Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

CNSC Annual Report 2002-2003

Canada

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Minister of Natural Resources Canada

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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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CNSC Annual Report 2002-2003

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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, 2003. 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 CEO

Linda J. Keen
President
and Chief Executive Officer

This past year we have made significant strides towards our strategic vision of becoming one of the best nuclear regulators in the world.

In fulfilling our mission 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 remained focused on the strategic objectives for making our vision become a reality; ensuring that the regulatory regime is effective, operating with a high level of openness and transparency, attracting and retaining excellent staff, and ensuring the CNSC is efficient in carrying out its mandate.

Major progress has been made in the implementation of a risk-based approach to planning, budgeting and resource allocation. Within the CNSC Operations Branch, an integrated risk management approach to resource allocation was established and is being implemented. An accountability framework, integrating the development of regulatory plans and the estimation of program costs with the budgeting process, has been approved for implementation in the 2003-2004 fiscal year. A parallel achievement is our considerable progress towards updating our cost recovery fees regulations. Significant consultations were held with stakeholders, and the draft regulations that were published in February 2003 reflected both adherence to the federal policy on cost recovery and the responses.

The CNSC also delivered on many of the elements of enhanced security that were identified in our post-September 11, 2001 security review. Our Security and Emergency Response Division progressed in putting new security related requirements for licensees into place. We have added a new Corporate Security Section, and we also continued to work on reviewing internally our legislative framework on security matters.

During 2002-2003, we proactively worked with federal partners and other organizations that play a role in nuclear emergency preparedness. The CNSC

hosted three emergency preparedness workshops for first responders in Ontario, Québec and New Brunswick, to discuss and share best practices and tools, and to identify strengths, issues and areas requiring improvement. The results of the workshops will be presented to the Commission in May 2003.

The CNSC's new compliance program and risk-based approach, which is subject to continuous evaluation and improvement, was implemented in 2002, and our Compliance Policy has been published.

With a view to the continued achievement of our effectiveness and efficiency objectives, the CNSC has introduced a Management Model of sound management practices based on the National Quality Institute's *Canadian Quality Criteria for Public Sector Excellence*. This model also reflects the results of the CNSC capacity check for Modern Comptrollership. Additional key operational processes related to risk-based management, quality assurance, government on-line and regulatory frameworks have also been put into place.

The CNSC has developed a Workforce Sustainability Strategy which includes a number of initiatives to contribute to our objective of attracting and retaining excellent staff. This strategy continues to be refined and updated as an evergreen document in order to allow the organization to address immediate and long-term human resources issues.

With regards to our goal of openness and transparency, the CNSC continued to ensure public involvement through ongoing communications between CNSC staff and stakeholders, and ongoing outreach activities.

A number of the CNSC's other significant achievements from the 2002-2003 reporting period are highlighted in this Annual Report. Thanks to the dedication and innovation of the staff of the CNSC, we have made significant progress during 2002-2003, and I look forward to reporting further progress in the 2003-2004 Annual Report.

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

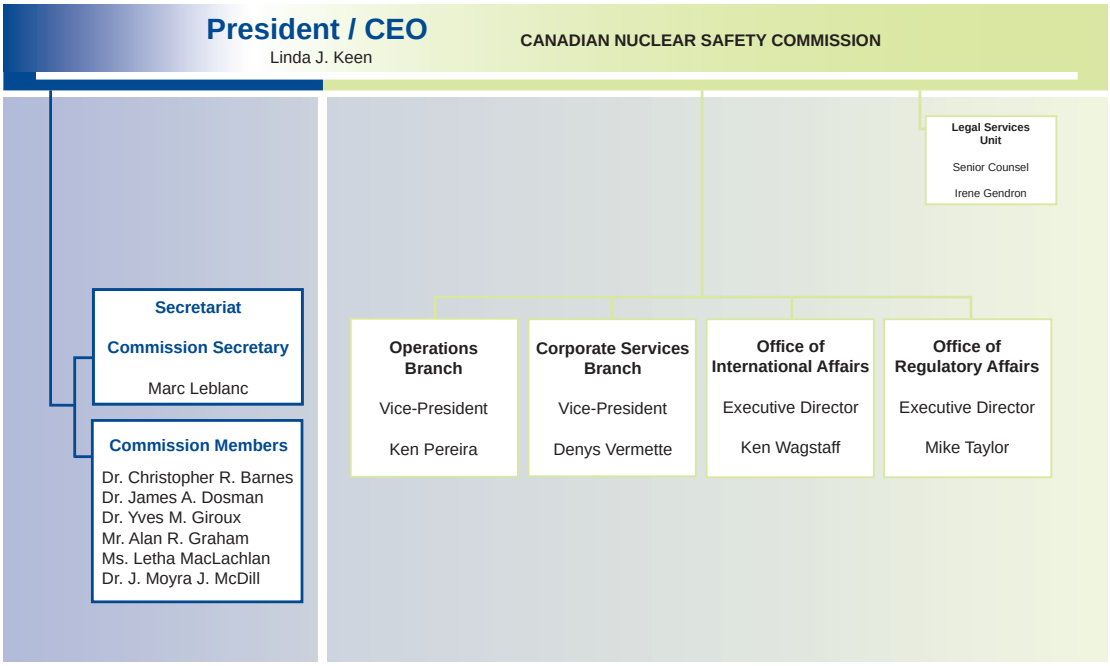
Marc Leblanc
Commission Secretary

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



Our Regulatory Framework

As Canada's nuclear regulator, the Canadian Nuclear Safety Commission (CNSC) regulates 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's regulatory authority comes from the *Nuclear Safety and Control Act*.

To provide Canadians with better regulated and safer nuclear industries, the CNSC has adopted the strategic outcome of being one of the best nuclear regulators in the world.

The CNSC has two business lines that support this strategic outcome: health, safety, security and environmental protection, and non-proliferation and safeguards.

The first business line, health, safety, security and environmental protection, works to limit, to a reasonable level and in a manner that is consistent with Canada's international obligations, risks to national security, the health and safety of persons and the environment that are associated with the development, production and use of nuclear energy and the production, possession and use of nuclear substances, prescribed sources and prescribed information.

The second business line, non-proliferation and safeguards, works to implement, in Canada, measures to which Canada has agreed respecting international control of the development, production and use of nuclear energy, including the non-proliferation of nuclear weapons and nuclear explosive devices and to support international efforts to develop, maintain and strengthen the nuclear non-proliferation and safeguards regimes.

Safety Performance and Regulatory Compliance

Power Reactors

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

As of March 31, 2003, 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.	Tiverton, ON	October 2003	1 reactor shutdown 3 shutdown/defuelled
Bruce-B	4	Bruce Power Inc.	Tiverton, ON	October 2003	Operating
Pickering-A	4	Ontario Power Generation Inc.	Pickering, ON	June 2003	Shutdown
Pickering-B	4	Ontario Power Generation Inc.	Pickering, ON	June 2003	Operating
Darlington	4	Ontario Power Generation Inc.	Clarington, ON	February 2008	Operating
Gentilly-2	1	Hydro-Québec	Bécancour, QC	December 2006	Operating
Point Lepreau	1	New Brunswick Power	Point Lepreau, NB	December 2005	Operating

During the reporting period, there were no serious process failures and safety systems continued to meet regulatory requirements. Assessments showed that the performance of all NGSs continued to be safe, and while some upgrades have been made, further improvement is still 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 events during the reporting period include:

- New Brunswick Power Corporation gave notice of its intention to reorganize NB Power by, among other things, creating NB Power Nuclear Corporation (NB Power Nuclear) as a wholly owned subsidiary of NB Power, which would become the operator of the Point Lepreau station.
- More flexible licence periods were introduced. Licence periods longer than two years can be issued when a licensee meets certain criteria. Longer licence periods enable the CNSC to regulate in a more risk-informed manner.
- The licences of the Point Lepreau, Gentilly-2 and Darlington NGSs were renewed for periods of 38, 48 and 60 months respectively.
- Ontario Power Generation encountered significant delays in its project to restart the Pickering-A NGS.
- A meeting was held between the CNSC, the United States Nuclear Regulatory Commission, and the United Kingdom Nuclear Installations Inspectorate to discuss the possibility of coordinating regulatory reviews of a new reactor design from Atomic Energy of Canada Limited (AECL). AECL had approached each of the agencies with requests to undertake reviews of the reactor design with a view to obtaining statements on whether the design is licensable in their countries. The three agencies agreed to collaborate on the matter.
- On January 27, 2003, operating staff at the Pickering-B NGS opened venting panels because of a potential release of hydrogen gas into the turbine building. The very cold air on that day prevented normal operation of these panels, which then had to be closed manually. A number of other systems at the station were also adversely affected by the cold air. Ontario Power Generation has reviewed this event in order to take the appropriate corrective actions to prevent a reoccurrence.
- Bruce Power requested an amendment to the Bruce-A NGS licence in order to restart two units in 2003. To address this request, an environmental assessment was completed in 2002 in accordance with the *Canadian Environmental Assessment Act*.
- Power reactor licensees are required to provide financial guarantees to cover the cost of placing the reactors in a safe long-term shutdown state in the event of operational difficulties leading to a total loss of income from electricity production. The ability of Bruce Power to meet this obligation was put into question in the fall of 2002 when financial problems at British Energy plc created uncertainty. The issue was resolved when a consortium of Canadian-based companies purchased British Energy plc's majority share in Bruce Power in February 2003. The consortium consists of Cameco Corporation of Saskatoon, TransCanada Pipelines Limited of Calgary, and BPC Generation Infrastructure Trust of Toronto.
- During the restart of a reactor at the Bruce-B NGS in December 2002, the instrumentation did not respond to the change of neutron flux as expected. At the close of the reporting period, the licensee and CNSC staff were reviewing this incident.

Performance ratings for Canada's power reactor licensees are updated periodically and available on the CNSC website at www.nuclearsafety.gc.ca

CNSC staff prepared the *CNSC Staff Annual Report for 2002 on the Canadian Nuclear Power Industry* (INFO-0739), 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. These ratings are updated periodically and published on the CNSC website.

Uranium Mines and Mills

Seven uranium mining facilities in Canada were licensed by the CNSC as of March 31, 2003. Four of these facilities are operating mines or mills, one is being developed, one is being shut down, and one is in the post-decommissioned phase. All facilities are located in Saskatchewan.

Thirty-eight 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.

There were no uranium mine or mill workers exposed to a dose of radiation in excess of regulatory limits during the reporting period.

There was one incident at a milling facility involving a minor release of liquid discharge of low pH to the environment in excess of regulatory limit, which did not result in any negative environmental effect. The licensee has taken appropriate remedial action to prevent recurrence.

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 21 routine inspections at the five operating facilities, and four in-depth evaluations of the implementation of licensee programs for radiation and environmental protection, 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.

The licensees of the five operating facilities developed programs to determine internal doses to workers resulting from occupational intakes of uranium. These programs were reviewed and accepted by CNSC staff, and are scheduled to be implemented by the licensees by April 1, 2003.

During the reporting period, these facilities were operated safely and there were no releases to the environment or doses to workers or members of the public in excess of regulatory limits.

Nuclear Substances and Radiation Devices

There were 3,148 nuclear substance and radiation device licences in effect as of March 31, 2003. 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 2,315 inspections of licensees' operations, three radiation protection audits and 13 transportation audits. There were 26 events recorded and two orders were issued requiring the licensees to take immediate corrective actions as a result of significant health and safety issues. A total of 990 inspections identified issues of non-compliance which were addressed by the licensees within the timeframe specified by the CNSC. During this reporting period, there were six unconfirmed cases of overexposure due to the use of nuclear substances or radiation devices.

On October 2, 2002, the CNSC officially launched its first Government On-Line initiative. Through a secure Internet site, the new service enables over 300 hospitals and clinics in the nuclear medicine community to view their licensing information and request licence amendments on-line.

During the fall of 2002, the CNSC hosted a delegation from the Autorité de sûreté nucléaire (France), to share knowledge and exchange views about the CNSC regulatory program relating to the industrial, medical and academic applications of nuclear substances and Class II nuclear facilities in Canada.

Packaging and Transportation

During the reporting period, the CNSC issued 39 packaging and transportation certificates, including one special arrangement, 15 endorsements of foreign packages, and 23 Canadian-origin package design approval certificates, of which five were special form material certificates.

As of March 31, 2003, there were 105 valid package design approval certificates, of which 61 were for Canadian-origin packages and 44 for endorsement of foreign-origin packages. The CNSC also issued 178 transport licences, mostly for shipments in transit within Canada. CNSC transportation staff and regional inspectors conducted more than 1500 transport compliance actions such as routine inspections, special investigations, follow-up and responses to actual or potential emergencies.

There were nine reported dangerous occurrences involving the transport of radioactive material, including six where the packages were involved in transport accidents. Of these nine reported dangerous occurrences, three are currently under investigation. None of these dangerous occurrences resulted in the exposure of workers or the public to radiation exceeding regulatory limits, or releases to the environment in excess of regulatory limits.

Non-Power Reactors

There were nine non-power reactors operating and two undergoing commissioning in Canada as of March 31, 2003. Routine compliance inspections conducted throughout the reporting period indicated that all 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.

CNSC staff granted approvals for AECL to resume nuclear commissioning of the MAPLE 1 and MAPLE 2 reactors at Chalk River Laboratories. As of March 31, 2003, nuclear commissioning of both reactors was in progress.

Non-Power Reactors in Canada

Licensee	Location	Licence Expiry Date	Status
McMaster University (Pool-type research reactor)	Hamilton, ON	June 2007	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	May 2003	Commissioning
AECL (MAPLE 2)	Chalk River, ON	May 2003	Commissioning
AECL (NRU)	Chalk River, ON	May 2003	Operating
AECL (ZED-2)	Chalk River, ON	May 2003	Operating

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. During the reporting period, the CNSC issued a decommissioning licence to AECL for Whiteshell Laboratories, which will expire on December 31, 2008.

There are two non-power reactors, NRU and ZED-2, under the Chalk River Laboratories operating licence. Both of these non-power reactors operated safely during the reporting period.

Routine compliance inspections conducted throughout the reporting period indicated that these nuclear research and test establishments were operated safely. During the reporting 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 these facilities.

Nuclear Substance Processing Facilities

There are four nuclear substance processing facilities operating in Canada, all located in Ontario. Two facilities in Pembroke and Peterborough, Ontario manufacture tritium lights, and a facility in Ottawa, Ontario processes radioisotopes for medical uses. A new radioisotope processing facility is currently being commissioned at Chalk River, Ontario.

At the Chalk River facility, the inactive phase of commissioning and work toward completion of the prerequisites for active commissioning continued during the reporting period. Inspections verified compliance with the commissioning plans and the *Nuclear Safety and Control Act* and its associated regulations.

Routine inspections were conducted at the Ottawa, Pembroke and Peterborough facilities, and in-depth security inspections were conducted at the Ottawa and Peterborough facilities. Evaluations of the emergency response plan were also conducted at the Ottawa facility, and of the dosimetry programs at the Pembroke and Peterborough facilities. The CNSC is following up on minor items identified in the inspections and evaluations. All licensees demonstrated compliance with the regulations, and no radiation doses or releases to the environment in excess of regulatory limits resulted from the operation of these facilities.

During the reporting period, the CNSC established a tritium-in-air monitoring program in Pembroke to evaluate the impact of emissions from the Pembroke facility. The results to date confirm that radiation doses to the public are well below the regulatory dose limit of 1000 microsieverts per year.

Irradiators

As of March 31, 2003, there were 16 irradiator facilities licensed as operating or under construction in veterinary hospitals, research, medical and industrial institutions, and at the National Research Council of Canada. During the reporting period, CNSC staff carried out eight inspections of licensees' operations. The inspections identified issues of non-compliance which were addressed by the licensees within the timeframes specified by the CNSC.

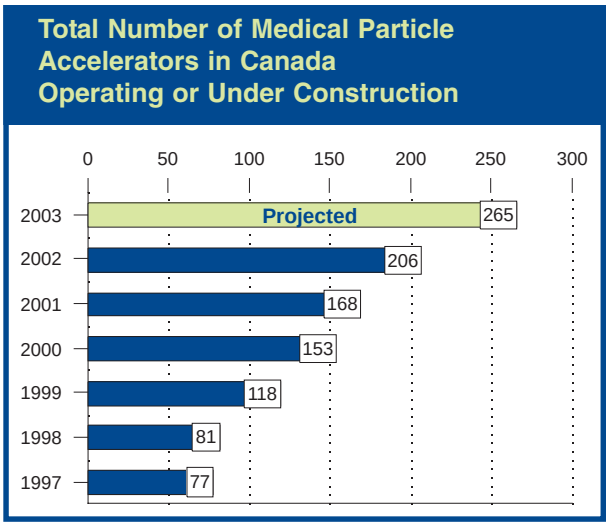
In addition, there are three pool-type irradiator facilities in Canada. These facilities are located in Laval and St. Hyacinthe, Québec, and Whitby, Ontario.

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

Brachytherapy and Teletherapy

There were 85 brachytherapy and teletherapy facilities licensed in Canada as operating or under construction in hospitals and cancer clinics as of March 31, 2003. During the reporting period, no radiation doses to workers or the public, or releases to the environment in excess of regulatory limits, resulted from the operation of these facilities.

Particle Accelerators



As of March 31, 2003, there were 206 medical particle accelerators licensed as operating or under construction in hospitals and cancer clinics in Canada. There were ten non-medical particle accelerators licensed in 2002-2003. During the reporting period, CNSC staff carried out nine inspections of licensees' operations. The inspections identified issues of non-compliance which were addressed by the licensees within the timeframes specified by the CNSC. The CNSC continues to see an increase in the number of requests for medical accelerator licences and radiation therapy devices as a result of the expansion in cancer treatment facilities in Canada. In addition, the increase in requests for cyclotron licensing continued throughout the reporting period, and is anticipated to continue in the upcoming year. During the reporting period, no radiation doses to workers or the public, or releases to the environment, in excess of regulatory limits resulted from the operation of these facilities.

Dosimetry Services

There are eight dosimetry services licensed by the CNSC in Canada. During the reporting period, CNSC staff carried out three audits of licensees' operations; the audits identified issues of non-compliance which were addressed by the licensees within the timeframes specified by the CNSC.

Waste Management

There were 15 radioactive waste management facilities under CNSC licence as of March 31, 2003. During the reporting period, CNSC staff conducted over 20 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 dose in excess of the regulatory limit, and there were no releases to the environment in excess of the regulatory limit as a result of the operation of these facilities.

The CNSC has implemented the 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.* Since the program was implemented two years ago, the Commission has granted temporary exemptions from licensing for more than 50 sites until the appropriate regulatory control for those sites is determined. To date, five idle mines have been licensed and seven contaminated properties have been remediated, resulting in no further regulatory requirements. Three environmental assessments under the *Canadian Environmental Assessment Act* are being completed for sites under the CLEAN program, and licence applications to bring eight sites under CNSC licence control have been received.

In 2002-2003, a study was initiated related to the temporary exemption from licensing granted by the Commission for the possession of more than 10 devices containing radium luminous compounds. The study's focus is to evaluate any potential risk to the public from these devices in order to assist staff in the development of any recommendations to the Commission, prior to the lapse of the exemption on December 31, 2004.

Decommissioning and Financial Guarantees

During the reporting period, CNSC staff continued monitoring decommissioning projects at AECL's Whiteshell and Chalk River Laboratories. Staff also continued reviewing the detailed decommissioning plan and environmental assessment for Ontario Power Generation's Bruce Heavy Water Plant.

Inspections and licensing reviews were completed for six uranium mine decommissioning licences for facilities in the area of Elliot Lake, Ontario.

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 early 2003-2004.

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, organization and management, and event investigation verify that licensees have implemented policies, procedures 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.

During the reporting period, CNSC staff directed significant effort to the surveillance of commissioning and restart programs, and evaluation of power reactor licensee training programs. In addition, staff 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 22 site compliance audits and other evaluations, successfully concluded a prosecution resulting from a 1999 investigation, and carried out one legal investigation during the reporting period.

The CNSC held examinations of certified position candidates from all seven nuclear generating stations. Beginning in 2002, the CNSC implemented Phase 1 of the transfer of certified positions at nuclear generating stations. In Phase 1, the licensees, under CNSC direction, develop the training programs and regulatory examinations for certified staff required by the licence. The CNSC continues to approve the content of the examinations, evaluate the candidate's knowledge and performance, and formally issue the examination results. Phase 1 will continue until June 2004. At that time, the responsibility for the administration of training and examinations will be transferred to the licensees who meet CNSC requirements.

A pilot implementation of a common standard for re-qualification testing of key nuclear generating station operations personnel also began in 2002-2003. CNSC staff continues to have discussions with power reactor licensees to complete the development of this standard.

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 human factors in design, work organization and job design, procedures and job aids, human reliability and evaluation of human performance in operating experience and root cause analysis. In addition, CNSC staff conducted promotional activities and conveyed expectations for the implementation of human factors engineering programs. Several licensees are developing and implementing improvement initiatives in the area of human performance, and the CNSC is monitoring their implementation.

The CNSC also continued its evaluation of organizational processes at licensed facilities during the reporting period. Further work in this area was conducted to modify the Organizational and Management Review Method used in such evaluations. Ongoing research shows the important role that safety culture plays in influencing other organizational processes and in the overall safety performance of facilities.

Nuclear Material Verification

During 2002-2003, the CNSC continued to ensure that licensees conformed to international safeguards obligations through its regulatory requirements, and implemented a compliance program to ensure that the requirements were met. These requirements include the timely provision of reports on the production, movement and location of all nuclear materials in Canada, the maintenance of measures for the application of IAEA safeguards, and the provision of access and assistance to IAEA inspectors for verification and monitoring activities as well as for the installation and maintenance of IAEA safeguards containment and surveillance equipment. During the reporting period, over 40 inspections were conducted by CNSC staff relating to licence conditions relevant to safeguards obligations.

Nuclear Export and Import Licensing

Under the *Nuclear Non-proliferation Import and Export Control Regulations*, Canadian importers and exporters are obliged to obtain and comply with licences controlling the international transfer of nuclear and nuclear-related items. Through the licensing process, the CNSC takes steps to ensure that nuclear imports and exports are consistent with Canada's nuclear non-proliferation policy, under which nuclear exports are to be used for only peaceful, non-explosive applications.

During 2002-2003, the CNSC issued or amended 469 export licences and 65 import licences for nuclear items that include uranium, nuclear fuel, heavy water, tritium and nuclear reactor equipment, components and technology. In addition, 176 export licences were approved for nuclear-related dual-use items, which include specific industrial equipment, components and materials that have legitimate non-nuclear uses but which could also make a significant contribution to nuclear explosive or unsafeguarded nuclear fuel cycle activities. In total, the CNSC authorized the export of over $2 billion worth of nuclear items, over $226 million worth of nuclear-related dual-use items, and the import of over $681 million worth of nuclear items. Ongoing efforts were made during 2002-2003 to reach out to Canadian importers and exporters to ensure their continued compliance with the CNSC licensing process and licensing requirements.

Emergency Preparedness

The CNSC maintains an Emergency Response Plan and implements it through a comprehensive emergency preparedness program.

The CNSC's emergency preparedness and response activities involve cooperation and planning with licensees and all levels of government. 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.

During the reporting period, the CNSC, together with federal partners Health Canada and the Office of Critical Infrastructure Protection and Emergency Preparedness, held three workshops on nuclear emergency management for major nuclear facilities. The workshops brought together more than 215 representatives from various organizations to openly discuss and share best practices and tools, and to identify strengths, issues and areas requiring improvement. The results of these workshops will be presented to the Commission in May 2003.

The CNSC also conducted a general review of its Emergency Response Plan and procedures to ensure that the context, criteria, activities and approach are in line with the revised federal, provincial, territorial and international emergency arrangements which involve the CNSC.

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 2002-2003, CNSC Duty Officers received and followed up on calls for 181 separate occurrences. Of these, 116 calls were related to simulated incidents, administrative requirements or non-emergency matters, and 65 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 no significant safety implications resulted from these incidents.

The CNSC is a core member of the Chemical-Biological-Radiological-Nuclear (CBRN) Research and Technology Initiative (CRTI). CRTI is a federal government program designed to improve Canada's ability to respond to chemical, biological, nuclear and radiological incidents, with particular emphasis on engaging first responders and ensuring they are provided with science and technology advice, equipment, support and training.

As part of the federal Public Safety and Anti-Terrorism initiatives, the CNSC participated in the CBRN training program for first responders. The CNSC is mainly responsible for the development and delivery of the radiological and nuclear aspects of the training program.

Security

The CNSC monitors and assesses the effectiveness of licensees' physical protection measures for nuclear facilities and materials to ensure compliance with the *Nuclear Security Regulations* and other associated regulations.

The scope of the CNSC's regulatory mandate for nuclear security expanded significantly in response to the September 11, 2001 terrorist attacks. A comprehensive review of all nuclear facilities was undertaken using a risk-based approach. As a result of this review, nuclear facilities were divided into three risk-related categories.

The first category of facilities includes nuclear generating stations and certain research facilities. The licensees of these facilities have implemented the enhanced physical protection measures ordered by the CNSC. These measures include:

- enhanced security screening of all personnel;
- dual verification for personnel identification;
- protection against forced vehicle penetration of all protected areas;
- enhanced searching of personnel and vehicles; and
- on-site armed response capability for effective intervention.

The second category of facilities includes facilities such as fuel fabrication and radioisotope processing facilities, and uranium refineries and mills. These facilities have also implemented enhanced physical protection measures such as enhanced personnel security screening, arrangements with local law enforcement for response, search provisions and supervisory awareness programs.

The third category of facilities includes all other licensees, such as hospitals and universities. CNSC staff continues to assess these facilities to ensure adequate physical protection measures are in place.

The risks to Canadian nuclear facilities have been minimized as a result of the enhanced physical protection measures implemented by licensees. CNSC staff will continue to monitor any potential threats and take appropriate measures to reduce the risks.

A comprehensive review of the *Nuclear Security Regulations* was also undertaken during the reporting period. This ongoing review will result in amendments to the *Nuclear Security Regulations* to include additional security requirements.

Additional funding was made available to the CNSC to enable staff to meet the increased level of assessment, monitoring and compliance activities. This has allowed CNSC staff to confirm and promote a high level of compliance and implementation of enhanced physical protection measures at these nuclear facilities.

During the reporting period, CNSC staff conducted 36 security inspections at nuclear generating stations, nuclear research facilities, waste management areas, fuel fabrication facilities, tritium processing facilities, university research laboratories and radioisotope facilities. CNSC staff assessed and approved 10 site security reports, which describe the licensees' physical protection programs. Twenty-four security transportation plans for the transport of nuclear material were also assessed and approved. CNSC staff also monitored and evaluated one major security exercise conducted by a licensee. Based on the licensee's performance during the exercise, CNSC staff determined that they are prepared to effectively respond to security incidents.

In addition to regulating domestic physical protection requirements, the CNSC assessed and approved 139 applications for the import, export and transit of nuclear material, which required security transportation plans. The CNSC also participated in the International Atomic Energy Agency (IAEA) Illicit Trafficking Database program, provided expertise on physical protection as part of the IAEA International Physical Protection Advisory Service, and provided expert advice during meetings to amend the Convention on the Physical Protection of Nuclear Material.

As part of a bilateral agreement with the United States Nuclear Regulatory Commission, CNSC staff organized meetings and arranged visits to Canadian nuclear facilities to discuss and exchange information related to physical protection during the reporting period.

Radiation Protection

The CNSC's *Radiation Protection Regulations* prescribe regulatory limits on the dose of radiation to which the public and workers may be exposed from the use of nuclear energy and radioactive materials. Licensees are required to implement radiation protection programs to keep doses "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.

During the reporting period, CNSC staff conducted seven on-site evaluations of radiation protection programs in addition to regular compliance inspections. Of these, two were at nuclear generating stations, one at a non-power reactor facility, one at a university research laboratory, one at a radioisotope facility, and two at processing facilities.

Three over-exposures to nuclear energy workers that occurred during the previous reporting period were confirmed during 2002-2003. During this reporting period, there were six unconfirmed cases of overexposure due to the use of nuclear substances or radiation devices.

The CNSC also evaluates radiation doses to the public living in the vicinity of nuclear facilities. Verified data from the reporting period indicate that exposures to the public were well below the regulatory limit of 1000 microsieverts per year. For example, for the nuclear generating stations reported on in the CNSC's Radiation Index, in every case exposures to the public were less than one per cent of the regulatory limit.

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. Verified data from this reporting period indicates that there were no releases of radiation to the environment in excess of regulatory limits resulting from licensed activities and operations. However, there was one incident at a uranium milling facility of a minor release of liquid discharge of low pH to the environment in excess of regulatory limits, which did not result in any negative environmental effect.

Environmental protection activities carried out by CNSC staff during the reporting period include:

- One on-site evaluation of an environmental management system at a nuclear research and test establishment, and two on-site environmental inspections of two abandoned uranium mines and a waste rock mound.

- Evaluations of documentation related to environmental performance of five nuclear generating stations, four uranium mines and mills, two uranium processing facilities, one fuel fabrication plant, one research and test establishment, two facilities in the process of decommissioning and two abandoned mines.
- Technical reviews of ecological risk assessments for four nuclear generating station sites, two uranium mines, two uranium processing facilities, one uranium fuel fabrication facility, two waste management facilities, one research and test establishment, two historic mines and the proposed international thermonuclear experimental reactor (ITER) site.
- Environmental pathways analysis for estimating radiation doses to the public resulting from the activities of seven licensees (two nuclear generating stations, two uranium processing facilities, one uranium fuel fabrication facility, a shut-down reactor and a nuclear substance processing facility).
- Independent monitoring of tritium concentration in air in the vicinity of a nuclear substance processing facility in response to public concern.
- Hosting information sessions on environmental protection requirements for licensees, especially uranium processing and fuel fabrication facilities, and on the CLEAN (Contaminated Land Evaluation and Assessment Network) program for remediation of idle uranium mines in Canada.

Documentation related to environmental assessments is available on the CNSC website at www.nuclearsafety.gc.ca

As of March 31, 2003, five environmental assessments were completed and 19 were ongoing under the *Canadian Environmental Assessment Act*. One environmental assessment was cancelled during the reporting period.

Ongoing Environmental Assessments 2002-2003

Decommissioning of Bruce Heavy Water Plant	Tiverton, ON
Decommissioning of Cluff Lake Mine	Cluff Lake, SK
Cigar Lake waste rock disposal in McClean Lake mining facility's Sue C pit	McClean Lake, SK
Decommissioning of AECL Buildings 204A and 204B: Fuel Rod Storage & Handling Bays	Chalk River, ON
Construction and Operation of ITER Facility	Clarington, ON
Modifications to Point Lepreau Solid Radioactive Waste Management Facility	Point Lepreau, NB
Construction and Operation of Darlington Used Fuel Dry Storage Facility	Clarington, ON
Decommissioning of AECL Heavy Water Upgrading Plant	Chalk River, ON
Construction and Operation of Transportation Package Maintenance Building at Western Waste Management Facility	Tiverton, ON
Modifications to Solid Radioactive Waste Management Facilities at Gentilly-2	Bécancour, QC
Construction and operation of Pickering Waste Management Facility, Phase II	Pickering, ON
Deloro Mine Consolidation Site	Deloro, ON
Cigar Lake Mine Construction	Cigar Lake, SK
Key Lake Uranium Recycle Project	Key Lake, SK
Key Lake Uranium Mill Production Increase	Key Lake, SK
McArthur River Mine Production	McArthur River, SK
Fort McMurray Historic Waste Storage Mound	Fort McMurray, AB
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

Completed Environmental Assessments 2002-2003

Containment of Prescribed Substances for Idle Mines	Elliot Lake, ON
Isomedix Industrial Irradiator Facility	Whitby, ON
Restart of Bruce Nuclear Generating Station-A Units 3 and 4	Tiverton, ON
Decommissioning of AECL Whiteshell Laboratories	Pinawa, MB
Change in Disposal of Aqueous Liquid Waste, Shield Source Incorporated	Peterborough, ON

International Activities

The CNSC coordinates international undertakings and activities with respect to Canada's international commitments on the peaceful uses of nuclear energy; implements measures respecting Canada's nuclear non-proliferation policy including Canada's international commitments on the non-proliferation of nuclear weapons and other nuclear explosive devices; and provides authoritative advice to the President and CEO of the CNSC, the Minister and Government on the development and application of nuclear non-proliferation and safeguards policy.

During 2002-2003, international concern over terrorism and increased and emerging proliferation threats continued to place worldwide attention on nuclear issues. The CNSC's response included increased attention on the physical security of nuclear facilities and materials, the verification of nuclear materials in Canada, and close scrutiny of the export of proliferation-significant nuclear and nuclear-related dual-use items.

CNSC staff also continued participating in a number of international nuclear fora, including the IAEA, the Organization for Economic Co-Operation and Development's

Major international committees with CNSC participation (2002-2003)

Committee	Purpose
Standing Advisory Group on Safeguards Implementation (IAEA)	To advise the Director General of the IAEA on policy and technical aspects of safeguards implementation.
International Nuclear Safety Advisory Group (IAEA)	To advise the Director General of the IAEA on nuclear safety, radiation safety, and the safety of radioactive waste from a global perspective.
Commission on Safety Standards (IAEA)	To advise the Director General of the IAEA on relevant safety regulatory issues, including those for promoting worldwide application of standards.
International Nuclear Regulators Association	To influence and enhance nuclear safety from a regulatory perspective by facilitating international communication and cooperation.
Committee on the Safety of Nuclear Installations (NEA)	To coordinate activities concerning the technical aspects of design, construction, and operation of nuclear installations.
Committee on Nuclear Regulatory Activities (NEA)	To exchange information and experience among regulatory organizations and to review developments which could affect regulatory requirements.
Committee on Radiation Protection and Public Health (NEA)	To assist member countries in the regulation and application of radiation protection by identifying and analyzing emerging issues in a timely fashion.
Committee on Radioactive Waste Management (NEA)	To assist member countries in the area of radioactive waste management, developing safe management and disposal strategies for spent fuel, long-lived waste, and the waste from the decommissioning of nuclear facilities.

(OECD) Nuclear Energy Agency (NEA), the International Commission on Radiological Protection, and the United Nations Scientific Committee on the Effects of Atomic Radiation. The CNSC participated in numerous international meetings and working groups committed to the safe and secure use of nuclear material and technology. The table on the previous page describes a selection of the major international committees in which the CNSC participates.

The CNSC is actively involved in the exchange of information with foreign nuclear regulators with whom there are formal bilateral arrangements in place. There were discussions with foreign counterparts including the United States, the United Kingdom, France, South Korea, Romania, China and the Czech Republic.

In March 2003, the President and CEO of the CNSC, Linda J. Keen, was elected as the President of the International Nuclear Regulators Association (INRA), a group of nuclear regulators from countries with large nuclear programs. Ms. Keen also chaired sessions at an International Conference on Decommissioning for Nuclear Activities in October 2002 in Berlin, Germany, and at an International Conference on Safety Culture in Nuclear Installations held in Rio de Janeiro, Brazil in December 2002 (both under the auspices of the IAEA). She also participated as a speaker in the NEA conference in June 2002 on Industry/Regulator Interface.

Non-proliferation

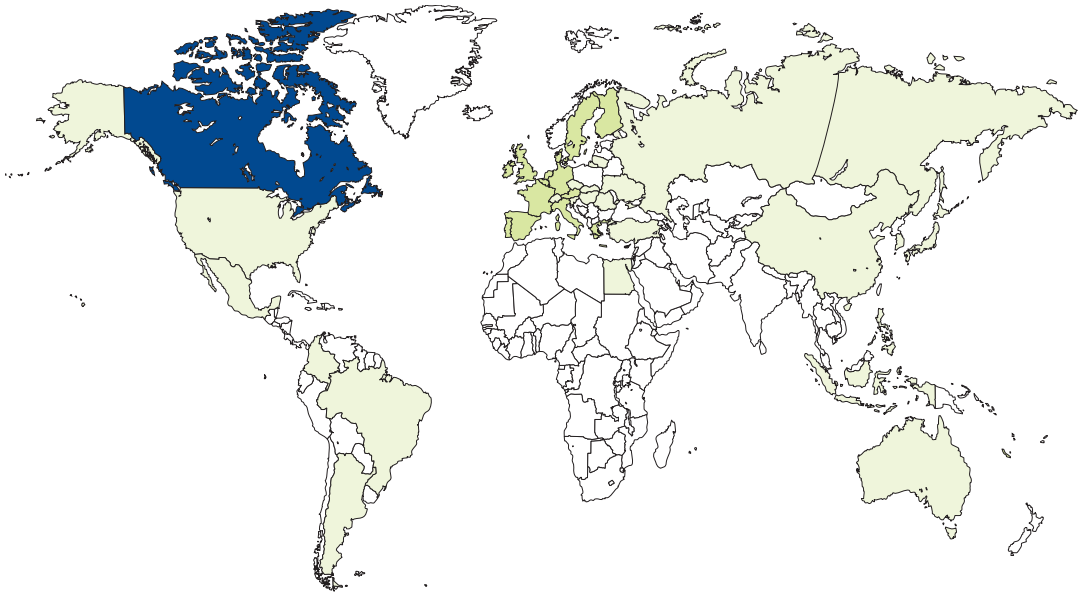
In accordance with Canada's long-standing nuclear non-proliferation policy, major nuclear exports are subject to nuclear cooperation agreements between Canada and the destination country. These agreements establish reciprocal obligations that are designed to minimize the proliferation risk. The CNSC participates with the Department of Foreign Affairs and International Trade in the negotiation of bilateral nuclear cooperation agreements and implements administrative arrangements with its counterparts in other countries. As of March 31, 2003, there were 23 bilateral nuclear cooperation agreements in force covering 37 countries, as indicated on the next page.

During the reporting period, CNSC staff participated in nuclear policy and/or technical consultations with Australia, the European Community and the United States on the implementation of bilateral agreements and the reconciliation of bilateral inventories of nuclear items. 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.

Safeguards

As a party to the *Treaty on the Non-Proliferation of Nuclear Weapons*, Canada is required to uphold certain international obligations regarding the use and handling of

Countries with which Canada has Bilateral Nuclear Cooperation Agreements



1. Argentina
2. Australia
3. Brazil
4. People's Republic of China
5. Colombia
6. Czech Republic
7. Egypt
8. Hungary
9. Indonesia
10. Japan
11. South Korea
12. Lithuania
13. Mexico
14. Philippines
15. Romania
16. Russian Federation
17. Slovakia
18. Slovenia
19. Switzerland
20. Turkey
21. Ukraine
22. United States of America

Euratom

23. Austria
24. Belgium
25. Denmark
26. Finland
27. France
28. Germany
29. Greece
30. Ireland
31. Italy
32. Luxembourg
33. Netherlands
34. Portugal
35. Spain
36. Sweden
37. United Kingdom

nuclear material. The CNSC is tasked with monitoring the use, storage and flow of nuclear material at Canadian nuclear facilities. The CNSC works with the IAEA to ensure that all nuclear material in Canada is adequately reported and accounted for. Accurate accounting provides the basis for the assurance that no Canadian nuclear material is being used for non-peaceful purposes. The CNSC operates a system comprising an electronic database in conjunction with paper documentation to monitor the flow and inventory of Canadian nuclear material, both domestically and internationally. During the reporting period, the CNSC submitted 180 reports to the IAEA covering 10,651 transactions involving nuclear material. There were 36,136 tonnes of nuclear material subject to IAEA safeguards inspection in Canada as of December 31, 2002.

Over the reporting period, 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.

Under the Canada/IAEA Additional Protocol, the IAEA has the right to request short notice "complementary access" at Canadian nuclear sites and other locations, to verify compliance with Canada's international obligations. During 2002-2003, there were 14 complementary accesses performed at locations across Canada. For the first time, complementary access was requested for a decommissioned nuclear facility that is no longer licensed by the CNSC. The visit was successfully completed due to thorough planning and the cooperation of all parties involved.

Technical Support

The CNSC funds the Canadian Safeguards Support Program (CSSP) to improve safeguards effectiveness and efficiency, and to resolve specific safeguards issues. The support is provided primarily to the IAEA but also to satisfy domestic needs. The majority of the effort is conducted through professional service 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.

Priority is given to efforts to improve the effectiveness and efficiency of safeguards implemented in Canada and on Canadian supplied nuclear material and technology. Typical annual expenditures total approximately $2 million. Support provided includes:

- Direct support to the IAEA under a "Contribution Agreement"; the agreement provides the IAEA with Cost Free Experts (temporary professional assistance) and the ability to fund additional equipment and related travel.
- Assistance with safeguards equipment installations in Canada.
- Equipment development; ongoing projects include the development of equipment for monitoring fuel as it leaves reactors and the development of more sensitive technology to confirm that material stored underwater is spent reactor fuel and not a substitute material.
- Information technology; the CSSP is active with Canadian and other agencies in bringing to the attention of the IAEA new techniques applicable to safeguards activities, including satellite imaging and Geographic Information Systems.
- Training; over the years, the CSSP has developed a number of safeguards systems on which the IAEA depends. Due to the rotational nature of the IAEA inspectorate, training material and training courses are essential in order to keep new inspectors up to date on the CNSC support provided.

Regulatory Coordination

While progress towards our strategic outcome of becoming one of the world's best nuclear regulators has been accomplished throughout the CNSC during 2002-2003, certain significant developments and achievements stand out as examples of the CNSC's commitment to regulatory excellence.

As part of an international initiative to improve and measure regulatory effectiveness, the CNSC participated in a trial project to validate a number of proposed performance indicators. As well, a Research Advisory Group composed of external experts was established to advise CNSC staff of the state of Canadian research in areas relating to the CNSC mandate. The group is scheduled to report to the CNSC in March 2004.

The CNSC also participated in the development and passage of Bill C-4 to amend the *Nuclear Safety and Control Act* (NSCA) to change the liability for cleanup of contaminated land. The bill received Royal Assent on February 13, 2003. Revisions to the *Packaging and Transport of Nuclear Substances* and *Nuclear Security Regulations* also progressed significantly during the reporting period. CNSC staff continues to review the NSCA to ensure our ability to respond to security challenges.

The CNSC also made considerable progress towards introducing new cost recovery fees regulations this year. The new fees regulations will enable the CNSC to update fees annually in line with changes in activity levels and costs, and with the Government of Canada's Cost Recovery Policy. Significant consultations were held with stakeholders, and the draft regulations were modified, where possible, to reflect the concerns heard during the consultations. It is anticipated that the new regulations will be finalized during 2003-2004.

A corporate-wide outreach program is under development and is expected to be operational by late 2003. This program will build on ongoing activities held in 2002-2003 where the President and CEO and staff of the CNSC met with various municipal organizations, and boards of directors of major licensees. The CNSC also held extensive consultations with licensees and other stakeholder groups, including regular meetings with the Canadian Nuclear Association's (CNA) Regulatory Affairs Committee. The President and CEO also spoke at the CNA's annual meeting.

The CNSC issued seven regulatory documents, including standards and guides, to provide further information and guidance on the *Nuclear Safety and Control Act* and associated regulations.

The CNSC and the Government of Saskatchewan also signed an agreement that will lead to greater administrative efficiency in regulating the uranium industry. This initiative responds to a recommendation made by the Joint Federal-Provincial Panel on Uranium Mining Developments in Northern Saskatchewan and lays the groundwork for the two groups to coordinate and harmonize their respective regulatory regimes.

In January 2003, the CNSC Executive Committee approved a Management Model, in line with the federal government's Modern Comptrollership initiative. The Model is based on the National Quality Institute's *Canadian Quality Criteria for Public Sector Excellence*. The Management Model provides a structured, well-proven and efficient approach that allows the CNSC to integrate and align, over time, its current and future organizational improvement initiatives. While the Management Model will be implemented over three to five years, it immediately provides a common frame of reference and encourages a structured approach to achieving our long-term vision.

On October 2, 2002, the CNSC launched its first Government On-Line service. The new service improves regulatory efficiency by enabling over 300 Canadian hospitals and clinics in the nuclear medicine community to conduct business electronically with the CNSC.

Executive Support

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.

The group carried out an assurance audit on the pre-consultation phase of the CNSC's proposed cost recovery regulations, conducted an audit framework of CNSC travel activities, and provided ongoing liaison with the Office of the Auditor General. The Audit and Evaluation Group's function is supported by an Audit and Evaluation Committee, chaired by the President and CEO of the CNSC.

Legal

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

Corporate Support

Strategic Planning and Modern Management

In June 2002, the CNSC created the Strategic Planning and Modern Management Division. The division is responsible for coordinating the CNSC's strategic planning process and the development of corporate reports. In addition, the division is charged with promoting modern management practices at the CNSC, in line with the federal government's Modern Comptrollership Initiative. In 2002-2003, the division coordinated the CNSC's Modern Comptrollership Capacity Assessment, and the CNSC has submitted the assessment and its action plan to the Treasury Board Secretariat.

Human Resources

In 2002-2003, the CNSC's Workforce Sustainability Strategy (WSS) underwent an extensive review and consultation with managers, and six priorities were identified. They are: position evaluation plan, human resources planning, internal communications/external marketing, knowledge transfer, leadership building and management development, and terminable allowance.

Other ongoing WSS initiatives are the development of an on-line applicant tracking system for internal and external selection processes, and the development of core training plans for all operational divisions. Core training plans will be used to develop individual learning plans for CNSC staff.

Finance

In 2002-2003, the CNSC recovered 78% of its $48.1 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 million were incurred to regulate fee-exempted publicly funded health care institutions, educational institutions and federal departments.

The CNSC continued to review its cost recovery program during the reporting period. 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 to licensees, which are currently based on 1992 costs. From April to June 2002, the CNSC sought licensee and key stakeholder feedback on its proposed new fees regulations; the purpose of this extensive pre-consultation exercise was to solicit feedback from licensees on the proposed fee changes prior to drafting the new regulations to ensure they reflect, to the extent possible, the requirements and views of licensees.

Based on the feedback from licensees, the CNSC has made changes to its proposed cost recovery program and the new cost recovery regulations have been drafted. Licensees and stakeholders then had a second opportunity to comment on the proposed regulations when they were published for consultation in Part I of the Canada Gazette in early 2003. The CNSC has reviewed all comments received, and is making changes to the draft regulations. It is anticipated that the final regulations will come into force later in 2003.

Communications and Information Management

The Communications and Information Management Directorate continued to support 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. A Communications and Consultation Policy for the CNSC was developed and issued during the reporting period. This new policy will help ensure that communications and consultation initiatives of the CNSC are well coordinated, effectively managed and responsive to the needs of the public, stakeholders and employees. The CNSC also issued two draft regulatory documents for stakeholder comment during the reporting period. The first document concerns Public Access to Information held at the CNSC, and the second concerns Licensee Public Information Programs.

Information Technology

During the reporting period, the Information Technology Services Directorate (ITSD) continued to provide systems and services critical to the operation and administration of the CNSC. ITSD implemented a "Decision Framework for Setting IT Priorities" to better leverage the CNSC's investments in technology. ITSD also played a key role in launching the CNSC's Nuclear Medicine On-Line initiative in October 2002, as part of the broader Government On-Line initiative. ITSD's proposal to initiate the Electronic Regulatory Filing (ERF) Project was approved during the reporting period. The goal of the multi-year ERF project is to enable a transition from paper to digital as the preferred method for licensees to conduct business with the CNSC.

Financial Statements

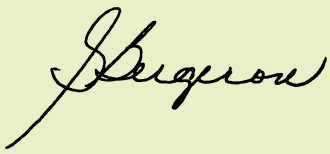
Management Responsibility for Financial Statements

The accompanying financial statements of the Canadian Nuclear Safety Commission for the year ended March 31, 2003 and all information included in its annual report are the responsibility of management.

These financial statements have been prepared by management based on Canadian generally accepted accounting principles and, where appropriate, they include amounts that have been estimated according to management's best estimates and 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

Ginette Bergeron
Vice President, Corporate Services Branch

Ottawa, Canada
June 5, 2003

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, 2003 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, 2003 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

Crystal Pace, CA
Principal
for the Auditor General of Canada

Ottawa, Canada
June 5, 2003

Statement of Financial Position as at March 31

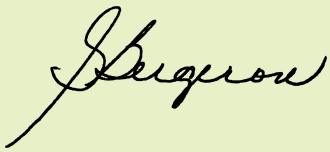
	2003	2002
Assets		
Current assets:		
Due from the Consolidated Revenue Fund	$3,821,984	$3,952,658
Accounts receivable (Note 4)	2,727,582	2,050,090
Prepaid expenses	171,193	54,605
	6,720,759	6,057,353
Non-current assets:		
Capital assets (Note 5)	1,234,493	1,171,313
Total Assets	$7,955,252	$7,228,666
Liabilities and Deficit		
Current liabilities:		
Accounts payable and accrued liabilities	$5,045,703	$4,111,417
Vacation pay	2,803,198	2,577,732
Deferred revenue (Note 6)	10,210,591	19,210,186
Employee severance benefits (Note 12)	680,182	1,803,233
	18,739,674	27,702,568
Non-current liabilities:		
Employee severance benefits (Note 12)	6,245,057	5,646,354
	24,984,731	33,348,922
Deficit	(17,029,479)	(26,120,256)
Total Liabilities and Deficit	$7,955,252	$7,228,666

Commitments and Contingencies (Note 11)

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

Approved by:

Linda J. Keen
President and CEO



Ginette Bergeron
Vice President, Corporate Services Branch

Statement of Operations for the year ended March 31

	2003	2002
Revenues		
Licence fees	$37,477,003	$37,708,642
Contract projects	732,413	472,338
Other	148,859	37,878
Total revenues	38,358,275	38,218,858
Expenses		
Health, Safety, Security and Environmental Protection	64,997,388	60,359,015
Non-proliferation and Safeguards	5,221,231	5,058,872
Total expenses (Note 7)	70,218,619	65,417,887
Net cost of operations	$31,860,344	$27,199,029

Statement of Deficit for the year ended March 31

	2003	2002
Balance at beginning of year	($26,120,256)	($19,747,805)
Net cost of operations	(31,860,344)	(27,199,029)
Services provided without charge (Note 9)	6,959,820	6,544,557
Net cash provided by government (Note 3 c)	34,121,974	15,080,383
Change in due from Consolidated Revenue Fund	(130,673)	(798,362)
Balance at end of year	($17,029,479)	($26,120,256)

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

Statement of Cash Flows for the year ended March 31

	2003	2002
Operating Activities		
Net cost of operations	$31,860,344	$27,199,029
Non-cash items		
Amortization of capital assets (Note 5)	(352,829)	(188,039)
Services provided without charge by other Government departments and agencies (Note 9)	(6,959,820)	(6,544,557)
Net (gain) loss on disposal of capital assets	14,394	(25,345)
Net change in non-cash working capital balances	9,756,973	(5,735,986)
Change in non-current employee severance benefits	(598,703)	(491,136)
Cash used in operating activities	33,720,359	14,213,966
Investing Activities		
Acquisitions of, and improvements to, capital assets (Note 5)	416,009	883,796
Proceeds on disposal of surplus assets	(14,394)	(17,379)
Cash used in investing activities	401,615	866,417
Net cash provided by government (Note 3 c)	$34,121,974	$15,080,383

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

Notes to Financial Statements as at March 31, 2003

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 13). The number of installations requiring insurance coverage is 14 (2002 - 13).

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 has recently completed a review of its Cost Recovery Program and plans to implement new cost recovery fees in July 2003.

2. Significant Accounting Policies

a) 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 3 shows the reconciliation of net cost of operations, parliamentary appropriations voted and net cash provided by government to parliamentary appropriations used.

b) Due from the Consolidated Revenue Fund
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 Consolidated Revenue Fund 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.

c) Revenue
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) 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.

e) 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.

f) Employee severance benefits

The CNSC's 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) 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.

h) 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.

i) 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

j) 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 13 of these financial statements.

k) 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.

3. Parliamentary Appropriations

a) Reconciliation of net cost of operations to total parliamentary appropriations used

	2003	2002
Net cost of operations	$31,860,344	$27,199,029
Items not affecting appropriations:		
Amortization	(352,829)	(188,039)
Vacation pay – accrual	(225,466)	106,207
Services provided without charge by other Government departments and agencies	(6,959,820)	(6,544,557)
Revenue (non-respendable)	38,358,275	38,218,858
Change in employee severance benefits	524,348	(1,246,723)
Other expenses	19,276	2,452
	31,363,784	30,348,198
Items affecting appropriations:		
Capital asset acquisitions	416,009	883,796
Prepaids (excluding accountable advances)	161,397	36,408
	577,406	920,204
Total parliamentary appropriations used	$63,801,534	$58,467,431

b) Reconciliation of parliamentary appropriations voted to total parliamentary appropriations used

	2003	2002
Parliamentary appropriations voted:		
Vote 20 - CNSC Operating expenditures	$52,580,000	$43,774,000
Supplementary Vote 20a	4,977,837	5,531,578
Supplementary Vote 20b	---	2,231,680
Transfer from Treasury Board Vote 10	180,000	33,000
Transfer from Treasury Board Vote 15	1,013,000	4,316,000
	58,750,837	55,886,258
Less: lapsed appropriation	1,869,551	2,959,996
	56,881,286	52,926,262
Statutory		
Spending of proceeds from disposal of surplus assets	23,808	169
Contributions to employee pension and non-pension benefit plans	6,896,440	5,541,000
Total parliamentary appropriations used	$63,801,534	$58,467,431

c) Reconciliation of net cash provided by government to total parliamentary appropriations used

	2003	2002
Net cash provided by government	$34,121,974	$15,080,383
Revenue (non-respendable)	38,358,275	38,218,858
Net change in non-cash working capital balances charged to Vote	(8,695,754)	5,123,014
Refunds of prior years' expenditures	17,039	45,176
Total parliamentary appropriations used	$63,801,534	$58,467,431

4. Accounts Receivable

	2003	2002
Licence fees	$1,846,987	$1,321,674
GST recoverable from CCRA	1,067,552	930,906
Other	37,114	21,581
Gross receivables	2,951,653	2,274,161
Allowance for doubtful accounts	224,071	224,071
Net receivables	$2,727,582	$2,050,090

5. Capital Assets

Capital Assets	Balance beginning of year	Acquisitions	Disposals/ adjustments	Balance end of year
Informatics equipment and software	$658,459	$189,753	$ ---	$848,212
Motor vehicles	527,657	---	(100,000)	427,657
Office and laboratory furniture and equipment	818,717	226,256	---	1,044,973
	$2,004,833	$416,009	($100,000)	$2,320,842

Accumulated Amortization	Balance beginning of year	Current year Amortization	Disposals/ adjustments	Balance end of year
Informatics equipment and software	$381,654	$102,707	$ ---	$484,361
Motor vehicles	317,804	70,896	(100,000)	288,700
Office and laboratory furniture and equipment	134,062	179,226	---	313,288
	833,520	352,829	(100,000)	1,086,349
Net Capital Assets	$1,171,313	$63,180	$ ---	$1,234,493

6. 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.

	2003	2002
Balance at beginning of year	$19,210,186	$14,884,143
Less: revenue included in licence fees in the year	(17,406,524)	(13,875,155)
Add: fees received in the year for future year licence periods	8,406,929	18,201,198
Balance at end of year	$10,210,591	$19,210,186

7. Summary of Expenses by Major Classification

	2003	2002
Salaries and employee benefits	$47,539,099	$45,024,333
Professional and special services	8,537,794	7,854,798
Accommodation	4,014,677	4,084,802
Travel and relocation	3,589,873	2,972,712
Furniture and equipment	1,675,957	1,546,962
Communication	880,656	839,460
Repairs	834,930	839,918
Information (includes printing and advertising)	785,454	603,118
Grants and contributions	779,038	246,557
Utilities, material and supplies	734,912	695,151
Amortization of capital assets	352,829	188,039
Commission Members' expenses	310,652	257,406
Equipment rentals	170,180	154,135
Miscellaneous	12,568	110,496
	$70,218,619	$65,417,887

8. 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 $16,106,893 (2002 - $14,281,390) and recognized revenue of $3,394,994 (2002 - $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 $6,959,820 (2002 - $6,544,557) as described in Note 9.

9. Services Provided Without Charge

During the year, the CNSC 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:

	2003	2002
Accommodation provided by Public Works and Government Services Canada	$3,741,909	$3,481,958
Contributions for employer's share of employee benefits provided by the Treasury Board Secretariat	2,870,657	2,687,128
Salary and associated costs of legal services provided by Justice Canada	223,000	212,700
Audit services provided by the Office of the Auditor General of Canada	56,000	95,000
Other	68,254	67,771
	$6,959,820	$6,544,557

10. 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. The total of these licences amounted to $2,537,260 (2002 - $2,497,753).

11. Commitments and Contingencies

a) Commitments

The CNSC has commitments for operating leases of equipment of approximately $246,924 (2002 - $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 $55,250,000 (2002 - $55,325,000) were still pending at March 31, 2003. 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.

12. Employee Future Benefits

a) Pension Benefits

Both the CNSC and its eligible employees contribute to the Public Service Superannuation Plan administered by the Government of Canada. The CNSC's contribution is currently based on a multiple of the employee's required contributions and may change over time. 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 $4,844,416 (2002 - $3,751,257).

b) Employee Severance Benefits

The CNSC provides post-retirement and post-employment benefits to its employees through a severance benefit plan. These benefits are not pre-funded and therefore, have no assets.

	2003	2002
Employee severance benefits, beginning of year	7,449,587	6,202,864
Expense for the year	1,193,521	2,294,369
Benefits paid during the year	(1,717,869)	(1,047,646)
Employee severance benefits, end of year	6,925,239	7,449,587

The increase in employee severance benefits paid in 2003 is due to organizational restructuring.

13. 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, 2003 the total supplementary insurance coverage is $584,500,000 (2002 - $515,500,000).

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 j), the CNSC administers the Nuclear Liability Reinsurance Account on behalf of the Government of Canada through a specified purpose account consolidated in the Public Accounts of Canada. During the year, the following activity occurred in this account.

	2003	2002
Opening balance	$553,421	$551,921
Receipts deposited	1,500	1,500
Closing balance	$554,921	$553,421

14. Comparative Figures

Certain comparative figures have been reclassified to conform to the presentation adopted in the current year.

Revenue and Cost of Operations by Activity (for the year ended March 31, 2003) UNAUDITED

	Revenue	Licences Provided Free of Charge	Total Value of Licences and Other Revenue	2003 Cost of Operations	2002 Cost of Operations
Licensing & Certification Activities					
Power Reactors	$26,815,433	$ ---	$26,815,433	$30,574,401	$30,114,644
Non-Power Reactors	816,612	129,500	946,112	1,741,702	1,596,312
Nuclear Research & Test Establishments	1,496,932	---	1,496,932	2,468,127	1,713,271
Particle Accelerators	100,300	---	100,300	305,872	319,488
Uranium Processing Facilities	863,083	---	863,083	1,096,460	1,174,541
Nuclear Substance Processing Facilities	239,999	---	239,999	461,594	496,918
Heavy Water Plants	247,677	---	247,677	52,777	101,322
Radioactive Waste Facilities	428,405	---	428,405	1,217,980	878,485
Fusion Facilities	65,737	---	65,737	82,342	244,826
Class I Nuclear Facilities	**31,074,178**	**129,500**	**31,203,678**	**38,001,255**	**36,639,807**
Class II Nuclear Facilities	68,031	758,821	826,852	1,029,770	890,545
Dosimetry Services	106,050	76,088	182,138	439,698	377,197
Uranium Mines & Mills	2,679,345	---	2,679,345	2,942,959	3,276,647
Nuclear Substances, Prescribed Equipment	3,318,608	1,571,051	4,889,659	8,289,173	9,133,556
Certification	243,204	1,800	245,004	1,366,542	1,204,641
Total Licensing & Certification	**37,489,416**	**2,537,260**	**40,026,676**	**52,069,397**	**51,522,393**
Non Licensing & Certification Activities					
Contract Projects	730,162	---	730,162	1,027,762	943,431
International Obligation & Cooperation	---	---	---	8,632,749	6,285,285
Other Regulatory Activities	---	---	---	8,488,711	6,666,778
Total Non Licensing & Certification Activities	**730,162**	**---**	**730,162**	**18,149,222**	**13,895,494**
Total	**$38,219,578**	**$2,537,260**	**$40,756,838**	**$70,218,619**	**$65,417,887**