, 2001-2002

Pine Street Storage Extension Facility	Port Hope, ON
Bruce Radioactive Waste Operation Site 2 Upgrades Program	Tiverton, ON

Enforcement and Compliance

Power Reactors

CNSC staff assesses every nuclear generating station's performance against regulations and specific conditions of operating licences. Staff reviews licensees' implementation of programs in areas such as operating performance, performance assurance, design adequacy, equipment fitness for service, emergency preparedness, environmental protection and radiation protection. Staff also reviews events and investigates licensee non-compliance, and monitors the implementation of corrective actions to address deficiencies. Finally, CNSC staff reviews applications for operating licence renewals and amendments to assess licensees' qualifications to safely operate a nuclear generating station. Full-time CNSC staff are permanently located at every nuclear generating station.

For more information on the performance and safety of Canada's nuclear power plants, and the CNSC Staff Annual Report on the Canadian Nuclear Power Industry, contact the CNSC at info@cnsc-ccsn.gc.ca

As of March 31, 2002, there were seven nuclear generating stations, comprising 22 power reactors, licensed by the CNSC.

Site	Reactors	Operator	Location	Licence Expiry Date	Status
Bruce-A	4	Bruce Power Inc.	Kincardine, ON	August 2002	Shutdown / Defuelled
Bruce-B	4	Bruce Power Inc.	Kincardine, ON	October 2002	Operating
Pickering-A	4	Ontario Power Generation	Ajax-Pickering, ON	June 2003	Shutdown
Pickering-B	4	Ontario Power Generation	Ajax-Pickering, ON	June 2003	Operating
Darlington	4	Ontario Power Generation	Bowmanville, ON	February 2003	Operating
Gentilly-2	1	Hydro-Québec	Trois-Rivières, QC	December 2002	Operating
Point Lepreau	1	New Brunswick Power	Saint John, NB	October 2002	Operating

During the reporting period, there were no serious process failures and safety systems continued to meet regulatory requirements. Assessments showed that while the performance of all stations continued to be safe, improvement is required in performance assurance programs such as training and quality assurance. No worker or member of the public received a dose in excess of the regulatory limit, and radioactive emissions to the environment were below permissible limits.

Significant developments at power reactor facilities during the reporting period include:

- Point Lepreau was shut down due to a leak caused by a feeder tube crack. The feeder tube was replaced and other tubes were inspected to determine their state. All power reactor licensees adjusted their periodic and in-service inspection programs to account for this potential defect.
- New Brunswick Power (NB Power) and Hydro-Québec are studying plant life extension projects for their nuclear power generating stations. It is estimated that the licensees will notify the CNSC of their decisions whether to proceed in 2003.
- Ontario Power Generation (OPG) continued its project to restart Pickering-A.
- OPG leased both Bruce facilities to Bruce Power Incorporated. At the time of the lease coming into force, Bruce Power has retained the existing OPG staffing levels, programs, policies and procedures at the Bruce facilities.

CNSC staff prepares the *CNSC Staff Annual Report on the Canadian Nuclear Power Industry* which details assessments of industry performance, making comparisons where possible, showing trends and averages, and outlining significant issues that pertain to the industry at large. In the report, CNSC staff rates licensee program design and program implementation using the CNSC performance rating system.

Uranium Mines and Mills

Sixteen uranium mining facilities in Canada were licensed by the CNSC as of March 31, 2002. Of these 16 facilities, five are operating mines or mills, with the remainder being either shut down or in the process of being decommissioned.

The Uranium Mines and Mills Regulations and other regulations under the Nuclear Safety and Control Act are available on the CNSC website at www.nuclearsafety.gc.ca

Thirty-seven routine inspections and evaluations of uranium mining facilities were carried out by CNSC staff during the reporting period. While minor infractions of regulations were detected, all issues were resolved within timeframes specified by the CNSC.

None of the approximately 2000 uranium mine or mill workers were exposed to a dose in excess of regulatory limits during the reporting period. The CNSC also reviewed environmental data related to uranium mining and found that no regulatory limits were exceeded.

Uranium Processing and Fuel Fabrication Facilities

There are five licensed uranium processing and fuel fabrication facilities operating in Ontario, and one facility in Alberta which is not operating but continues to be licensed by the CNSC as a standby facility.

CNSC staff undertook 23 routine inspections at the five operating facilities, and ten in-depth evaluations of the implementation of licensee programs for radiation and environmental protection, fire safety, quality assurance and security. Only minor problems were identified in these evaluations and inspections, and corrective actions were taken by the licensees or are scheduled to be taken within specified timeframes.

No member of the public or worker received a dose in excess of regulatory limits due to the operation of these facilities during the reporting period. More than 700 workers were monitored for radiation exposures at these facilities. The annual average whole-body dose received by workers was 2.6 percent of the allowable dose limit. The highest annual whole-body dose received by a worker was 28 percent of the allowable dose limit.

Nuclear Substances and Radiation Devices

There were 3,312 nuclear substance and radiation device licences in effect as of March 31, 2002. Nuclear substances and radiation devices are widely used in research, in medicine for diagnostic and therapeutic purposes, in teaching, and in many industrial applications including quality and process control.

During the reporting period, CNSC staff carried out 2,595 inspections of licensees' operations and five health physics audits were conducted. As a result, one order was issued requiring the licensee to take immediate corrective actions as a result of a significant health and safety issue. A total of 184 inspections identified issues of non-compliance which were addressed by the licensees within the timeframe specified by the CNSC. One overexposure which occurred during the 2000-2001 reporting period was confirmed during the 2001-2002 reporting period.

Packaging and Transportation

During the reporting period, the CNSC issued 31 packaging and transportation certificates, including one special arrangement, 21 endorsements of foreign packages, and nine Canadian-origin package design approval certificates of which three were special form material certificates.

As of March 31, 2002, there were 102 valid package design approval certificates, of which 59 were for Canadian-origin packages and 43 for endorsement of foreign-origin packages. The CNSC also issued 159 transport licences, mostly for shipments in transit within Canada. CNSC transportation staff and regional inspectors conducted more than 1,125 transport compliance actions such as routine inspections, special investigations, follow-up and responses to actual or potential emergencies. There were 18 reported incidents involving the transport of radioactive material, including three where the packages were involved in transport accidents. The most common incidents involved the incorrect labeling, documentation, marking or

preparation of packages. None of these incidents resulted in the exposure of workers or the public to radiation exceeding regulatory limits, nor were there any releases to the environment in excess of regulatory limits.

Non-Power Reactors

There were seven non-power reactors operating in Canada as of March 31, 2002. Routine compliance inspections conducted throughout the reporting period indicated that non-power reactors were operated safely. No worker or member of the public received doses of radiation in excess of regulatory limits from the operation of non-power reactors. The CNSC also determined there were no releases to the environment in excess of regulatory limits.

Non-power reactors have many uses including the study of physics and the production of radioisotopes for medical uses.

Commissioning of the MAPLE 1 and MAPLE 2 reactors by AECL remained on-hold due to safety system malfunctions that occurred in 2000. In December 2001, CNSC staff was authorized to grant the approvals to commence commissioning once corrective actions are complete.

Licensee	Location	Licence Expiry Date	Status
McMaster University (Pool-type research reactor)	Hamilton, ON	June 2002	Operating
École Polytechnique (SLOWPOKE-2)	Montréal, QC	June 2003	Operating
École Polytechnique (Subcritical assembly)	Montréal, QC	June 2006	Operating
Dalhousie University (SLOWPOKE-2)	Halifax, NS	June 2003	Operating
Saskatchewan Research Council (SLOWPOKE-2)	Saskatoon, SK	June 2003	Operating
University of Alberta (SLOWPOKE-2)	Edmonton, AB	June 2003	Operating
Royal Military College of Canada (SLOWPOKE-2)	Kingston, ON	June 2003	Operating
AECL (MAPLE 1)	Chalk River, ON	October 2002	Commissioning
AECL (MAPLE 2)	Chalk River, ON	October 2002	Commissioning

Nuclear Research and Test Establishments

The CNSC licenses two nuclear research and test establishments operated by AECL: Chalk River Laboratories at Chalk River, Ontario and Whiteshell Laboratories at Pinawa, Manitoba. The latter facility is currently being decommissioned.

Routine compliance inspections conducted throughout the reporting period indicated that these facilities were operated safely. During the period, there were no releases to the environment or doses to workers or members of the public in excess of regulatory limits from the operation of nuclear research and test establishments.

Following an investigation of a May 1999 incident at the Chalk River Laboratories, the former Atomic Energy Control Board laid charges against AECL for failing to adequately protect worker health and safety. These charges remained before the courts as of March 31, 2002.

Nuclear Substance Processing Facilities

There are three nuclear substance processing facilities operating in Canada. Facilities in Peterborough and Pembroke, Ontario process tritium, and a facility in Kanata, Ontario processes radioisotopes for medical uses. In addition, a new radioisotope processing facility is currently being commissioned at Chalk River, Ontario.

During the reporting period, CNSC staff evaluated the Environmental Monitoring Plan at each of the two tritium processing facilities, and is currently monitoring the actions being taken to address the deficiencies that were identified during those evaluations. The radioisotope processing facility was also inspected, and several programs such as emergency preparedness, fire protection, security, radiation protection, and environmental monitoring and protection were evaluated. The licensees demonstrated compliance with regulations, and no radiation doses or releases to the environment in excess of regulatory limits resulted from the operation of these facilities.

Large Irradiators

There are four large irradiator facilities in Canada subject to the *Class II Nuclear Facilities and Prescribed Equipment Regulations*. They are located in Laval and St. Hyacinthe, Québec, and in Kanata and Whitby, Ontario. Three of these facilities held facility licences during the reporting period. The fourth facility is in the course of having its licence converted from a radioisotope licence to a facility licence. During the reporting period, no radiation doses or releases to the environment in excess of regulatory limits resulted from the operation of these facilities.

Particle Accelerators

There were 173 medical particle accelerators licensed as operating or under construction in hospitals and cancer clinics as of March 31, 2002, subject to *Class II Nuclear Facilities and Prescribed Equipment Regulations*. There were 19 non-medical particle accelerators licensed in 2001-2002. During the reporting period, CNSC staff carried out eight inspections of licensees' operations and two health physics audits were conducted. The inspections and health physics audits identified issues of non-compliance which were addressed by the licensees within the timeframes specified by the CNSC.

During the reporting period, no radiation doses or releases to the environment in excess of regulatory limits resulted from the operation of these facilities.

Waste Management

There were 18 radioactive waste-management facilities under CNSC licence as of March 31, 2002, and CNSC staff conducted over 40 compliance verification visits of the facilities. Inspections included radiation measurements, contamination measurements and sampling, and reviews of licensee documentation which confirmed that radioactive waste continues to be managed in accordance with CNSC requirements. No worker or member of the public received a radiation dose, and there were no releases to the environment, in excess of regulatory limits as a result of the operation of these facilities

During 2001-2002, the CNSC implemented its Contaminated Lands Evaluation and Assessment Network (CLEAN) program, which was set up to evaluate and assess previously unlicensed contaminated sites. The program aims to develop and apply consistent and transparent CNSC regulatory control to sites where there are nuclear substances exceeding the Exemption Quantities specified in the *Nuclear Substances and Radiation Devices Regulations*. The Commission has granted temporary exemptions from licensing for all identified contaminated sites until the appropriate regulatory control for those sites is determined.

The CLEAN program aims to apply regulatory control to previously unlicensed contaminated sites such as old uranium mines and mills.

Temporary licensing exemptions were granted for the simple possession of greater than 10 radium luminous devices during the reporting period to allow the CNSC to assess licensing requirements and decide on an appropriate means of regulatory control regarding the possession, use and display of these devices.

Decommissioning and Financial Guarantees

During the reporting period, CNSC staff continued monitoring decommissioning projects at AECL's Whiteshell and Chalk River Laboratories, and at the Douglas Point, Nuclear Power Demonstration, and Gentilly-1 demonstration power reactors. Staff also continued reviewing the Detailed Decommissioning Plan and Environmental Assessment for OPG's Bruce Heavy Water Plant.

The first reports from the Serpent River Watershed and In-Basin Monitoring Programs were submitted to the CNSC in April 2001. Based on the available data, no unreasonable risks were identified for either location. CNSC staff informed licensees of requirements for future interpretation of environmental monitoring data.

Financial guarantees for decommissioning costs have been in place for uranium mines for several years. During the reporting period, revised decommissioning plans and financial guarantee proposals were reviewed for Class I nuclear facilities, and financial guarantees were established for several uranium processing and fuel fabrication facilities. CNSC staff forecasts that financial guarantees for the majority of the remaining Class I facilities, including nuclear power reactors, will be put in place in 2002-2003.

No worker or member of the public received radiation doses in excess of regulatory limits as a result of decommissioning activities during the reporting period. CNSC staff also reviewed environmental data and found that there were no releases to the environment in excess of regulatory limits.

Organizational Safety Performance and Workplace Competence

CNSC specialists in quality management, human factors and event investigation verify that licensees have an appropriate safety culture and have implemented policies, processes and practices that support safe operations. The CNSC also determines if licensees' workers are competent to perform duties in key nuclear generating station positions through the administration of examinations and evaluation of licensees' training programs.

Significant effort was directed to the surveillance of commissioning and restart programs, and evaluation of power reactor licensee training programs. In addition, the CNSC conveyed expectations for quality assurance programs through promotional activities, and site visits were made to several locations to verify that these programs were being implemented.

CNSC staff conducted 18 site compliance audits and evaluations, and carried out two incident investigations during the reporting period. One investigation involved a worker health and safety issue at a nuclear generating station, and the second was an internal investigation of how the CNSC handled the licensing of a non-power reactor.

Considering human and organizational factors minimizes the potential for human error through knowledge of human capabilities, limitations and group processes. These factors are considered at all stages of the nuclear facility life cycle.

Training programs for shift supervisor candidates submitted by power reactor licensees in 2001-2002 were evaluated by CNSC staff. CNSC staff continued discussions with power reactor licensees to develop a common standard for re-qualification testing of key operations personnel. The CNSC held examinations of candidates from six of the seven nuclear generating stations and is examining whether there is a need to certify key staff working in facilities other than nuclear generating stations.

CNSC staff continued to develop and implement a technical program for ensuring that human and organizational factors are considered in regulatory evaluations of licensees' human performance. The key focus areas of this program are organization and management, human-machine interface design, work organization and job design, procedures and job aids, workplace design, human reliability and operating experience, and incident investigation.

International Affairs

The CNSC Office of International Affairs provides centralized corporate coordination of the wide variety of international undertakings and activities of the CNSC and implements measures under the *Nuclear Safety and Control Act* respecting Canada's nuclear non-proliferation policy. These measures include:

- nuclear and nuclear-related dual-use export and import licensing of items of proliferation significance and of importance to national and international security;
- the implementation of Canada's bilateral nuclear cooperation agreements with other countries; these agreements provide legally binding nuclear non-proliferation frameworks for international transfers of nuclear material, equipment and technology;
- participation in international nuclear non-proliferation fora where measures to strengthen the international nuclear non-proliferation regime are discussed;
- implementation of the Safeguards Agreement and Additional Protocol between Canada and the IAEA for the verification of Canada's international undertakings that nuclear material will not be diverted to nuclear weapons or other nuclear explosive devices; and,
- management of the Canadian Safeguards Support Program (CSSP) for conducting safeguards research and development.

A framework for managing and monitoring the CNSC's international undertakings and activities was developed during the reporting period, and is being progressively implemented. The framework will help ensure that international undertakings and activities are mandate-relevant, prioritized and performed effectively and efficiently.

Persons and companies are required to seek and comply with CNSC licences for the export or import of proliferation-significant nuclear items including uranium, nuclear fuel, heavy water, tritium, and nuclear reactor equipment, components and related technology. Exporters are also obliged to obtain CNSC export licences for nuclear-related dual-use materials, equipment, software and related technology. During 2001-2002, the CNSC issued or amended 650 export licences and 83 import licences for these items. In 2001, 10,029 tonnes of Canadian natural uranium were licensed for export, consistent with uranium sales agreements accepted by the interdepartmental Uranium Exports Review Panel on which the CNSC participates.

As of March 31, 2002, there were 23 bilateral Nuclear Cooperation Agreements in force covering 37 countries. During the reporting period, CNSC staff participated in bilateral nuclear policy and/or technical consultations with Australia, China, the Republic of Korea and the United States of America on the implementation of bilateral agreements and bilateral inventories of nuclear materials. The CNSC continued to participate in the two multilateral nuclear export control mechanisms, the Zangger Committee and the Nuclear Suppliers Group. Two key objectives of the CNSC's participation are to ensure that the guidelines established by these bodies for conditions of nuclear supply effectively address proliferation threats, and that the lists of controlled items take into account advances in nuclear and nuclear-related technology.

The CNSC continued to operate Canada's accounting and control system for nuclear material pursuant to the Canada/IAEA Safeguards Agreement. The CNSC provided relevant reports to the IAEA, negotiated safeguards implementation approaches at Canadian nuclear facilities with the IAEA, managed the access and activities of IAEA safeguards inspectors, and managed the installation and maintenance of relevant IAEA safeguards equipment. During the reporting period, the CNSC submitted 442 reports to the IAEA covering 7,000 transactions involving nuclear material. There were 37,854 tonnes of nuclear material subject to IAEA safeguards inspection in Canada as of December 31, 2001.

The CNSC ensured that licensees conformed with international safeguards obligations through its regulatory requirements and implemented a compliance program to ensure that the requirements were met. During the reporting period, 44 safeguards compliance inspections were conducted by CNSC staff.

The CNSC continued its industry outreach program on the implementation of the Canada/IAEA Additional Protocol that came into force in 2000. The IAEA successfully conducted complementary access visits for the first time in Canada at 14 nuclear sites and other locations, including several that are not subject to IAEA inspection under the Canada/IAEA Safeguards Agreement.

The CNSC funds the Canadian Safeguards Support Program (CSSP) to improve safeguards effectiveness and efficiency and resolve specific issues. The majority of the effort is conducted through professional services contracts placed with the private sector, other government departments or agencies, and universities. Joint programs are undertaken with other organizations, including those in other countries, to leverage the available funding.

During the reporting period, CSSP projects covered development of equipment, safeguards systems studies on state-level safeguards approaches and geological repositories for spent fuel, information gathering and analysis methodologies, installation of IAEA equipment in Canada, training of IAEA safeguards inspectors and the provision of experts to work at the IAEA. Total annual expenditures under the CSSP were approximately $1.5 million.

Canadian Uranium Exports in 2001

Destination	Tonnes
United States	4,436.6
France	3,301.5
Japan	1,126.6
Republic of Korea	495.5
Taiwan	211.6
Spain	180.0
Belgium	126
Mexico	92.8
United Kingdom	58.1
Total	**10,028.7**

Supporting Our Regulatory Work

Regulatory Affairs

The CNSC Office of Regulatory Affairs provides leadership, direction and support to enhance regulatory effectiveness, efficiency and transparency, and to improve the performance of regulatory operations.

During the reporting period, the CNSC published 15 regulatory documents, including policies, standards and guides, to provide further information and guidance on the implementation of the *Nuclear Safety and Control Act* and CNSC regulations.

Key activities and initiatives developed and introduced during the reporting period to increase the CNSC's regulatory effectiveness and efficiency include:

- a new compliance policy and strategy and completion of the CNSC Corporate Compliance Project;
- new terminology, processes and a manual to rate programs and qualifications of applicants and licensees, and to report on licensee performance;
- a new approach which provides a more flexible, consistent, and rational basis and criteria for recommending licence periods, and standards and a guide for developing licence conditions;
- a guide for standardized licensing processes, and standards for audit, evaluation and routine inspection reports;
- measures to streamline production and prioritizing of regulatory documents;
- participation in international fora and working groups to develop performance indicators of regulatory effectiveness and efficiency;
- a strategy and guidelines for implementing CNSC cost-benefit analysis policy; and,
- a regulatory framework and diagram of key stakeholder relationships.

To improve the CNSC-stakeholder working relationship, a CNSC staff – Canadian Nuclear Association regulatory affairs committee has been established to discuss issues of common interest. This effort will be expanded to include more stakeholders in the coming year.

The President also undertook an outreach program, visiting major public interest groups, all nuclear generating stations, Chalk River Laboratories, three mayors of communities near facilities, and a board of trade.

The CNSC funds a research and support program to generate knowledge and information to support its regulatory mission. Professional services contracts are placed with the private sector, other government departments or agencies, as well as universities in Canada and abroad. Where appropriate, joint programs are undertaken with other organizations to maximize the value obtained.

During the reporting period, total expenditures on regulatory research and support was approximately $1.4 million. Research reports are available as public information.

Audit and Evaluation

The Audit and Evaluation Group continued to provide assurance and advisory services relating to program performance and the effectiveness of CNSC management systems and processes during the reporting period. In support of the government's improvement efforts relating to Modern Comptrollership, the group also assisted with projects on integrated risk management and results management.

The group coordinated the first annual report on CNSC progress in responding to the recommendations of a value-for-money external audit of the CNSC's regulation of power reactors, carried out by the Office of the Auditor General in 2000.

Human Resources

During 2001-2002, the CNSC identified attracting and retaining excellent staff as one of its key strategic objectives. In support of this objective, the CNSC developed a Workforce Sustainability Strategy to make the CNSC one of the world's best nuclear regulators. This strategy was developed to position the CNSC as an employer of choice by strengthening its market reach and profile while promoting a supportive corporate culture.

The Workforce Sustainability Strategy will build on the human resources achievements of 2001-2002, including a Pilot Internship Program that resulted in the hiring of eight new university graduates, the Early Identification of Management Potential Program (Phase II) that resulted in the identification of 13 high-potential candidates for first-line management positions, a new orientation program introduced in May 2001, and strengthened compensation measures for scientific and engineering staff.

The Technical Training Group, with the primary responsibility for the technical training of CNSC staff, developed competency-based Standard Training Plans for Inspectors and Project Officers. Course development linked to these plans and focused on compliance was initiated during the reporting period.

Finance

In keeping with the federal government's transition from a modified cash basis of accounting to accrual accounting within its Financial Information Strategy, the CNSC upgraded its financial systems and revised its financial policies and procedures in order to produce its financial statements for the year ended March 31, 2002, on an accrual basis of accounting.

During the reporting period, the CNSC continued to review its Cost Recovery Program. As a result of an increase in costs due to inflation, and new regulatory responsibilities and standards, the CNSC needs to update the fees it charges, which are currently based on 1992 costs. An important element of this review is a comprehensive and open consultation process with stakeholders to allow for an opportunity to comment on the program development. These consultations were initiated at the end of the reporting period, and will continue throughout the spring of 2002. Feedback and suggestions from licensees and other stakeholders will be key components in establishing the revised cost recovery program. The CNSC anticipates that the new fees will be in place by April 2003.

In 2001-2002, the CNSC recovered 79.6% of its $47.3 million recoverable licensing costs. All funds recovered are deposited in the Federal Government's Consolidated Revenue Fund; the CNSC cannot spend this revenue. Non-recoverable costs of $4.2 million were incurred to license fee-exempted publicly funded health care institutions, educational institutions and federal departments.

Communications and Information Management

In pursuit of the objective to operate with a high level of openness and transparency, the Communications and Information Management Division supports regulatory activities by providing CNSC audiences, including the public, with accurate, timely and open information on CNSC programs and activities, and by maintaining detailed records on corporate activities. Ongoing activities included maintaining a website and corporate library to provide information to interested parties, responding to requests for information and CNSC publications, and proactive dissemination of information on Commission hearings and meetings and the resulting decisions.

Information Technology Services

During the reporting period, the Information Technology Services Division (ITSD) implemented a data and information repository that enables CNSC employees to access the information they require in a timely manner. In addition to maintaining and upgrading CNSC databases and information management systems on an ongoing basis, ITSD ensured that CNSC employees continued to have access to the tools that enable a high degree of connectivity between staff at CNSC headquarters and site offices. ITSD continued to work in collaboration with a number of CNSC divisions in bringing licensing activities on-line in an effort to respond to the federal Government On-Line (GoL) initiative. A number of steps were also taken to improve IT security post-September 11.

Legal Services

Legal services are provided to the Commission and CNSC staff by the Legal Services Unit, staffed by Department of Justice lawyers.

Financial Statements

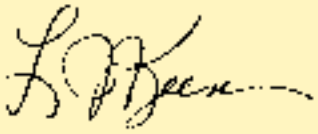
Management Responsibility for Financial Statements

The accompanying financial statements of the Canadian Nuclear Safety Commission for the year ended March 31, 2002 and all information included in its annual report are the responsibility of management.

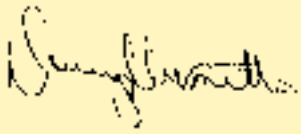
These financial statements have been prepared by management in accordance with Canadian generally accepted accounting principles and, where appropriate, they include amounts that have been estimated according to management's best judgement. Management has prepared the financial information presented elsewhere in the annual report and has ensured that it is consistent with that provided in the financial statements.

Management has developed and maintains books, records, financial and management controls and information systems. They are designed to provide reasonable assurance that the Government's assets are safeguarded and controlled, that resources are managed economically and efficiently in the attainment of corporate objectives, and that transactions are in accordance with the *Financial Administration Act* and regulations as well as Commission policies and statutory requirements.

The Commission's external auditor, the Auditor General of Canada, has audited the financial statements and has reported on her audit to the Commission and to the Minister of Natural Resources Canada.



Linda J. Keen
President and CEO



Denys Vermette
Vice-President, Corporate Services

Ottawa, Canada
June 5, 2002

Auditor's Report

To the Canadian Nuclear Safety Commission
and the Minister of Natural Resources

I have audited the statement of financial position of the Canadian Nuclear Safety Commission as at March 31, 2002 and the statements of operations, deficit and cash flows for the year then ended. These financial statements are the responsibility of the Commission's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of the Commission as at March 31, 2002 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

John Wiersema, CA
Assistant Auditor General
for the Auditor General of Canada

Ottawa, Canada
June 5, 2002

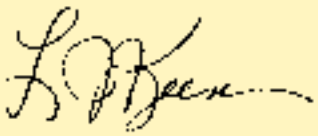
Statement of Financial Position

	31 March 2002	1 April 2001
Assets		
Current assets:		
Due from the CRF	$3,952,658	$4,751,020
Accounts receivable (Note 5)	2,050,090	3,667,937
Prepaid expenses	54,605	3,832
	6,057,353	8,422,789
Non-current assets:		
Capital assets (Note 6)	1,171,313	518,280
Total Assets	7,228,666	8,941,069
Liabilities and Deficit		
Current liabilities:		
Accounts payable and accrued liabilities	4,111,417	4,917,928
Vacation pay	2,577,732	2,683,939
Deferred revenue (Note 7)	19,210,186	14,884,143
Employee severance benefits (Note 13)	1,803,233	1,047,646
	27,702,568	23,533,656
Non-current liabilities:		
Employee severance benefits (Note 13)	5,646,354	5,155,218
	33,348,922	28,688,874
Deficit	(26,120,256)	(19,747,805)
Total Liabilities and Deficit	$7,228,666	$8,941,069

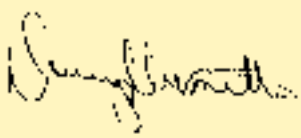
Commitments and Contingencies (Note 12)

The accompanying notes are an integral part of these financial statements.

Approved by:



Linda J. Keen
President and CEO



Denys Vermette
Vice-President, Corporate Services

Statement of Operations for the year ended March 31, 2002

	2002
Revenues	
Licence fees	$37,708,642
Contract Projects	472,338
Other	37,878
Total revenues	38,218,858
Expenses (Note 8)	
Health, Safety, Security and Environmental Protection	60,359,015
Non-proliferation and Safeguards	5,058,872
Total expenses	65,417,887
Net cost of operations (Note 4)	($27,199,029)

Statement of Deficit for the year ended March 31, 2002

	2002
Balance at beginning of year	($19,747,805)
Net Cost of Operations	(27,199,029)
Services provided without charge	6,544,557
Net cash provided by government (Note 4)	15,080,383
Change in due from CRF	(798,362)
Balance at end of year	($26,120,256)

The accompanying notes are an integral part of these financial statements.

Statement of Cash Flows for the year ended March 31, 2002

	2002
Operating Activities	
Net cost of operations	($27,199,029)
Non-cash items	
Amortization of capital assets	188,039
Services provided without charge by Government departments and agencies	6,544,557
Net gain on disposal of capital assets	25,345
Net change in non-cash working capital balances	5,735,986
Change in non-current employee severance benefits	491,136
Cash used in operating activities	(14,213,966)
Investing Activities	
Acquisitions of and improvements to capital assets	(883,796)
Proceeds on disposal of surplus assets	17,379
Cash used in investing activities	(866,417)
Net cash provided by government (Note 4)	($15,080,383)

The accompanying notes are an integral part of these financial statements.

Notes to Financial Statements as at March 31, 2002

1. Authority and Objectives

The Canadian Nuclear Safety Commission (CNSC) was established in 1946 by the *Nuclear Energy Act*. Prior to May 31, 2000, when the federal *Nuclear Safety and Control Act (NSCA)* came into effect, the CNSC was known as the Atomic Energy Control Board. The CNSC is a departmental corporation named in Schedule II to the *Financial Administration Act* and reports to Parliament through the Minister of Natural Resources Canada.

The *Nuclear Safety and Control Act* provides comprehensive powers to the CNSC to establish and enforce national standards for nuclear energy in the areas of health, safety and environment. It establishes a basis for implementing Canadian policy and fulfilling Canada's obligations with respect to the non-proliferation of nuclear weapons. The *NSCA* also provides CNSC compliance inspectors with clearer, fuller powers and brings penalties for infractions in line with current legislative practices. The CNSC is empowered to require financial guarantees, order remedial action in hazardous situations and require responsible parties to bear the costs of decontamination and other remedial measures.

The objectives of the CNSC are to:

- regulate the development, production and use of nuclear energy and the production, possession and use of nuclear substances, prescribed equipment and information in order to: a) prevent unreasonable risk to the environment, to the health and safety of persons and to national security; and b) achieve conformity with measures of control and international obligations to which Canada has agreed; and
- disseminate scientific, technical and regulatory information concerning: a) the activities of the CNSC; b) the development, production, possession, transport and use of nuclear energy and substances; and c) the effects of nuclear energy and substances use on the environment and on the health and safety of persons.

The CNSC also administers the *Nuclear Liability Act*, including designating nuclear installations and prescribing basic insurance to be carried by the operators of such nuclear installations, and the administration of supplementary insurance coverage premiums for these installations. The sum of the basic insurance and supplementary insurance totals $75 million for each designated installation (Note 14). The number of installations requiring insurance coverage is 14.

The CNSC's expenditures are funded by a budgetary lapsing authority. Employer contributions to employee pension and non-pension benefits are authorized by a statutory authority.

The CNSC established a cost recovery program as provided for by the *NSCA*. The intent of the program is the recovery of CNSC's expenditures related to its regulatory activities from users licensed under the Act. These expenditures include the technical assessment of licence applications, compliance inspections and the development of licence standards. Current fees are based on expenditures for 1992/93 regulatory activities. Educational institutions, publicly funded non-profit health care institutions, federal government departments and activities related to international safeguards are exempt from this cost recovery program. The CNSC is currently reviewing its cost recovery program and plans to implement new cost recovery fee regulations next year.

2. Significant Accounting Policies

a) Use of estimates

These financial statements are prepared in accordance with Canadian generally accepted accounting principles. The preparation of accrual financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses and contingencies during the reporting period. Actual results could differ from the estimates. The most significant items where estimates are used are employee severance liabilities and amortization of capital assets.

b) Parliamentary appropriations

Appropriations are based in large part on cash flow requirements. Consequently, items recognized in the statement of deficit and the statement of financial position are not necessarily the same as those provided through appropriations from Parliament. Note 4 shows the reconciliation of parliamentary appropriations used to net cost of operations, parliamentary appropriations voted, and net cash provided by government.

c) Revenue recognition

Licence fee revenue is recognized on a straight-line basis over the period to which the fee payment pertains (normally one or two years). All other revenue is recognized in the period in which the underlying transaction or event occurred that gave rise to the revenue. Licence fees received for future year licence periods are recorded as deferred revenue. Revenue from licence fees, contract projects and other sources is deposited to the Consolidated Revenue Fund and is not available for use by the CNSC. Legislative authority allows for the respending of amounts received on the disposal of surplus assets.

d) Due from the CRF

The CNSC operates within the Consolidated Revenue Fund (CRF). The CRF is administered by the Receiver General for Canada. All cash received by the CNSC is deposited to the CRF and all cash disbursements made by the CNSC are paid from the CRF. Due from the CRF represents the amount of cash that the CNSC is entitled to draw from the Consolidated Revenue Fund, without further appropriations, in order to discharge its liabilities.

e) Capital assets

Capital assets are recorded at cost less accumulated amortization. Amortization is calculated on a straight-line basis over the estimated useful life of the capital asset as follows:

Asset Class	**Amortization period**
Informatics equipment and software	2 to 5 years
Motor vehicles	4 years
Office and laboratory furniture and equipment	5 to 10 years

f) Employee severance benefits

The CNSC liability for employee severance benefits is calculated using information derived from the results of the actuarially determined liability for employee severance benefits for the Government as a whole. Employee severance benefits on cessation of employment represent obligations of the CNSC that are normally funded by appropriation when the benefits are paid.

g) Vacation Pay

Vacation pay is expensed as the benefit accrues to employees under their respective terms of employment using the salary levels at year end. Vacation pay liability payable on cessation of employment represents obligations of the CNSC that are normally funded by appropriation when paid.

h) Services provided without charge by other government departments and agencies

Services provided without charge by other government departments and agencies are recorded as operating expenses at their estimated fair value. These include services such as: accommodation provided by Public Works and Government Services Canada, contributions covering employers' share of employees' insurance premiums and costs paid by Treasury Board Secretariat, salaries and associated legal costs of services provided by Justice Canada, audit services provided by the Office of the Auditor General, and workers' compensation benefits provided by Human Resources Development Canada. A corresponding amount is credited directly to the Deficit.

i) Pension Benefits
The CNSC's eligible employees participate in the Public Service Superannuation Plan administered by the Government of Canada. The employees and the CNSC contribute to the cost of the Plan. Contributions by the CNSC are expensed in the period incurred and represent the total cost to the CNSC under the Plan. The CNSC is not required under present legislation to make contributions with respect to actuarial deficiencies of the Public Service Superannuation Account.

j) Grants and contributions
Grants are recognized in the year in which payment is due, while contributions are recognized in the year in which the recipient has met the eligibility criteria.

k) Nuclear Liability Reinsurance Account
The CNSC administers the Nuclear Liability Reinsurance Account on behalf of the federal government. The CNSC receives premiums paid by the operators of nuclear installations for the supplementary insurance coverage and credits these to the Nuclear Liability Reinsurance Account in the Consolidated Revenue Fund. Since the CNSC does not have the risks and rewards of ownership, nor does it have accountability for this account, it does not include any of the associated financial activity or potential liability in its financial statements. Financial activity and liability is however reported in Note 14 of these financial statements.

3. Changes in Accounting Policies

In prior years, the CNSC prepared its financial statements on a modified cash basis. This is the first year that the CNSC has prepared a set of financial statements on a full accrual accounting basis in accordance with Canadian generally accepted accounting principles. These changes are as follows:

a) Financial statement presentation and comparative figures
In prior years, the CNSC's financial statement consisted of a Statement of Operations and notes to the statement. The CNSC's March 31, 2002 financial statements contain a Statement of Financial Position, a Statement of Operations, a Statement of Deficit, a Statement of Cash Flows and notes to the financial statements. It is neither practical nor cost effective for the Commission to show comparative amounts on the Statements of Operations, Deficit and Cash Flows because the information is not readily available and any estimation of previous years amounts would not be able to be substantiated with any degree of precision. Comparative amounts are only presented on the Statement of Financial Position.

b) Vacation pay
In prior years, the CNSC recognized expenditures relating to employee accumulated vacation pay on the cash basis. During the year, the CNSC retroactively changed its accounting policy with respect to employee accumulated vacation pay to that described in note 2 g).

c) Employee severance benefits

In prior years, the CNSC recognized expenditures relating to employee severance benefits on the cash basis. During the year, the CNSC retroactively changed its accounting policy with respect to employee severance benefits to that described in note 2 f).

d) Capital assets

In prior years, purchases of capital assets were charged to operating expenditures in the year of acquisition. For fiscal 2002, the CNSC retroactively changed its policy of accounting for capital assets. The costs are now capitalized and amortized over their estimated useful lives as detailed in note 2 e). During the year, capital asset acquisitions in the amount of $883,796 which would have previously been expensed have been capitalized. Amortization expense in the amount of $188,039 has been recorded in the statement of operations.

4. Parliamentary Appropriations

a) Reconciliation to net cost of operations

	2002
Net cost of operations	($27,199,029)
Items not charged to Vote:	
Amortization	188,039
Vacation Pay – Accrual	(106,207)
Services provided without charge by other Government departments and agencies	6,544,557
Revenue	(38,218,858)
Change in employee severance benefits	1,246,723
Other expenses	(2,452)
	(30,348,198)
Items not charged to revenue/expense:	
Capital Asset acquisitions	(883,796)
Prepaids (excluding accountable advances)	(36,408)
	(920,204)
Total Parliamentary appropriations used	($58,467,431)

b) Reconciliation to parliamentary appropriations voted

	2002
Parliamentary appropriations voted:	
Vote 20 - CNSC Operating expenditures	$43,774,000
Supplementary Vote 20a	5,531,578
Supplementary Vote 20b	2,231,680
Transfer from Treasury Board Vote 10	33,000
Transfer from Treasury Board Vote 15	4,316,000
	55,886,258
Less: lapsed appropriation	2,959,996
	52,926,262
Statutory	
Spending of proceeds from disposal of surplus assets	169
Contributions to employee pension and non-pension benefit plans	5,541,000
Total Parliamentary appropriations used	$58,467,431

c) Reconciliation to net cash provided by government

	2002
Net cash provided by government	$15,080,383
Revenue (non-respendable)	38,218,858
Net change in non-cash working capital balances charged to Vote	5,123,014
Refunds of prior years' expenditures	45,176
Total Parliamentary appropriations used	$58,467,431

5. Accounts Receivable

The CNSC records receivables from three main sources:

i) Licence fees
ii) GST recoverable from CCRA
iii) Other

Amounts due under each of these categories are as follows:

	2002	2001
Licence fees	$1,097,603	$2,466,912
GST recoverable from CCRA	930,906	1,298,956
Other	245,652	126,140
Gross receivables	2,274,161	3,892,008
Allowance for doubtful accounts	224,071	224,071
Net receivables	$2,050,090	$3,667,937

6. Capital Assets

Capital Assets	Balance beginning of year	Acquisitions	Disposals/ adjustments	Balance end of year
Informatics equipment and software	$553,381	$186,635	($81,557)	$658,459
Motor vehicles	519,403	108,254	(100,000)	527,657
Office and laboratory furniture and equipment	239,810	588,907	(10,000)	818,717
	$1,312,594	$883,796	($191,557)	$2,004,833

Accumulated Amortization	Balance beginning of year	Current year Amortization	Disposals/ adjustments	Balance end of year
Informatics equipment and software	$366,846	$63,414	($48,606)	$381,654
Motor vehicles	360,450	57,354	(100,000)	317,804
Office and laboratory furniture and equipment	67,018	67,271	(227)	134,062
	794,314	188,039	(148,833)	833,520
Net Capital Assets	$518,280	$695,757	($42,724)	$1,171,313

7. Deferred Revenue

Generally, licence fees are paid in advance of the licence or fee period. Since revenue is recognized over the duration of the fee period, fees received for future year licence periods are recorded as deferred revenue.

	2002
Balance at beginning of year	$14,884,143
Less: revenue included in licence fees in the year	(13,875,155)
Add: fees received in the year for future year licence periods	18,201,198
Balance at end of year	$19,210,186

8. Summary of Expenses by Major Classification

	2002
Salaries and employee benefits	$45,130,540
Professional and special services	7,854,798
Accommodation	4,084,802
Travel and relocation	2,972,712
Furniture and equipment	1,546,962
Repairs	839,918
Communication	839,460
Utilities, material and supplies	695,151
Information	603,118
Commission Members' expenses	257,406
Grants and contributions	246,557
Amortization of capital assets	188,039
Equipment rentals	154,135
Miscellaneous	4,289
	$65,417,887

9. Related Party Transactions

The CNSC is related in terms of common ownership to all Government of Canada departments, agencies, and Crown corporations. The CNSC enters into transactions with these entities in the normal course of business. Certain of these transactions are on normal trade terms applicable to all individuals and enterprises, while others are services provided without charge to the CNSC. All material related party transactions are disclosed below.

During the year, the CNSC expensed $14,281,390 and recognized revenue of $3,152,656 from transactions in the normal course of business with other Government departments, agencies and Crown corporations. These expenses include services provided without charge of $6,544,557 as described in note 10.

10. Services Provided Without Charge

During the year, the CNSC also received services that were obtained without charge from other government departments and agencies. These are recorded at fair value in the financial statements as follows:

	2002
Accommodation provided by Public Works & Government Services Canada	$3,481,958
Contributions for employer's share of employee benefits provided by the Treasury Board Secretariat	2,687,128
Salary and associated costs of legal services provided by Justice Canada	212,700
Audit services provided by the Office of the Auditor General of Canada	95,000
Other	67,771
	$6,544,557

11. Licences Provided Free of Charge by the CNSC

The CNSC provides licences free of charge to educational institutions, publicly funded non-profit health care institutions and federal government departments. In 2002, the value of these licences amounted to $2,497,753 (2001 - $2,606,515).

12. Commitments and Contingencies

a) Commitments

The CNSC has commitments for operating leases of equipment of approximately $320,036 for future years.

b) Contingencies

Claims have been made against the CNSC in the normal course of operations. Legal proceedings for claims totaling approximately $55,325,000 were still pending at March 31, 2002. The final outcome is presently not determinable and, accordingly, no provision has been recorded in the accounts for these contingent liabilities. Settlements, if any, resulting from the resolution of these claims will be accounted for in the year in which the liability is considered likely and the cost can be reasonably estimated.

13. Employee Future Benefits

a) Pension Benefits

The Public Service Superannuation Plan requires that employers contribute on an equal basis as employees to the plan. These contributions represent the total pension obligations of the CNSC and are recognized in the accounts on a current basis. The Commission's contribution to the plan was $3,751,257 for the year ended March 31, 2002.

b) Employee Severance Benefits

The CNSC provides post-retirement and post-employment benefits to its employees through a severance benefit plan.

The net expense for CNSC's employee severance benefit plans for the year ended March 31, 2002 was $1,246,723.

These benefit plans are not pre-funded and therefore have no assets. The liability recognized in the Statement of Financial Position at March 31, 2002 respecting these benefit plans is $7,449,587 (2001 - $6,202,864).

14. Nuclear Liability Reinsurance Account

Under the *Nuclear Liability Act* (NLA), operators of designated nuclear installations are required to possess basic and/or supplementary insurance of $75 million per installation for specified liabilities. The federal government has designated the Nuclear Insurance Association of Canada (NIAC) as the sole provider of third party liability insurance and property insurance for the nuclear industry in Canada. NIAC provides insurance to nuclear operators under a standard policy. The policy consists of two types of coverage: Coverage A and Coverage B. Coverage A includes only those risks that are accepted by the insurer, that is, bodily injury and property damage. Coverage B risks include personal injury that is not bodily, for example

psychological injury, and damages arising from normal emissions. NIAC receives premiums from operators for both coverages, however, premiums for Coverage B risks are remitted to the federal government which reinsures these risks under a Reinsurance Agreement between NIAC and the federal government. The federal government, through the Reinsurance Agreement also pays the difference (supplementary insurance) between the basic insurance amount set by the CNSC and the full $75 million of liability imposed by the NLA. As of March 31, 2002 the total supplementary insurance coverage is $515,500,000 (2001 - $590,000,000).

All premiums paid by the operators of nuclear installations for the supplementary insurance coverage are credited to a Nuclear Liability Reinsurance Account in the Consolidated Revenue Fund. Claims against the supplementary insurance coverage are payable out of the Consolidated Revenue Fund and charged to the Account. There have been no claims against or payments out of the Account since its creation.

As explained in Note 2 k), the CNSC administers the Nuclear Liability Reinsurance Account on behalf of the Government of Canada through a specified purpose account. During the year, the following activity occurred in this account.

	2002
Opening Balance	$551,921
Receipts deposited	1,500
Closing Balance	$553,421

Revenue and Cost of Operations by Activity (for the year ended March 31, 2002) UNAUDITED

	Revenue	Licences Provided Free of Charge	Total Value of Licences and Other Revenue	2002 Cost of Operations
Licensing & Certification Activities				
Power Reactors	$26,871,152	$ —	$26,871,152	$30,114,644
Non-Power Reactors	900,305	133,007	1,033,312	1,596,312
Nuclear Research & Test Establishments	1,493,278	—	1,493,278	1,713,271
Particle Accelerators	115,140	—	115,140	319,488
Uranium Processing Facilities	862,101	—	862,101	1,174,541
Nuclear Substance Processing Facilities	282,432	—	282,432	496,918
Heavy Water Plants	246,473	—	246,473	101,322
Radioactive Waste Facilities	374,618	—	374,618	878,485
Fusion Facilities	170,625	—	170,625	244,826
Class I Nuclear Facilities	**31,316,124**	**133,007**	**31,449,131**	**36,639,807**
Class II Nuclear Facilities	77,527	640,950	718,477	890,545
Dosimetry Services	76,742	3,337	80,079	377,197
Uranium Mines & Mills	2,688,367	—	2,688,367	3,276,647
Nuclear Substances, Prescribed Equipment	3,344,487	1,713,561	5,058,048	9,133,556
Certification	205,396	6,898	212,294	1,204,641
Total Licensing & Certification	**37,708,643**	**2,497,753**	**40,206,396**	**51,522,393**
Non-Licensing & Certification Activities				
Contract Projects	479,688	—	479,688	943,431
International Obligation & Cooperation	—	—	—	6,285,285
Other Regulatory Activities	30,527	—	30,527	6,666,778
Total Non-Licensing & Certification Activities	**510,215**	**—**	**510,215**	**13,895,494**
Total	**$38,218,858**	**$2,497,753**	**$40,716,611**	**$65,417,887**