Power Through Partnership

ANNUAL REPORT 2003-2004

AECL
Atomic Energy
of Canada Limited

ATOMIC ENERGY OF CANADA LIMITED

POWER THROUGH PARTNERSHIP

Partnerships between two or more parties create greater value for everyone. The value added by partnerships means the total achievement will be greater than the sum of the parts. Atomic Energy of Canada Limited (AECL) fully recognizes the power of partnerships. We focus our resources on what we do best and we use the resources of partners for the rest.

We enter into strategic alliances with companies to gain competitive advantages through leveraging our partners' resources, including markets, technologies, capital and people.

We are committed to partnerships with our customers. A customer partnership can create a future for both parties that is better than either party could have realized on its own.

We work in partnership with our employees. Our people are our most valued and respected resource. Our employees are the repository of our company's knowledge and they are central to our competitive advantage.

CORPORATE MANDATE – VISION – VALUES - COMMITMENT

Mandate

AECL will create customer and shareholder value through:

- Managing the Canadian nuclear platform responsibly and cost effectively
- Leveraging the technology base to deliver nuclear products and services to market
- Paying dividends from the profitable growth

Vision

- To be the top worldwide nuclear products and services company
- To protect the health and safety of the public, our employees and the environment
- To minimize nuclear legacy obligations for future generations

Values

To achieve our vision, AECL people must be:

- Driven by customers' needs
- Obsessed by quality, excellence and safety
- Personally responsible and accountable
- Engaged in open and honest communication
- Empowered to challenge and innovate
- Committed to learning and teamwork
- Motivated by performance

Customer Commitment

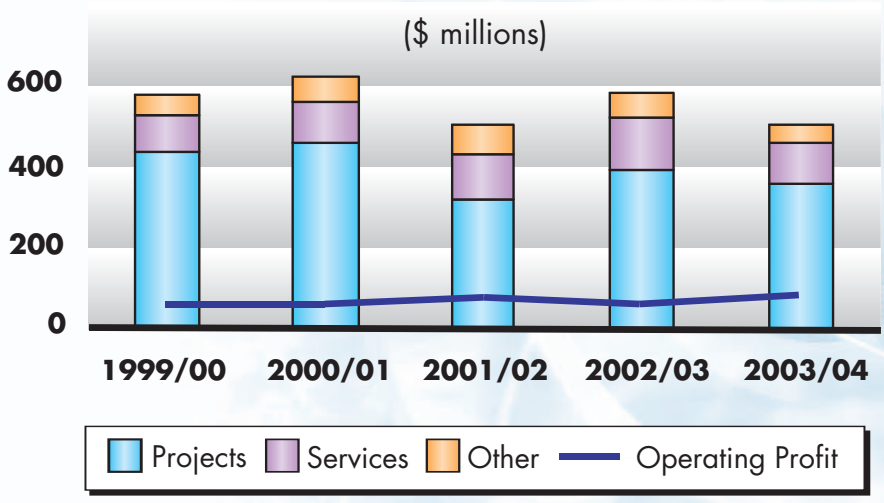
Trust, Quality, Innovation, Value ... AECL's commitment to you.

2003-2004 FINANCIAL HIGHLIGHTS

($ millions)	2003-2004	2002-2003
Commercial Revenue	497	580
Operating profit from commercial operations	78	53
Net income (loss)	2	(26)

FIVE-YEAR FINANCIAL HIGHLIGHTS

REVENUE & OPERATING PROFIT FROM COMMERCIAL OPERATIONS



2003-2004 SIGNIFICANT ACHIEVEMENTS

- Completed the second CANDU unit at Qinshan in China on budget and four months ahead of schedule;
- Secured an effective contract for the Cernavoda Unit 2 CANDU project in Romania;
- Earned net income of $2.4 million compared with a loss of $25.7 million in 2002-2003; Earnings from Commercial Operations were $33 million better than plan, allowing continued investment in Advanced CANDU Reactor™ (ACR) and provisioning for future decommissioning requirements;
- Achieved all ACR milestones;
- Obtained a commitment from a USA nuclear utility that it will seek United States Department of Energy (US DOE) support for testing a new licensing process in the USA based on the ACR;
- Maintained a $31 million investment in support of the safety and performance of the CANDU fleet; and
- Upgraded the financial systems to drive cost efficiency

TABLE OF CONTENTS

	Power through Partnership
	Corporate Values, Vision, Mandate and Commitment Statements
1	2003 – 2004 Financial Highlights / Five Year Financial Highlights
2	2003 - 2004 Significant Achievements
4	Letter of Transmittal
5	President's Message
6	Corporate Profile
7	Performance Against Objectives
11	Corporate Social Responsibility / Corporate Governance
13	Community Relations and Public Outreach Activities
14	Environmental Management
15	Security / Commercial Operations
20	Nuclear Laboratories
24	Management's Discussion and Analysis
32	Management Responsibility
33	Auditors' Report
34	Consolidated Financial Statements
37	Notes to the Consolidated Financial Statements
43	Five-Year Consolidated Financial Summary
44	Glossary of Abbreviations
45	Board of Directors and Officers
46	AECL Offices

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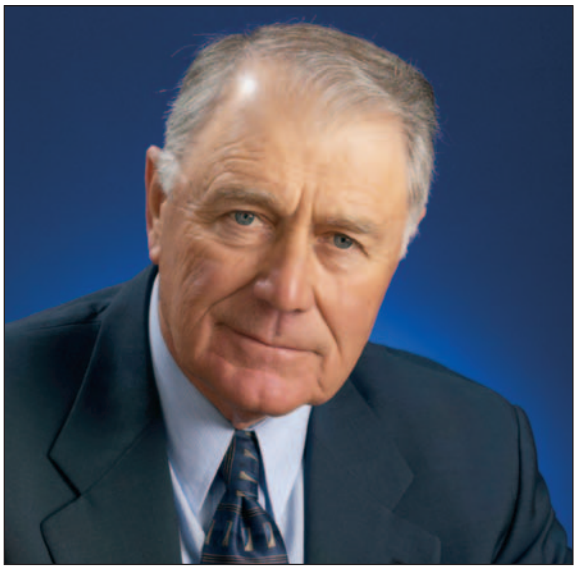
AECL
Atomic Energy of Canada Limited

LETTER OF TRANSMITTAL



AECL has made major changes in its fundamental corporate culture over the past five years, repositioning itself to better compete in a global business environment that constantly shifts and grows ever more challenging. To shape this transformation, we broadened our corporate mandate to embrace the concept of "managing the Canadian nuclear platform responsibly and cost effectively."

We also developed a vision statement that not only expresses our desire to be the top worldwide nuclear products and services company, but also to "protect the health and safety of the public, our employees and the environment."

We established a set of values, which state amongst others, that every employee is "personally responsible and accountable," is "engaged in open and honest communication," and is "obsessed by quality, excellence and safety."

Hand-in-hand with reshaping the operational side of the Company, we enhanced AECL's corporate governance regime to ensure the Corporation meets good governance standards and contributes to corporate social responsibility. Sound, effective corporate governance is a top priority at AECL. It not only contributes to the long-term success of the Corporation, but also assures our stakeholders that in managing AECL, we adhere to a comprehensive and sound set of ethical principles.

At a time when Canadians are increasingly concerned about the management of both private and public institutions, we know it is important to have in place a set of clear rules about how the Corporation is to be overseen at the highest level. We want all Canadians to know that their nuclear energy company is being operated ethically, efficiently and in the best interest of the country. We want them to see that accountability and transparency are built into the core of the management system. Because of the nature of our business, we want them to feel confident that we will act responsibly at all times, under all circumstances, and in all of our relationships with customers and suppliers. We are committed to protect the environment and ensure the long-term safety and security of people wherever we do business around the world.

We review our corporate governance practices every year, revising and updating them as required. This year, for example, the Board approved several high-level policies aimed at improving our effectiveness, including a policy on disclosure of information concerning wrongdoing in the workplace and a revised code of ethics and business conduct that applies to all directors, executives and employees, including attached staff and contractors.

To sum up, I believe that AECL's mandate, vision and values, plus its strong corporate governance practices, ensure that Canadians can have confidence in the stewardship of the Company now and in the future.

J. Raymond Frenette
Chairman of the Board

PRESIDENT'S MESSAGE

We work in partnership with our employees. Our people are our most valued and respected resource. Our employees are the repository of our company's knowledge and they are central to our competitive advantage. During the past year, we continued to improve our overall operational excellence and strengthen CANDU partnerships around the world. As a result, we are in an excellent position to serve CANDU customers in Canada and abroad. As the nuclear power option again attracts interest in many of the world's most electricity-intensive jurisdictions, AECL is positioned well to deliver on its mandate.

In the past few years there has been much mention of the "renaissance of nuclear power." It appears we are now at the dawn of this renaissance. At a time when demand for electricity is increasing worldwide and other sources of generation are becoming less viable, the benefits of nuclear energy – reliable, secure, economical, non-polluting, sustainable – are making it more attractive to government and utility officials, major power consumers and members of the general public.

AECL and its partners have prepared for this renewed interest in the nuclear option. Not only have we honed delivery of our existing standard CANDU 6 product over the past decade, but we have also moved ahead with the development of the new ACR, which incorporates a host of commercial and technical innovations that will make AECL, with its partners, a fierce competitor in domestic and global markets.

Track Record

Our track record in delivering nuclear power plants over the past decade is impressive. Together with our CANDU partners, we built six nuclear plants on time and on budget, and we are completing a seventh in Romania. Indeed, we completed our last two plants – at Qinshan, China – ahead of schedule.

What is more, we are confident we can transfer this international success to projects in Canada by blending our strengths with domestic capability to refurbish existing CANDU plants and to build new ones. Much of our confidence, of course, stems from a belief in the people who work for AECL, its partners, suppliers and customers. They are smart, knowledgeable, hard working, committed and experienced.

ACR

Our ACR is a next-generation reactor capable of driving the nuclear power renaissance throughout North America. We evolved its design from the time-tested CANDU heavy-water reactor concept, but adopted several advanced features that make this plant even safer, quicker and less expensive to build, and more economical to operate than existing units. In most deregulated markets, the ACR will be fully competitive with fossil fuel plants.

Over the past year, the ACR program progressed significantly as utilities and governments in Canada and the United States identified a growing demand for electricity and a potential supply shortfall. We are currently discussing ACR new-build projects with several utilities and other users of energy in both countries.

Company-Wide Culture Change

Over the next year, we will deepen our company-wide improvement program. Through our on-going change management process, we are determined to improve CANDU customer satisfaction. We understand that it is the individual's performance that directly impacts on customer satisfaction. Consequently, we are introducing a range of measures to align all of our employees with our customers' needs and with our company's objectives. Our goal is to consistently meet our customers' expectations regarding quality, delivery and price.

We have also ramped up our quality and safety programs. We have surveyed our customers in depth, and we have held candid focus groups with employees to find out how best to improve themselves. We know that engaging employees so they identify personally with the success of their company is the most powerful part of partnership.

Clearly, we are on the verge of a number of promising developments for the nuclear industry. In Canada, we have what it takes to be successful in this exciting, revitalized environment: strong international partnerships; a responsive network of suppliers; a successful track record; a superior new product in the ACR; a workforce second to none in the world; and a strong desire to win.

Robert G. Van Adel
President & CEO

CORPORATE PROFILE

Partnerships at work

AECL is an integrated nuclear technology company providing services to nuclear utilities worldwide. AECL's *Commercial Operations* include reactor development, design, engineering, special equipment manufacturing, project management and construction of CANada Deuterium Uranium (CANDU™) nuclear power plants, and provision of reactor services and technical support to operating CANDU reactors. AECL also operates *Nuclear Laboratories* and performs research, produces isotopes used in nuclear medicine and other applications, stores and manages nuclear wastes, and decommissions nuclear facilities.

CANDU nuclear reactors are AECL's flagship product, but we also build and operate Multipurpose Applied Physics Lattice Experiment (MAPLE) reactors for the production of medical isotopes, design and build Modular Air-Cooled Storage (MACSTOR™) used fuel storage facilities, manufacture fuelling machines for CANDU reactors, design and build robotics and other special purpose equipment and tooling, and we manage construction of nuclear plant and facilities worldwide through international partnerships.

AECL has developed the ACR, a next-generation CANDU nuclear power plant that represents an evolution of the best CANDU features and incorporates up-to-date modular design and construction techniques. ACR is highly competitive with all other forms of energy production and represents state-of-the-art in advanced nuclear technology.

CANDU reactors produce electricity safely and in an environmentally benign manner – without air pollution and without emission of greenhouse gases. CANDU reactors operate in Canada, the Republic of Korea, China, Argentina and Romania.

AECL was established in 1952 as a federal Crown Corporation to pursue peaceful uses of nuclear technology and today employs 3,500 highly skilled people in Canada and around the world.

AECL's website is at: www.aecl.ca

PERFORMANCE AGAINST OBJECTIVES

Significant progress was made in advancing the performance reporting process. A Business Unit organization was put in place to achieve clearer accountability for the different business lines and related products and services. In 2002 – 2003, company-wide measures were put in place to improve the alignment between corporate and business unit objectives. The Powered by People framework has been established as a specific tool to cascade the corporate objectives and measures throughout the organization. This has become a robust process where each employee will identify their role in achieving the corporate objectives.

FIVE YEAR OBJECTIVE: To achieve $1 billion in annual revenues

2003 - 2004 OBJECTIVE	2003 – 2004 RESULT	2004 – 2005 OBJECTIVE
Achieve revenues of $515 million	Revenues of $497 million, in spite of a reduction in the domestic services market	Achieve revenues of $380 million • Deliver on existing major projects • Secure major refurbishment projects
Achieve improvement in customer satisfaction	Customer Satisfaction Index developed and benchmark surveys performed with all major customers	Achieve improvement in customer satisfaction • Implement customer focus initiatives • Complete Customer Satisfaction training for all staff • Seek customer feedback and communicate issues to the organization • Conduct second customer survey
Implement quality vision and achieve quality improvement targets	Quality Index developed. Index in Q4 improved to 60 percent, over Q1 value of 41 percent	Implement quality improvement initiatives • Cascade high level business processes to lower level processes and map all company-wide procedures to these processes • Establish an effective Nuclear Laboratories Corporate Oversight Inspection Program
Achieve key ACR program milestones	All four key milestones were achieved (these related to establishment of a USA based office; set up a utility-supplier group; undertake project plan and obtain customer agreement; form a partnership for joint development)	Achieve key ACR program milestones • Achieve Canadian ACR pre-licensing milestones • Complete preparation for ACR design certification in the USA

PERFORMANCE AGAINST OBJECTIVES

FIVE YEAR OBJECTIVE: To achieve $1 billion in annual revenues

2003 - 2004 OBJECTIVE	2003 – 2004 RESULT	2004 – 2005 OBJECTIVE
Conclude major partnerships/joint ventures with the private sector	Significant partnerships with Hitachi, Bechtel, B&W, SNC Lavalin, AECON and NSS established	Conclude major partnerships/joint ventures with the private sector • Establish effective alliances for refurbishment projects • Establish partnerships for new technology initiatives
Achieve break-even net income	Achieved net income of $2.4 million. Earnings from Commercial Operations were $33 million better than plan, allowing continued investment in ACR and provisioning for future decommissioning requirements.	Achieve break-even net income before restructuring costs
Review key processes and achieve cost efficiencies of 15 percent	15 percent (i.e. $9 million) reduction achieved	Implement improvements in key processes • Identify processes and implement Continuous Business Improvement projects • Establish major proposals reporting and tracking system
Completion of leadership program by identified succession candidates	An executive leadership program was developed – 20 managers undertaking the program	Implement Change Management initiatives • Implement identified internal communications programs • Engage all staff through Powered by People process (cascading corporate objectives throughout the organization)

AECL is recognized as a leader in Health and Safety (H&S) and nuclear is recognized as a clean air solution

2003 - 2004 OBJECTIVE	2003 – 2004 RESULT	2004 – 2005 OBJECTIVE
Benchmark H&S practices for AECL sites and address gaps	Targets for radiation exposure limits and frequency of lost time accidents established and benchmarked	Achieve target reduction in radiation exposure to staff • 5% reduction
		Achieve target reduction in lost time accident rate and severity • Frequency reduced by 10% • Lost time reduced by 10%

PERFORMANCE AGAINST OBJECTIVES

AECL is recognized as a leader in Health and Safety (H&S) and nuclear is recognized as a clean air solution

2003 - 2004 OBJECTIVE	2003 – 2004 RESULT	2004 – 2005 OBJECTIVE
Improve CANDU fleet capacity factor by 2 percent	Electricity generation from CANDU fleet increased by more than 2 percent over prior year	
Sell products and services to maximize station performance	Significant products and services sold were spare fuelling machines, feeder repair tooling, emergency core cooling strainers, equipment for tritium removal facility, and emergency feeder replacement at CANDU stations	Sell products and services to maximize station performance • Launch new products through the New Technology Centre Business Unit
Achieve National Research Universal (NRU) reactor license extension and secure Cobalt 60 production	Chalk River Laboratories (CRL) license renewed by the Canadian Nuclear Safety Commission (CNSC) until 2006 July 31, and NRU operating license approved to December, 2005	Achieve NRU operating and isotope production milestones • Achieve NRU license extension milestones • Maintain high NRU operating availability • Maintain high reliability of medical isotope production
Demonstrate clean air benefits	Polls showed that public acceptance of nuclear increased when clean air benefits were recognized	Demonstrate clean air benefits • Include clean air benefits in all external communications • Achieve favourable federal policy re nuclear vs. greenhouse gas emitters
Government policy acceptance	AECL Commercialization Plan was reviewed and endorsed by 3rd parties.	Enhance public and government understanding of nuclear benefits and safety • Achieve federal and provincial support for nuclear refurbishment and new-build projects
Confirm linkages with the hydrogen economy and oil sands development with industry and government	ACR's potential for oil sands development is recognized and a company requested a joint feasibility study. The potential of hydrogen production via nuclear electricity now widely recognized.	Confirm linkages with the hydrogen economy and oil sands development with industry and government • Develop strategy and proposal for hydrogen technology development using nuclear

PERFORMANCE AGAINST OBJECTIVES

FIVE YEAR OBJECTIVE: Achieve progress in managing the Canadian nuclear platform obligations and effectively supporting the CANDU asset life-cycle through innovative solutions

2003 - 2004 OBJECTIVE	2003 – 2004 RESULT	2004 – 2005 OBJECTIVE
Enhance framework for planning and measuring platform research effectiveness	Platform research effectiveness targets set for CANDU Owners Group (COG) work all met. Research & Development (R&D) Program Review Committee established measures of R&D effectiveness	
Advance CANDU operating safety by achieving key safety R&D milestones	All outstanding safety and licensing reports were issued to COG (142 reports)	Advance CANDU operating safety by achieving key safety R&D milestones • Achieve R&D milestones in support of ACR development
Achieve key decommissioning plan milestones: target 90 percent	83 percent of milestones achieved	Achieve key decommissioning plan milestones • Achieve project milestones for research reactor used fuel retrieval and packaging system
Apply technology to enhance CRL waste and decommissioning programs Modular Above-Ground Storage (MAGS)	Second MAGS facility was completed and turned over to operations	Apply technology to enhance CRL waste and decommissioning programs • Identify specific technology and meet implementation milestones
Deploy MACSTOR at Wolsong site	Korea Hydro and Nuclear Power Co. Ltd. (KHNP) decided to build MACSTOR at the Wolsong site and contracted with AECL to perform the design of a MACSTOR facility	Achieve Stored Liquid Waste project milestones
Effectively manage all regulatory, quality, safety, security and environmental incidents	There were no incidents. All radiological effluents and derived release limits were well below regulatory limits.	Effectively manage all regulatory, quality, safety, security and environmental incidents • No significant incidents
Complete and implement results of the internal studies on platform research, facilities and security reviews	Three reviews were completed and recommendations being implemented	Implement results of the internal studies on platform research, facilities, decommissioning and security reviews • Achieve milestones established through the Continuous Business Improvement initiative

CORPORATE SOCIAL RESPONSIBILITY

AECL is committed to the concept of corporate social responsibility. We want our stakeholders – shareholder, customers, communities, governments, employees and advocacy groups to have the information to understand our business. AECL is committed to integrating social, economic and environmental goals into our business planning to create a solid foundation for increasing shareholder value. Over the past year, we have updated our supporting policies to reflect best practices with respect to governance, disclosure, environmental and social practices.

CORPORATE GOVERNANCE

In 1998, AECL established corporate governance guidelines based on those recommended by the Treasury Board of Canada in its publication *Corporate Governance in Crown Corporations and Other Public Enterprises.*

Since that time, AECL's Board has set the strategic direction for the Corporation and put in place mechanisms for financial supervision. It has also overseen the establishment of systems for performance management, risk management, succession planning, and stakeholder communications - all with a view to ensuring the existence of a solid accountability framework and governance regime at AECL.

The Human Resources and Governance Committee of AECL re-examined its corporate governance guidelines and determined that its guidelines remain relevant today, being particularly cognizant of increasing scrutiny by the public, stakeholders, regulators and others.

The guidelines, and AECL's activities with respect to each of them, are set out below. The Public Policy Forum judged AECL's performance consistent with best practices.

1. **The Board of Directors of AECL shall explicitly assume responsibility for the stewardship of the Corporation.**
   The Board of Directors approves the strategic direction of AECL through the corporate plan approval process, most recently with the corporate plan submitted to the Minister of Natural Resources in February 2004. In addition, the Board has reviewed and approved succession plans for executive and senior management. The Board regularly identifies and reviews major risks at its Risk Evaluation Panel, and sets the strategy with respect to each identified risk. The Board has reviewed the management information system, aimed at addressing the accuracy, quantity, timing, frequency and usefulness of Board information.

2. **The Board of Directors of AECL shall examine its public policy objectives, and periodically, the legislated mandate, to ensure their continuing relevance.**
   Following the appointment of its CEO, AECL embarked upon a process of corporate renewal, and re-examined its public policy objectives. Management and the Board together established a new mission and vision for AECL, and achieved consensus with the shareholder on the corporate mandate. Subsequently, this past year, AECL management, the Board and the shareholder, reviewed the commercial potential of AECL, and its current structure, in light of the mission, vision and mandate.

3. **The Board of Directors of AECL shall ensure that the Corporation communicates effectively with the Crown, other stakeholders and the public.**
   The Board and management maintain a dialogue with the shareholder on matters of importance. In addition, the Corporation has a renewed dedication to customer satisfaction and has embarked upon a formal process to enhance customer satisfaction. This process includes formal surveys and the establishment of a Customer Satisfaction Index and a Quality Index. The Corporation has an active communications program and has recently enforced its policy on disclosure of information.

4. **The Board of Directors and management shall develop an effective working relationship.**
   The Board works with the CEO and management in a relationship of openness and trust. Senior management attends Board meetings and Board events. At each meeting, the Board also meets *in camera* with the CEO.

5. The Board of Directors shall ensure that the Board can function independently.

The Board reviewed this issue this year. The Chair meets with management and members of the executive independently of the CEO. The Audit and Finance Committee regularly meets *in camera* and with management and auditors separately. The Board has the ability to obtain independent financial or legal advice as necessary.

The Board is committed to implementing best practices, and will actively review proposed recommendations by the Treasury Board with respect to the role and responsibilities of Audit Committees in the upcoming year.

6. In recognition of the importance of the position of the CEO, the Board of Directors of AECL shall periodically assess the CEO's position and evaluate the CEO's performance.

The Board sets annual objectives for the CEO and assesses and reports to the shareholder on the CEO's performance.

The Board sets annual corporate objectives as part of the Corporate Plan for the year, which are reported on quarterly at each Board meeting, and assesses performance against objectives annually.

7. The Board of Directors of AECL shall assess its effectiveness and initiate renewal of the Board.

A skills profile for directors has been developed and forwarded to the shareholder for consideration. An analysis of the skill set of current Board members individually and collectively is reviewed annually for consideration in the skills profile.

Recommendations for new appointments and renewals of existing directors are regularly made to the shareholder. The effectiveness of the Board is assessed by detailed survey annually and action plans are developed and implemented based on survey results. The Board will consider establishing an assessment process for both directors and the Chair in the upcoming year.

The Board has also noted recent announcements made by the shareholder with respect to governance at Crown Corporations and will work closely with the shareholder to ensure that the shareholder's requirements are implemented and that governance at AECL is continuously improved and enhanced.

8. Directors of AECL shall receive orientation and education programs appropriate to their needs.

An orientation program, the elements of which have been reviewed by the Board, is undertaken by all new members. This program includes site tours, presentations by senior staff on the activities of AECL, briefings by executives on matters of strategic importance, and computer and information technology training. Board members have access to a computerized library of all Board minutes and Board materials on record since the establishment of AECL in 1952.

Board members regularly attend training sessions and conferences, as appropriate.

9. The Board of Directors shall review the adequacy and form of compensation for directors.

The Board has written the shareholder on the adequacy of the compensation for directors. Compensation for directors is established by AECL's shareholder through Order in Council, most recently by Order in Council PC 2001-574. The Board is committed to working with the shareholder to ensure that compensation policies for directors reflect the responsibility and competence required to fulfill the role.

10. The Board of Directors shall assume responsibility for developing AECL's approach to governance issues.

The Board approves related policy and has delegated implementation of governance practices to the Human Resources and Governance Committee.

The Committee regularly reviews governance practices and has assumed responsibility for its implementation for the Corporation.

The Board of Directors met five times in fiscal year 2003-2004 for a total of 10 days, with attendance at 91 percent. The Committees of the Board (four) met an average of five times, with attendance at 95 percent.

COMMUNITY RELATIONS AND PUBLIC OUTREACH ACTIVITIES

AECL is committed to developing and maintaining solid, long-term relationships with all stakeholders. We are committed to timely information sharing, consultation and collaboration. We recognize that we must listen, and we must always aim to resolve community concerns. Only through the strong support of our communities will we be able to supply our customers with the nuclear products and services they need, while contributing to a strong economy, a clean environment and a healthy society.

We aim to build trust and support by engaging and actively working with stakeholders. One of the major highlights for AECL during this period was the successful renewal in June 2003 of the site operating licenses for the CRL, (valid until July 31, 2006) and the operating licenses for the two MAPLE reactors and their associated New Processing Facility (valid to May 31, 2005). AECL received extensive and positive reinforcement of its licensing applications from the local communities, elected officials, businesses and organizations.

We are convinced about the societal benefits of nuclear technology and we aim to secure greater public acceptance by building relationships based on trust. We therefore concentrate on fostering relationships with surrounding communities, being accessible to discuss and resolve community concerns and promoting the environmental benefits of nuclear energy. Amongst others in 2003-2004, we achieved these goals through:

- The inaugural meeting between AECL and two important CRL neighbours: the Algonquins of Pikwakanagan in November 2003 and the Concerned Citizens of Renfrew County in December 2003;
- Participation in a number of community tradeshows and displays in Renfrew and Pontiac Counties (this included participation in Options 2003, the first exhibition organized to highlight career options for skilled trades);
- Organized briefings with local media and elected officials with AECL's executive and Board of Directors;
- Continued support on a request from the Municipalité Régionale de Comté (MRC) de Pontiac for AECL to facilitate the development of an emergency preparedness plan and to present a subsequent briefing to the Fort Williams' Cottagers Association in July 2003;
- Support for the Capital Campaign Launch for the Credit Valley Hospital's new Carlo Fidani Peel Regional Cancer Centre in Mississauga;
- Workshops on science communications organized in partnership with Atlantic and Ontario post-secondary educational institutions for students in journalism and public relations;
- Distribution of educational videos on the benefits of nuclear technology to health care organizations; and,
- Continuing interaction with science organizations such as Science North, Science East and the York University *Yes I Can!* Science Project, an internet-based educational resource for K-12 teachers.

AECL actively supports community events

ENVIRONMENTAL MANAGEMENT

Clean energy – clean air

Overall accountability for environmental protection within AECL starts with the Board of Directors and cascades down through line management to all employees by way of the Environment Policy, the Environmental Protection Program and the AECL Management Manual. Twice a year, a Board Committee receives and reviews management reports on environmental performance and the implementation of our Environment Policy.

AECL's Environment Policy

AECL revised its Environment Policy in 2003 to better reflect its commitment to the protection of the environment and to corporate social responsibility in all its business activities. It has been posted on our website.

Our Environment Policy states:

- "We practice responsible environmental management.
- We are committed to the principle of pollution prevention.
- We set environmental objectives and targets to support continual improvement of our environmental performance.
- We comply with environmental laws, requirements, and recognized standards and guidelines applicable to our activities.
- We review the impacts of our activities, facilities, projects, services and products on the environment.
- We meet all applicable environmental requirements of our customers.
- We will seek to develop and improve technologies to advance environmental protection and clean air solutions.
- We promote public and employee awareness of this policy."

We have also appointed a Chief Environmental Officer and formed a Senior Environmental Committee to oversee our environmental activities worldwide.

ISO-14001 Environmental Management System

Progress continued in 2003 toward full implementation of the revised Environmental Protection Program, consistent with the ISO-14001 Environmental Management System (EMS) Standard across AECL sites in Canada and, in particular, towards achieving ISO-14001 registration at CRL. The ISO-14001 registration audit of CRL is scheduled for 2004 April.

To sustain the high priority we give to environmental education, we developed comprehensive training packages to support our Environmental Protection Program and the application of our Environmental Policy. All new employees and contractors attend an orientation session that includes environmental training. In addition, employees with significant environmental aspects to their work receive more detailed training. We revised the environmental protection course for managers to reflect the evolution of the Environmental Protection Program and to place stronger emphasis on the planning process for managing environmental performance.

Environmental Protection Program Index

AECL's Environmental Protection Program Index tracks performance against environmental targets aligned with AECL's Environment Policy and business requirements. The index is composed of four metrics related to addressing the significant environmental aspects for CRL, establishing an effective environmental management system, regulatory compliance, and continual improvement in systems and technology related to environmental and pollution controls.

Based on this work, we are developing a model for a generic health, safety, and environment index that can be applied to any of the compliance programs, such as Radiation Protection, Occupational Safety & Health, and Emergency Preparedness.

Environmental Monitoring

We maintain a comprehensive monitoring program at our licensed sites to measure and document effluent results and environmental impacts, and to demonstrate compliance with regulations and our internal standards. Our performance is documented in various annual reports, which are available on our internal web site to all employees and, upon request, to the public. Our Annual Environmental Performance Report is accessible to the public through our website at www.aecl.ca. The data in these reports shows that emissions remain low and well below regulatory limits.

ENVIRONMENTAL MANAGEMENT

The draft report from an Ecological Effects Review of CRL was completed in 2003. This study was conducted to assess CRL's overall impact on the environment from radiological and non-radiological stressors. The Ecological Effects Review followed ecological risk assessment guidance from the Canadian Council of Ministers of the Environment and the USA Environmental Protection Agency. One conclusion of the report was that CRL's activities are not expected to yield any significant ecological effects on the Ottawa River. Recommendations from the study are being assessed and will be incorporated into future environmental and ecological effects monitoring and operational control assessment for CRL.

Initiatives to Enhance Environmental Performance

In an on-going quest to meet, and exceed, regulatory and our own internal standards, we continue to advance concepts relating to environmental performance. For example, we are implementing a leading edge data collection and management system that will provide a centralized data repository for fast access, handling, communication and sharing of newly generated and historical environmental data. This system will facilitate demonstration of compliance with applicable licenses, legal requirements, ISO-14001 certifications and AECL policies.

Decommissioning and Waste Management

AECL minimizes its nuclear legacy obligations, some of which predate the incorporation of AECL. We do this by performing a variety of decommissioning and waste management activities at various sites in Canada. Decommissioning and waste management priorities are assessed regularly, taking into account public and worker health and safety, environmental protection, and business and regulatory requirements. Operational efficiencies and the effectiveness of program delivery were independently assessed this past year. The program was found to be well executed and activities for further enhancements were identified for follow-up in 2004-2005 as part of AECL's Continuous Business Improvement initiative.

SECURITY

AECL is committed to providing a secure workplace. The need to ensure security is considered in all aspects of our business activities. AECL supports Canada's determination to ensure the physical protection of assets and safeguarding of the public, operations personnel, and resumption of business. AECL complies with the Government of Canada's security policies and guidelines and the CNSC regulations. In-depth facilities security procedures are in place. AECL provides resources to Provincial and Federal emergency response teams and conducts intensive emergency response exercises.

COMMERCIAL OPERATIONS

Customer Focus

In 2003-2004, AECL continued to build and enhance customer relationships. Customer satisfaction remained a top priority. Working as a partner with customers to provide value-added products and services in a timely and cost-effective manner was the driving factor in our process-enhancement and people-skills initiatives.

During the year, we continued to introduce best practices, skills enhancements and awareness campaigns – all focused on growing AECL into a customer-driven technology company. AECL's management and employees are strongly committed to evolving from the traditional supplier-customer relationship into one where partnership, trust, reliability and quality are the watchwords of the association. We recognize that the performance of our customers' assets is the cornerstone of our own success.

Our ability to align ourselves with our customers' needs was reinforced through the introduction of a dedicated product management function within AECL. This also allows us to focus on our core skills, capabilities and products and, at the same time, it ensures that we continue to grow our areas of expertise in a strategic and planned way.

The cultural shift within AECL was tangible during 2003-2004, and customer feedback gave us valuable insight into where we need to focus. The needs of the customer are the foremost concern of employees and provide AECL with a common goal – to meet and exceed customer expectations. We intend to maintain an ongoing dialogue with our customers to ensure alignment, while we continue our culture change initiatives.

COMMERCIAL OPERATIONS

Partnerships at work

Partnerships

With the successful completion of the two CANDU reactors in China, we realized power through partnership. The success of this project was in large measure due to the strong partnerships we established with top Canadian and international companies committed to the nuclear power business. The relationships we developed on this project with Hitachi (Japan) and Bechtel (USA), in particular, have evolved into a strategic partnership to jointly develop and bring the ACR to market.

During the year, AECL and Hitachi also opened a joint office in Vancouver, British Columbia to promote the commercialization of both our companies' technologies. The initial focus will be to achieve sales in Canada and Japan. AECL's specific interests are to sell MACSTOR used fuel storage systems, passive hydrogen recombiners, AECL designed pump seals, Emergency Core Cooling strainers, and SMART CANDU™ technology for remote monitoring and diagnosing of reactor systems in Japanese nuclear plants. Hitachi's initial interests are to sell advanced computer systems for replacement of digital computer control systems in operating CANDUs in Canada. As well, Hitachi offers its latest display computer technologies and other advanced components to North American utilities.

In our continued drive for delivery of high-value propositions to our customers, we have established a new group within AECL. Through the Technology Commercialization Business Unit, further emphasis will be placed on the importance of the link between our product development activities and our strategic business interests and partnerships. This will effectively capitalize on the investment in government research and development and bring new products to market. The group brings together technical, relationship management and business development skills that can leverage complementary technologies amongst key strategic partners and generate access to new markets with emerging technology offerings. The Business Unit has a specific mandate to identify potential new products for market launch and has concluded a partnership with a global technology firm for joint business development.

AECL and Babcock & Wilcox Canada (B&W) are developing a teaming arrangement with a view to providing joint inspection and maintenance services for CANDU reactors worldwide. This teaming arrangement has evolved over a period of many years of AECL and B&W working together in a variety of areas and we are now entering a new phase in our relationship. Whereas in the past, AECL and B&W have had a traditional contractor – supplier arrangement, and at times were competitors, we endeavour to approach the future as strategic partners.

Projects and Services

In fiscal 2003-2004, AECL provided products and services to the fleet of CANDU reactors worldwide. Our purpose is to assist our prime customers, the CANDU utilities, to optimize the performance of their existing generating assets and to assist them in the refurbishment of existing and construction of new build plants.

Ontario

Significant changes are occurring in the Ontario electricity market. Late in the year, the provincial government completed a number of independent expert panel reviews, both of the Ontario electricity system and the operation of Ontario Power Generation (OPG). These studies resulted in plans by the government to overhaul the electricity system in Ontario. Of major significance to AECL is the commitment of the recently elected provincial government to shut down Ontario's coal generating stations as replacement capacity becomes available. This, together with the need to refurbish existing nuclear plants, presents a unique opportunity for the nuclear industry to contribute to the renewing of Ontario's supply capacity. AECL is teamed with a number of partners to ensure that it is well placed to play a significant role in helping to meet this need.

AECL's focus in Ontario is to provide reactor services and technical support to OPG and Bruce Power for reliable supply of electricity. Pre-project studies are underway by AECL and its partners, B&W, SNC Lavalin, AECON, NSS, and ASLF, aimed at developing a business case and firm proposal for Bruce Power to undertake a major refurbishment of Bruce A, units 1 and 2. This would secure an additional supply of 1,500 MWe of electricity for the Ontario market.

New build ACR or CANDU 6 projects are being discussed with the provincial government, OPG and Bruce Power as part of the electricity supply solutions to meet future demand.

Ontario Power Generation

OPG is a provincially owned utility with a total in-service power production capacity of 22,700 MWe. It operates three nuclear generating stations, Pickering A (one operational unit, three awaiting restart), Pickering B (four units), and Darlington (four units), with a total nuclear capacity of 6,100 MWe. The balance of generation capacity comes from thermal (fossil fuel), hydroelectric and wind power.

During the year, AECL was involved in a number of OPG's strategic projects, including the restart of Pickering A, Unit 4, and the return of the Darlington units to full-power operation. AECL also continued to supply a wide range of essential support services, including post irradiation examination, fuel channel scrape sample analysis, fuel handling support and flaw analysis.

Following OPG's cost overruns and schedule delays for the restart of the Pickering A units, an interim OPG Board was appointed in December 2003, pending completion of a blue ribbon panel review led by The Honourable John Manley, former federal Minister of Finance. This panel reported in March 2004 with a recommendation that OPG Nuclear is set up as a separate operating team. We are looking forward to working with this new team as it prepares to restart Pickering A, Unit 1 and develops a business case and plan for the restart of units 2 and 3.

Bruce Power

Bruce Power, Ontario's largest independent power generator, is located in the Municipality of Kincardine, about 250 kilometres northwest of Toronto. The utility employs more than 3,000 people and generates enough power to supply approximately 15 percent of Ontario's electricity. There are eight CANDU reactors on the Bruce site, with six currently in operation.

AECL continued to develop a preferred supplier approach with Bruce Power. Bruce Power has taken the lead in its approach to suppliers as it seeks to find ways to develop a long-term relationship with its key suppliers based on outsourcing of non-core services.

We provided essential engineering and support services to Bruce Power for inspection, maintenance and refurbishment of their reactors. In particular, we played a key role in the restart of the Bruce A, units 3 and 4, and also provided critical support on a number of urgent issues that assisted Bruce Power in maintaining the excellent performance of its plants.

In addition, we made a significant contribution to the design and qualification of Low Void Reactivity Fuel in support of Bruce Power's New Fuel Project. This project is aimed at increasing safety margins and electrical output from the four Bruce B CANDU units, starting in 2006.

Bruce Power is seriously considering the possible refurbishment and restart of Bruce A units 1 and 2. These units were shutdown in 1997 and 1995, respectively. AECL and its partners are participating in these studies and anticipate an opportunity to participate in a major way in the work required to restart these units.

Québec

Gentilly 2, Hydro-Québec's only nuclear generating station, entered service in 1983 and has operated reliably with a cumulative lifetime capacity factor of 80 percent. The location of this CANDU 6 plant near major electrical load centres in the province plays an essential role in stabilizing the Hydro-Québec grid, which is characterized by large remote hydraulic generating stations connected via long transmission lines.

We assisted the Gentilly 2 operations with support during their planned maintenance and inspection outage. AECL's work included fuel channel inspection services and feeder replacement work. We worked closely with the station staff to develop the options for the replacement of the Digital Computer Control systems and also provided support in preparation for the possible life extension of the station.

New Brunswick

New Brunswick Power operates the Point Lepreau Generating Station, a single CANDU 6 plant with a net capacity of 635 MWe. Point Lepreau has been operating for 21 years and has achieved a lifetime capacity factor of 83 percent. The station supplies up to 30 percent of NB Power's generation. AECL supplied fuel channel and feeder replacement services to Point Lepreau during its planned maintenance and inspection outage.

We continue to support NB Power in pre-project work for the planned refurbishment and life-extension of Point Lepreau. The

COMMERCIAL OPERATIONS

Qinshan Station

New Brunswick government has commenced an independent expert review of the economics and planning for the life extension of the Point Lepreau plant. AECL contributed and supported the study. The results of the study are to be released in April 2004.

China

The second CANDU 6 unit at the Qinshan site in Zhejiang province went into commercial operation in July 2003, four months ahead of schedule. With completion of the second unit, AECL's customer, the Third Qinshan Nuclear Power Company (TQNPC), formally accepted the Qinshan project.

Both Qinshan CANDU units are operating well, delivering safe, clean and reliable electricity to the east China grid. The Qinshan CANDU unit 1, which was completed in December 2002, achieved a capacity factor of 90 percent in its first full year of operation.

AECL is providing support to ensure these CANDU units continue to operate well.

We provided spare parts and operations support services for the Qinshan units, and are currently working on the supply of spare (standby) fuelling machines.

There is a clear and urgent need for additional nuclear capacity in China. The success of the Qinshan CANDU project has demonstrated the soundness of our nuclear technology, and AECL continues to pursue the possibility of a repeat CANDU 6 project in China. AECL is working closely with Chinese entities on various CANDU related studies. China and AECL have established the CANDU Engineering Center, which, amongst other tasks, is contributing to AECL's development of its ACR design.

Republic of Korea

KHNP operates 18 nuclear power reactors and additional reactors are in the planning stage. Four of the operating reactors are CANDU 6 units, located at the Wolsong site near Ulsan, on the southeast coast of the Korean peninsula. Nuclear power provides about 40 percent of total electricity generation in the Republic of Korea. AECL's ongoing support to KHNP through the provision of products and services contributed to excellent performance of all four CANDU units at Wolsong during the year. Wolsong CANDU units have an average lifetime capacity factor of 92 percent, which is the best among all Korean nuclear units and also among the best in the world.

We are currently engaged in detailed discussions with KHNP for the possible refurbishment and life-extension of Wolsong unit 1, which has been in operation for more than 21 years. The fieldwork related to the refurbishment would not be done until the latter part of this decade, but detailed planning and preparatory work would need to start early next year.

We have also been working with Korea Electric Power Research Institute on various projects in support of the Wolsong CANDU units, such as plant life management studies, analysis of reactor trip systems behaviour, and customization of AECL's ChemAND system for remote monitoring and analysis of system chemistry at the operating Wolsong CANDU units.

Romania

The first CANDU 6 unit built at Cernavoda in Romania was completed in 1996 and produces about 10 percent of Romania's electricity. The Cernavoda 1 unit has a lifetime capacity factor of 86 percent. AECL continued to provide technical support for the operation of this CANDU unit throughout the year.
In partnership with Romanian companies, AECL also designed and built a MACSTOR facility for the storage of used fuel from the Cernavoda 1 unit. This facility was built after a detailed environmental assessment and following Romanian regulatory approval, and is now receiving used fuel from the reactor on a regular basis.

Financing for the second Cernavoda reactor was secured in 2003, and AECL and its international partners have started construction on the Cernavoda 2 CANDU reactor. This second unit is planned for completion in 2007. AECL is building this CANDU unit in partnership with Ansaldo (Italy) and a number of Canadian and Romanian engineering companies, equipment suppliers, and construction contractors. The Cernavoda 2 project is now in its second year and is currently on schedule.

Romania continues to seriously study the feasibility of constructing a third CANDU unit at the Cernavoda site. Phase one of the feasibility study was completed in 2003, and the Romanian government approved the conclusions and recommendations in late 2003. Phase 2 of the study, which will investigate the financial ability and financial models for the project, will be started in 2004. AECL and its partners Ansaldo and KHNP are participating fully in these studies.

Argentina

AECL continued to provide technical support to the Embalse Nuclear Generating Station, a CANDU 6 reactor operating in Argentina. The Embalse reactor achieved a record of 459 days of continuous operation during the year. We supported Embalse through the supply of a variety of products and services such as fuel channel spacer location and repositioning, pressure tube sampling, and fuel handling spares.

Bulgaria

Bulgaria is in the process of selecting the technology to build additional nuclear capacity at its Belene site on the Danube River. The Bulgarian government has narrowed the options to a choice between completing a previously suspended light water reactor based on Russian technology and a new build CANDU heavy water reactor. Nuclear vendors from the Czech Republic, Russia, the USA and France are competing for the light water reactor project. AECL and its partners Ansaldo, Hitachi, Bechtel, and SNC Lavalin intend to submit a proposal for a CANDU 6 plant. The details of the bidding process are to be specified by the Bulgarian government by June 2004.

ACR Development

The opportunity to deploy the ACR-700 in Canada and the USA is gaining momentum. Market pull now dictates that ACR development needs to ramp up substantially to meet customer expectations. In the USA, we are moving quickly with our potential customer, Dominion Energy, and our partners Hitachi and Bechtel, to secure US DOE funding for programs leading to a Combined Construction and Operating License. In Canada, there is a recently recognized need for new electricity generation capacity. An anticipated electricity shortage in Ontario is emerging and nuclear energy is seen as part of the answer. Several twin ACRs are projected to help close the energy gap, with the potential to begin power generation in 2012 - 2013.

Both OPG and Bruce Power have confirmed their interest in new nuclear build projects, and AECL is working directly with Bruce Power on a feasibility study for ACR new build. Additionally, the ACR provides an opportunity for future innovative applications: environmentally friendly hydrogen production via nuclear electricity and recovery of Alberta's oil sands through economic nuclear energy steam.

The ACR promises significant competitive advantages in the market place, building upon the proven, safe and reliable features of the CANDU design, while improving upon technical specifications. Key technologies have been carefully assessed and the conceptual design for the ACR has been established to confirm concept practicability.

Continuing development work is aimed at achieving the capital cost target reduction of 40 percent compared to today's CANDU 6 and the reduction in construction time to four years. This will enable the ACR to be competitive with other energy sources over the life of a plant, including the costs of waste management and ultimate decommissioning. In addition to the benefits related to cost and performance, AECL brings a track record of delivering CANDU projects on time and on budget. ACR development is on track for a possible commercial project start by 2007 – 2008.

Isotope Production

AECL continued producing radioactive isotopes in the NRU reactor at CRL for use in nuclear medicine and for other industrial purposes. As the isotopes used in nuclear medicine have generally short half-lives they must be produced and shipped almost daily. These isotopes are supplied to MDS Nordion, which purify them and distribute them to customers in 60 different countries worldwide. More than 30,000 medical procedures are administered daily with isotopes produced in NRU. Thus AECL remains the largest supplier of medical isotopes in the world.

AECL is building two MAPLE reactors and a New Processing Facility for MDS Nordion. These facilities are dedicated to production of medical isotopes. Construction is complete and the facilities are undergoing commissioning. Once complete, medical isotope production will shift from NRU to these new facilities.

Research and Development

AECL's nuclear platform research and development program maintains and enhances the CANDU safety, licensing and design basis. In addition, it supports public policy for nuclear technology, develops pre-commercial CANDU technology and preserves the capability and expertise needed to address future issues.

AECL's expertise also supports improvements in plant performance and licensing for CANDU utilities. Generic support, part of the safety, licensing and design basis, is provided through cost-shared programs with the COG.

AECL continues to advance its research vision of providing components, systems and technology that will ensure CANDU's long-term safety and performance competitiveness in global markets.

Feeder Piping

Management of the gradual degradation of feeder pipes in CANDU reactors rose in priority within the CANDU industry as a result of operational experience with corrosion and cracking during the year. We are pursuing feeder technology, both for current operating plants and for life extension projects. We have intensified our effort to understand feeder material degradation and develop methods to manage the remaining life.

System Health Monitors

CANDU stations generate large amounts of data on plant operation. With new tools, this data can be synthesized into information that plant operators or technical unit staff can use to make decisions on various activities, such as those associated with inspection and remedial maintenance. We are developing a suite of such reactor life management tools, called System Health Monitors, to be integrated into the SMART CANDU™ concept. These tools help CANDU utilities operate their plants more reliably, with fewer unplanned shutdowns.

Plant Life Management

As nuclear plants age, AECL's Plant Life Management (PliM) program is identifying and responding to new challenges and customer needs. Over the past five years, the PLiM program has focused primarily on older CANDU plants, ensuring they will operate successfully and reliably through their design lives and preserving the option to extend their lives. Work continues on this effort, particularly now that several utilities are embarking on life extension, via refurbishment programs. In 2003-2004, we expanded PLiM activities to help utilities that have younger plants to optimize the operation of their plants through judicious PliM practices.

Steam Generators and Service Water Systems

AECL undertakes R&D to better understand and control steam generator degradation and to provide the basis for future design improvements. AECL has acquired a large database and uses this information to develop improved computer codes for design and analysis of steam generators. AECL is also active in developing Non-Destructive Examination inspection technology for faster and more accurate inspection of steam generators. This work is being done in collaboration with a private sector partner who is licensed to market the technology.

Balance of Plant Service Water Systems

For several years, we have been cooperating with Electric Power Research Institute in Palo Alto, California, to develop advanced secondary side water treatments. AECL contributes state-of-the-art radio-tracing techniques for a real-time measurement of the fouling rates under simulated power plant conditions. We predict that the results of this work will reduce CANDU operating costs by approximately $1 million per year. This technology is also applied to ACR service water systems design.

Heavy Water Production

Heavy water is used in CANDU reactors and represents a significant component of the capital cost. Therefore, we are continuing our research into assuring a low cost supply of heavy water for future CANDU reactors. AECL has developed and demonstrated two new technologies: one to produce new heavy water economically, the other to recondition the used heavy water that is available in various inventories. Efforts are currently focused on qualifying components, systems and design tools required for the eventual deployment of these technologies on a commercial scale.

Heavy water expertise is also being leveraged to support the Canadian government's initiative of fostering the hydrogen-based economy – particularly related to technologies for hydrogen fuel cells and hydrogen safety.

Fuel Channels

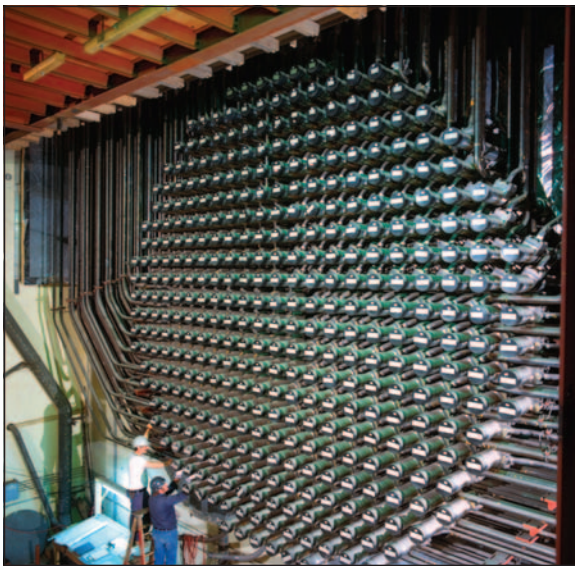
Fuel channels are key components of CANDU reactors, and a detailed understanding of their material behaviour is important for reliable and safe operation of the reactors. Understanding the mechanisms behind the processes affecting the materials during operation of the reactors continues to be a major goal of our R&D program. Through an integrated program, the results of testing materials in laboratory and research-reactor experiments are evaluated against the observed behaviour of materials in operating CANDU plants. In cooperation with CANDU utilities, we apply this knowledge to existing reactors to ensure safe and reliable operation.

Development of fuel channel components for new reactor designs, such as the ACR, employs technologies and capabilities derived from experience. Fuel channel materials in the ACR will operate at higher temperatures and internal pressures and will experience a higher neutron flux than currently operating reactors. Design-specific programs are evaluating manufacturability and material characteristics of reactor core components to support design and licensing assessments.

Reactor Core Technology

The ACR fuel, as well as CANDU FLEXible (CANFLEX™) Low Void Reactivity Fuel (LVRF) are based on three underlying fuel technologies developed by AECL: the CANFLEX 43-element advanced fuel bundle; the use of enriched uranium fuel; and the particular arrangement of enriched uranium and a neutron absorber that allows optimizing the fuel characteristics.
AECL is working with Bruce Power to qualify CANFLEX LVRF for use in the Bruce B reactors. This fuel will boost the operating power potential of these reactors. Use of this advanced fuel technology in the ACR will yield an enrichment that increases the fuel burn-up by a factor of three over natural uranium fuel.

As well as advanced fuel technology, the ACR design exploits advanced reactor physics methods developed for modeling the reactor neutronic behaviour. The operators of current reactors will also benefit from these advanced reactor physics methods, which result in much better agreement with measurements conducted in the Zero Energy Deuterium (ZED-2) lattice-testing reactor at Chalk River. In fact, these methods, along with new measurements of coolant void reactivity conducted this year in ZED-2, greatly reduce the difference between predictions and measurements of key physics parameters. We expect that this R&D will soon enable the industry to resolve a CNSC Generic Action Item on coolant void reactivity.



CANDU Calandria

We provided further support to the utilities that operate CANDU plants through the examination of irradiated power reactor fuel in the hot cells at Chalk River. This examination showed that in-reactor deformations of the fuel bundle have an insignificant impact on the cool-ability of the fuel.

Fuel cycle flexibility is an important hallmark of the CANDU reactor, and studies were undertaken that showed the ability of the ACR to use a wide variety of advanced fuel cycles. AECL continues to provide public policy support on behalf of the Canadian government on nuclear fuel and fuel cycle technology through participation on international committees.

Reactor Safety

A key aspect of the Nuclear Platform R&D program is to ensure the impact of potential accidents at nuclear facilities is minimal. For CANDU reactors, an important safety goal is to ensure adequate removal of heat from the nuclear fuel in the unlikely event that primary cooling is impaired (referred to as a Loss-of-Coolant Accident, LOCA). An emergency core cooling system protects against fuel heat-up in such an event.

One recent research project has yielded data on the transient thermal hydraulic conditions expected if a piping break were to lead to rapid depressurization of the primary heat transport system. To secure this data, it was necessary to develop and prove a state-of-the-art device to detect the fraction of water and steam in a pipe during a fast transient. The device was installed

on AECL's major safety thermal hydraulics facility, the RD-14M loop, and used in a series of experiments. Data from the experiments has since been used to validate predictions of depressurization transients made with our thermal hydraulics computer program, CATHENA. This validation has reduced uncertainties and increased confidence in CATHENA's ability to predict the behaviour of reactor cooling systems under accident conditions.

Past practice has been to overestimate the fission products that could be released under accident conditions to make up for uncertainties in the knowledge base. Now, we have developed a comprehensive database for actual releases under a wide range of conditions, and we are working with utility partners to develop a computer program that incorporates this knowledge. The program, called SOURCE-IST (IST stands for Industry Standard Toolset, and denotes the program as an industry-wide tool), is nearing completion and will soon be available for use in making more accurate predictions of fission product releases.

NRU Reactor

The NRU research reactor supports the research and product development, (fuel and material irradiation), required for new products such as the ACR and to improve the existing power reactor products. It also produces radioisotopes for medical and industrial use and provides neutron beams for basic and applied research.

AECL has recently completed seven major safety upgrades, bringing NRU into line with modern safety standards. Currently AECL has a project underway to obtain regulatory approval to extend the operating license beyond 2005. NRU operating availability is above 70% lifetime, and it has been operating above 80% availability in recent years.

Decommissioning, Environmental Restoration & Waste Management

AECL is committed to minimizing nuclear legacy obligations that are passed on to future generations. We fulfill this commitment by:

- Decommissioning closed nuclear facilities and redundant buildings;
- Remediating historical wastes from the early years of Canada's nuclear program;
- Restoring contaminated lands and groundwater; and,
- Managing the solid, liquid, and hazardous wastes generated by all of these activities.

We also contain liability by implementing management practices and employing technologies that will reduce the amount of waste produced in the future.

In addition, AECL manages low-level radioactive wastes at various locations in Canada on behalf of the federal government; provides support and expert advice to advance AECL's commercial activities and waste management product line; and delivers general engineering and project management services to the CRL site.

In discharging its responsibilities, AECL is committed to:

- Protecting the health and safety of workers, the public and the environment;
- Using resources in a manner that addresses the requirements of our regulators and demonstrates accountability to the shareholder and to AECL's customers;
- Harnessing our expertise to realize commercial returns for the Corporation;
- Delivering operational cost savings by decommissioning redundant facilities and reducing maintenance costs of those awaiting decommissioning; and
- Providing valuable space for other uses by completing restoration and decommissioning projects.

AECL's decommissioning program encompasses the laboratory sites at Chalk River (Ontario) and Whiteshell (Manitoba), as well as three AECL prototype reactor locations in Québec and Ontario.

Activities at Chalk River

We are working on several projects at Chalk River to reduce legacy liabilities and improve waste management practices. Last year we decommissioned redundant buildings, commissioned modern waste management systems and advanced projects to establish facilities and capabilities critical to our objectives.

In addition, AECL conducted protective maintenance and monitoring of the shut down facilities at Chalk River and the prototype reactor sites. All three reactors await dismantling.

Activities completed in 2003-04 include security system upgrades and building condition assessments to determine the practicality of retaining the various structures in a storage-with-surveillance state.

Activities at Whiteshell

In January 2003, the CNSC issued AECL a six-year Phase 1 Decommissioning License for the Whiteshell Laboratories. We focused our efforts on implementing the decommissioning plan for the site throughout 2003-2004. Phase 1 of the Whiteshell decommissioning program is aimed at reducing risks from contaminated facilities and stored wastes, reducing costs of site operation and placing the site's nuclear facilities in a secure storage-with-surveillance state for future dismantling.

The Whiteshell site operates in compliance with provincial and CNSC regulations. In 2003-2004, there were no reportable events or effluent emissions that exceeded applicable regulations.

Waste Technology Activities

During 2003-2004, AECL continued its work with OPG on the R&D required to further develop technologies for the deep geologic disposal option for nuclear fuel waste. We completed projects associated with site characterization, repository design and engineering, and long-term safety assessment. We also carried out research and demonstration projects for customers in France, Japan, Sweden, and the USA.

In January 2003, we were advised by OPG that they would withdraw as the major source of funding for the operation of the Underground Research Laboratory (URL) near Pinawa, Manitoba. In response, AECL began removing redundant experimental facilities and is now developing a comprehensive closure plan for the facility.

In the interim, in collaboration with Japan Nuclear Cycle Development Institute (JNC) and Agence Nationale pour la Gestion des Déchets Radioactifs (ANDRA), the radioactive waste management organization of France, AECL is completing the Tunnel Sealing Experiment, which is an engineering-scale demonstration of the design, construction and performance of concrete-and-clay-based sealing technologies that are similar to those that would be used in a geological used fuel disposal vault.

Low-Level Radioactive Waste Management Office

The Low-Level Radioactive Waste Management Office (LLRWMO) works closely with regulators, government and community groups to develop solutions to historic low-level radioactive waste issues across Canada. AECL operates the LLRWMO on a cost-recovery arrangement with Natural Resources Canada.

As part of its clean-up along the Northern Transportation Route, extending from Port Radium, North West Territories to Fort McMurray, Alberta, the LLRWMO finished building the Fort McMurray long-term waste management facility in 2003. Approximately 42,500 m3 of contaminated material was cleaned up in Fort McMurray during the entire project, and it is now safely managed and monitored by the LLRWMO. The LLRWMO also manages low-level radioactive waste facilities in Toronto (Scarborough) and Port Hope, Ontario, as well as in Tulita and Fort Smith, North West Territories.

During the year, the LLRWMO made excellent progress with the environmental assessment and licensing phase of the 10-year Port Hope Area Initiative, which involves cleaning up waste and building long-term waste management facilities for more than 1.5 million m3 of historic low-level wastes in the Port Hope area. Following scientific and engineering studies, and extensive public and stakeholder consultations, the LLRWMO recommended to local municipalities preferred waste management concepts for each of the two projects under the Port Hope Area Initiative, which includes the Port Granby and Port Hope Long-Term Low-Level Radioactive Waste Management Projects. If approved, the low-level radioactive waste would be managed in engineered, aboveground facilities and monitored for the long-term to ensure performance.

In recognition of its achievements in low-level radioactive waste management, the LLRWMO project to remediate the Waterways Site in Fort McMurray received an Award of Merit from the Consulting Engineers of Alberta. In addition, the LLRWMO has been recognized as a finalist for a Globe Award for Environmental Excellence in the category of Brownfield Redevelopment for its work in Port Hope, where the LLRWMO is assisting the municipality in the development of a new water treatment facility.

MANAGEMENT'S DISCUSSION AND ANALYSIS

This management's discussion and analysis (MD&A) has been approved by the Audit and Finance Committee of AECL's Board of Directors. It provides a review of the performance of AECL for the year ended March 31, 2004 and should be read in conjunction with the consolidated financial statements and accompanying notes included in this Annual Report.

This MD&A contains forward-looking statements with respect to AECL based on assumptions that management considers reasonable at the time of preparation. These forward-looking statements by their nature, necessarily involve risks and uncertainties that could cause actual results to differ materially from those contemplated. We caution the reader that the assumptions regarding future events, many of which are beyond the control of AECL, may ultimately prove to be incorrect since they are subject to risks and uncertainties.

Financial Review

Against the backdrop of encouraging news about the future of the nuclear power market both in Canada and overseas, AECL ended the year with a return to profitability. Earnings from Commercial Operations were significantly higher than both the prior year and the expectations at the start of the year as reflected in the Operating Budget, approved by the Shareholder subsequent to the submission of the 2003-2004 Corporate Plan. This improvement was achieved in spite of an overall reduction in commercial revenue, which had been anticipated. For the ACR, development activities continued and the 2003-2004 results reflect a lower level of net unfunded costs. Federal government support was received in 2003-2004 for the development program, substantially offsetting costs incurred, compared with a significant charge against consolidated earnings in the preceding year.

2003-2004 Actual Results Compared to 2002-2003

Key financial results	($ millions) Actual Results	
	2003-2004	2002-2003
Operating earnings		
Commercial Operations	78	53
Advanced CANDU Reactor	(21)	(36)
Research Activities	(23)	(28)
Decommissioning activities	(32)	(15)
Net Income/(loss)	2	(26)

Commercial Operations generated $78 million earnings in 2003-2004, significantly higher than the previous year, largely reflecting excellent execution of major projects and company-wide cost improvements. ACR expenditures were close to double the previous year but generated a smaller net expense. This reflects prudent spending management in accordance with market requirements and the government funding received in 2003-2004. Research activities generated a net charge of $23 million compared with $28 million last year reflecting cost improvements in R&D and related infrastructure. Decommissioning activities caused a net charge of $32 million, $17 million higher than the previous year, reflecting the increase in the net present value of the decommissioning liabilities.

As a result, consolidated net income was $2 million in 2003-2004 compared with the loss of $26 million in 2002-2003. The 2003-2004 results are after the absorption of a $32 million charge in decommissioning activities compared with a $15 million loss in the previous year, both relating to adjustments in respect of the increase in the net present value of the decommissioning liabilities. Excluding these adjustments, earnings from core operations in 2003-2004 were $34 million compared to a loss of $11 million in the prior year.

2003-2004 Actual Results Compared to the Operating Budget

Key financial results	($ millions) 2003-2004	
	Actual Results	Operating Budget
Operating earnings		
Commercial Operations	78	45
Advanced CANDU Reactor	(21)	(15)
Research Activities	(23)	(30)
Decommissioning activities	(32)	-
Net Income	2	-

Compared with the Operating Budget, actual earnings from Commercial Operations are much higher, reflecting the same factors as highlighted above in the section comparing actual results with the previous year. The ACR net expenses were higher than the level established in the Operating Budget as a result of

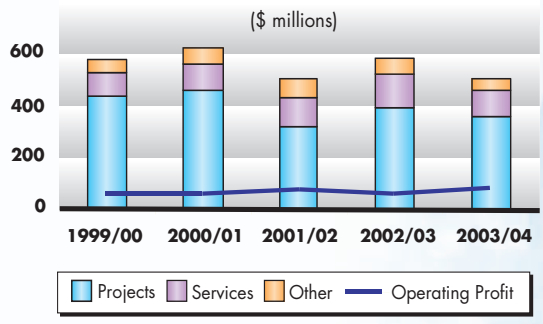
spending requirements to address the momentum in the USA market. Research net expenses were lower largely due to cost improvement actions. Decommissioning activities generated higher net expenses attributable to the adjustment in the net present value of the decommissioning liability reflecting higher spending profile over the next five years. The Operating Budget assumed no such adjustment due to uncertainty of the timing of the spending profile. Net income was $2 million compared with a breakeven position in the Budget.

Commercial Operations

Commercial Operations are divided into three lines of business: Projects, Services and Other Services. Projects include new-build projects and refurbishment projects together with related project management services, equipment procurement and deliveries, and the sale of heavy water. Services include technology and waste management services. Other Services mainly consists of production of isotopes, engineering and related supplies under long-term supply arrangements.

	($ millions)	
	2003-2004	2002-2003
Revenue	497	580
Operating profit	78	53

REVENUE & OPERATING PROFIT
FROM COMMERCIAL OPERATIONS



Commercial Operations	($ millions) Actual Revenue	
	2003-2004	2002-2003
Line of Business		
Projects	355	389
Services	99	125
Other	43	66
Total Revenue	497	580

Consolidated revenue from Commercial Operations was $497 million in 2003-2004 compared to $580 million in 2002-2003. As expected, with the Qinshan project in China coming to an end, revenue from major projects declined, reaching $355 million in 2003-2004 compared with $389 million in 2002-2003, contributing to 41% of the decline in revenue. A major contributor to revenue was the Cernavoda Unit 2 project, with advancement of work after securing the contract effective date by the first quarter of 2003-2004. In spite of lower revenue, Projects business achieved better earnings largely through project management excellence, delivering major projects such as the Qinshan project in China ahead of time and in a more efficient manner. AECL's 2004-2005 Corporate Plan predicts a steady growth of revenues from Projects, reflecting forecast increases in demand for new generating capacity in Canada and aboard. AECL is engaged in feasibility studies on refurbishment and new-build projects with several utilities in Ontario, New Brunswick, the USA and the Republic of Korea.

Services revenue was $99 million in 2003-2004 compared to $125 million in the previous year. The reduction was attributable to lower activities on the Cernavoda Dry Spent Fuel Storage facility project in Romania, which was successfully completed in 2003-2004. Another important factor was the reduced level of services to domestic utilities, partially offset by higher activities on offshore services projects. Services business has strengthened its operations during the year by realignment of its resources to match the forecast revenue levels, by restructuring its organization to emphasize customer satisfaction and by developing IT tools to improve project and resource management. The change in management structure took effect in mid year and had a positive impact on results in the fourth quarter. This change together with management's commitment to improve project execution, from proposal through delivery, provide the opportunity for continued improvements in earnings for this segment of business in 2004-2005. Our strategies for the Services business is to grow and diversify through the expansion of our customer base, service offerings and geographic coverage. We have put in place a program to enhance service value to customers. To the extent that successful execution of our deliveries results in new orders, revenue and earnings for Services business will continue to improve.

Other Services generated revenue of $43 million compared to $66 million in the previous year reflecting lower shipment of isotopes and related supplies.

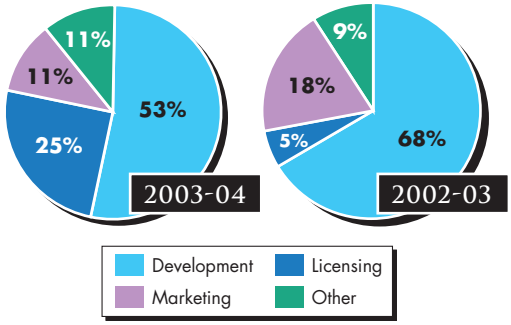
Notwithstanding the overall revenue reductions, operating profit increased in 2003-2004 by 47% to $78 million from $53 million in 2002-2003. Important contributions came from good performance of the Qinshan project, an increase in the lease income from the sale of heavy water inventory, and continued prudent management of expenses. As AECL repositions its market focus, we have taken measures to realign resources and reduce our costs in order to preserve our financial capability. The Company is beginning to see the results of a corporate-wide cost cutting program that started in the early part of 2003 and includes head count and general expense reductions. This was reflected in the 15 percent reduction of AECL's overhead costs in 2003-2004.

Advanced CANDU Reactor

The ACR is AECL's next-generation CANDU nuclear power plant, which features an evolutionary design and revolutionary economics. The scope of activities includes engineering, business development and securing the required pre-licensing for the successful commercialization of the reactor.

	($ millions)	
	2003-2004	2002-2003
Funding	46	–
Expense	67	36
Net expense	(21)	(36)

ACR EXPENSES



Product development and market development of the ACR increased during 2003-2004, incurring $67 million in expenses compared to $36 million in the previous year. Of this total, product development including licensing was $52 million, twice the $26 million of the previous year. The level of activities were managed to achieve critical milestones in accordance with market conditions. During the year, federal government support of $46 million was received for the ACR program, reducing the net charge against earnings to $21 million compared to $36 million loss in the previous year.

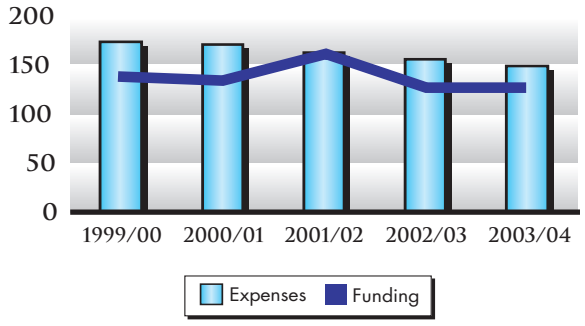
Research Activities

The scope of Research activities includes R&D support of the safety and performance of the existing CANDU fleet, R&D for the COG, pre-commercial development and the associated site operations and facilities necessary to support those activities. This business segment is managed at a targeted net expense level within committed funding levels from the federal government, augmented by cost-shared R&D revenue from the utilities. The shortfall is covered by cash generated from Commercial Operations.

	($ millions)	
	2003-2004	2002-2003
Funding	127	128
Expense	(150)	(156)
Net expense	(23)	(28)

RESEARCH ACTIVITIES

($ millions)



Total funding in support of Research activities for 2003-2004 was $127 million, slightly lower than last year. Within this total federal funding was reduced to $103 million in 2003-2004 from $107 million in 2002-2003 reflecting the termination of one-time special funding included in the previous year's allotments. Funding from the COG in support for CANDU safety, licensing and the design basis reduced slightly from $16 million in the previous year to $14 million, reflecting lower level of work requirements. Part of the overall funding includes the deferred capital funding, which offsets amortization of research assets previously acquired by

government funding. This funding increased to $10 million in 2003-2004 from $5 million in the previous year. This increase reflects the accelerated amortization of the URL facilities, as a result of the initial phase of safe shut down activities after more than twenty years of successful operations.

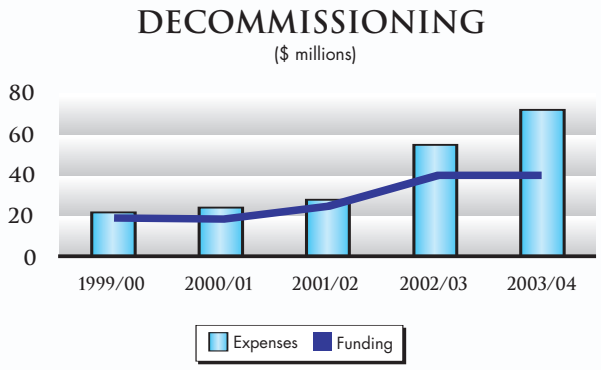
Overall, the activity level in research and development and related infrastructure remained substantially unchanged from the previous year. This was reflected in total expenses of $150 million compared with $156 million in 2002-2003. Within the total Research activities, spending on R&D amounted to $51 million representing a reduction of $7 million from the previous year primarily driven by process improvements. Spending on nuclear facilities and support at $99 million was $1 million higher than previous year. This mainly reflects ongoing security enhancement projects to meet CNSC requirements. An important element of research activity is to support the safety and performance of the entire CANDU fleet, and the level of investment was maintained at $31 million in 2003-2004.

Decommissioning Activities

AECL's decommissioning program has the primary long-term focus of addressing historic liabilities, which includes liabilities that were incurred prior to the creation of AECL in 1952. Activities include the stabilization of shutdown facilities, dismantling, decontamination, residual waste storage and disposal. The program is designed to achieve health, safety, and environmental protection objectives that are in accordance with CNSC regulations.

	($ millions)	
	2003-2004	2002-2003
Funding	40	40
Expense	(72)	(55)
Net expense	(32)	(15)

Funding for decommissioning activities was derived from parliamentary appropriations of $30 million, provided under the government's Program Integrity initiative and $10 million from the net proceeds of the sale or leases of government funded heavy water inventory. Decommissioning expenses include the adjustment to the decommissioning and site remediation provision reflecting any changes in management estimates of costs and the annual accretion of the net present value of the liability. In 2003-2004, an adjustment to the liability was made to reflect the impact of the anticipated increase in spending on decommissioning activities over the next five years as projected in the 2004-2005 Corporate Plan. This resulted in a net charge to operations of $32 million compared to $15 million in the previous year.



Cash Flow

Cash generated from operations was $30 million in 2003-2004 compared to $62 million in 2002-2003. The decrease was mainly attributable to lower receipts from customers, reflecting a lower level of revenue and the utilization of customer advance payments received in the previous year. Higher cash receipts from parliamentary appropriations, primarily related to the ACR funding support, and lower payments to suppliers and employees partially offset the decrease.

Cash used in investing activities was $30 million in 2003-2004 compared with $102 million in 2002-2003. The purchase and sale of short-term investments generated a net inflow of $34 million compared with a net $32 million outflow in 2002-2003. This reflected the strategy of shortening the duration of the investment portfolio in response to market interest rate conditions and to meet operational needs. Funds used for decommissioning were higher than the previous year by $2 million, largely reflecting increased spending in decommissioning activities to achieve the planned milestones. The decommissioning funds provided for in 2003-2004 under investment activities included a $2 million scheduled deposit to the Nuclear Waste Management Organization (NWMO) trust fund, which was held by AECL for the benefit of NWMO. As at March 31, 2004, the cumulative total for the fund, including interest, was $13 million, to meet the *Nuclear Waste*

Management Act requirements in respect of the long-term management of nuclear fuel waste in Canada. Lower capital spending in 2003-04 following completion of major security upgrade projects in 2002-2003 to comply with CNSC requirements also contributed to the reduction in investing activities.

Financing activities resulted in a net outflow of $1 million, representing repayment of long-term debt to the federal government, compared to a cash inflow of $11 million in the previous year, which included one-time parliamentary appropriations for security enhancements and for other government policy-driven programs. As at March 31, 2004, AECL's long-term debt totalled $4 million compared with $5 million in the previous year.

AECL's year-end cash and cash equivalents reduced slightly to $101 million from the previous year's level of $102 million, while segregated cash and short-term investments reduced to $24 million from $57 million reported last year. It is anticipated that the cash level will be further reduced over the year now in progress due primarily to investment of AECL funds in the development of the ACR, in addition to meeting ongoing operational requirements. Cash will also be consumed through drawdowns of customer advances as work continues on the related contracts.

Outlook

Commercial revenues in 2004-2005 are expected to be substantially in line with those of 2003-2004 (excluding the one-time heavy water sales in 2003-2004) and are forecast in our Corporate Plan to be $380 million. Project work on the CANDU unit in Romania will ramp up and Services work is expected to increase over time. However, sustained revenue growth is expected to come from refurbishment projects and new-build CANDU projects, which are forecast to gather momentum from 2005-2006.

The customer order backlog as of March 31, 2004 stood at $551 million, down from $849 million at the end of the previous year. Within fiscal 2003-2004, AECL secured a total of 505 contracts and purchase orders for new services work valued at $121 million. Nevertheless, order backlog is lower than the 2002-2003 year-end level by $298 million reflecting the advancement of work on the Cernavoda project and completion of existing projects.

The challenge in 2004-2005 will lie in successfully executing existing projects, maintaining our investment in launching the ACR, and in research and development capabilities, while preserving AECL's financial position to meet future demands for growth. AECL will seek to enhance overall revenue and cost performance by building upon customer and supplier relationships, by focusing on process improvements to achieve operational excellence and by increasing accountability through developing and vigorously monitoring key performance measures. These measures include customer satisfaction ratings, quality indices, process improvement targets, rating of employee satisfaction and selected financial indicators, which will be tracked and reported quarterly through a balanced scorecard approach. In addition, AECL will continue to solidify partnership opportunities with a view toward expanding the Company's product breadth, technological expertise and market penetration in its core markets.

Beyond 2004-2005, revenue is projected to grow through the delivery of refurbishment projects and new-build CANDU projects, both in Canada and abroad. AECL expects that refurbishments will be an essential component of the energy supply strategy, as the cost to utilities of delivering plant life extension remains competitive with alternative energy sources. The key opportunities in the near-term will come from the CANDU units in New Brunswick, Korea, and at Bruce Power's Units 1 and 2, with AECL engaged to participate in a feasibility review for the refurbishment of these units. While AECL expects to get significant scope in these projects, we are relying on the development of strong commercial partnerships with customers and suppliers to provide complete solutions for our customers.

In addition, there are other opportunities, both in domestic and international markets. The recent OPG review committee task force report indicates that a serious electricity supply gap will start to open by 2007 and will steadily widen beyond this, thus opening new opportunities for nuclear. In the USA, AECL is gaining momentum for the support of an ACR new-build and has gained the support of Dominion Energy, which has submitted a joint application to the US DOE along with AECL, Hitachi and Bechtel, for a licensing support of the ACR in the USA. AECL is also actively pursuing opportunities in China, Romania and Bulgaria for new-build projects and in Alberta to support the development of the Oil Sands Projects.

Longer term, the trends identified above are expected to accelerate as the energy markets undergo a nuclear renaissance. Concerns regarding the diversity and security of energy supply, environmental pressures, climate change initiatives and aging energy generating assets, along with the prospect of improved economics all indicate a promising future for construction of new nuclear generation capacity.

Management of Risks and Uncertainties

AECL manages risk through a formal risk identification and assessment process. This involves three levels of risk review: the Risk Evaluation Panel of the Board of Directors ensures satisfactory governance reviews of proposed commitments that present the highest level exposures; intermediate level exposures are reviewed by business units heads and senior corporate staff; commitments deemed to have a lower level of risk are reviewed by operations' senior managers and senior corporate staff. The CEO is directly accountable to the Board of Directors for all risk taking activities and risk management programs. The executives that support the CEO include the Chief Financial Officer, the Corporate Risk Review Panel, and the Chief Risk Assessment Officer, who is responsible for administering the Corporation's risk management process.

The primary business risk relates to the markets in which AECL operates. These are characterized by very long decision cycles for new major projects. Furthermore, demand levels for AECL's products and services are affected by factors such as technology development, worldwide economic trends, public acceptance and levels of commitment to new nuclear electricity generation capacity. To moderate such risks, AECL is establishing new strategic business alliances, growing its full service capability, pursuing the refurbishment business, commercializing its newly developed technologies, and carefully managing the portfolio of existing product lines.

In the new-build project business, our continued success is dependent on technological advances. As we continue to invest in supporting the CANDU design, we are also making a significant commitment to developing the ACR, which will be well placed to address the market needs relative both to other nuclear vendors and competing technologies. Achieving our ACR commercialization plan requires that the product meet functionality, cost and performance parameters as well as licensing requirements. Timing, continuing support of our partners, including government, customer participation, licensing preparation, and business/financing model and delivery structure will all be critical to achieve the successful launch of the ACR. The pre-licensing process takes several years and requires sufficient completion of design, engineering, analysis and R&D. AECL manages the risk by closely monitoring progress towards achieving ACR's key performance parameters and by carefully managing the available resources in accordance with market conditions.

There are considerable risks in managing AECL's major projects. These include potential project delays and cost overruns, contract performance risk, legal claims and changes in political conditions. We seek to manage these risks by stringent cost and schedule control of projects, vigorous legal review of contracts, ongoing monitoring and evaluation, including regular review of project forecast to completion. Maintaining comprehensive insurance coverage for various aspects of a given project and developing effective relationships with clients, project partners, subcontractors and suppliers are important elements in the project management process. Obtaining sovereign and third party guarantees have been part of our risk management strategy to reduce the adverse impact of changes in political conditions. Despite these risks, AECL has delivered all major CANDU projects it has managed in the past decade on time and on budget.

As AECL operates globally with sales and project offices in multiple jurisdictions, we are subject to risks and factors associated with doing business outside Canada. Foreign operations involve inherent risks that include taxes, currency controls and fluctuations, tariffs, import and other related restrictions and regulations. To minimize such risks, AECL has obtained tax exemptions or tax reimbursement arrangements for certain projects. Our sales and purchases are made mainly in Canadian dollars. In addition, where we have large foreign currency purchase commitments, we may enter into forward contracts to reduce our exposure. We are also subject to credit risks, but these are minimal as our customers are mainly large corporations and government related entities, which offer sovereign guarantees in their support.

AECL is constructing two isotope production facilities and a processing facility for a client under contract. These facilities are of a prototype nature and will be unique in the world. This project

had been delayed and total costs have exceeded original estimates, largely due to regulatory events and for technical reasons. AECL, together with the customer and the CNSC are actively engaged in resolving the remaining licensing issues. Pending the transfer of isotope production to the new facilities, AECL continues to deliver all isotopes required by the customer from the National Research Universal (NRU) reactor. AECL has been in negotiations with the customer regarding the overall level of costs born by the customer and the possible effects of the delay on the customer's business. The timing of resolution is uncertain.

AECL is committed to the effective management of all health, safety, security and environmental (HSSE) risks that are inherent in the operation of its major Canadian sites. AECL has implemented formal compliance programs that specifically address the deployment of due diligence processes and associated resources necessary to comply with all applicable laws and regulations. We have appointed a Chief Environmental Officer and formed a Senior Environmental Committee to oversee our environmental activities worldwide.

Our research laboratories operate major facilities such as reactors, experimental loops, hot cells, waste management plants and support services. These are used for research and for the isotope business. These facilities are subject to numerous laws and regulations regarding safety and environmental matters including the management of hazardous wastes and materials. There are business risks associated with the availability of facilities for production, risks associated with potential accidents, the availability of funding for facilities maintenance and upgrade, and consequential risk to AECL's reputation. AECL seeks to manage the safety and environmental risks through its Safety Management System, which includes numerous program controls, such as stringent safety reviews and audits. These controls provide assurance of full compliance to all applicable laws and regulations. Fitness for purpose of AECL's facilities is also ensured by a prudent program of equipment and facility maintenance such as investment in the NRU safety upgrades. These upgrades are subject to regulatory reviews and the risks associated with obtaining operating licenses. AECL has in place an extensive insurance program to mitigate losses that may arise from certain liability and property risks associated with the operations at the laboratories.

Achievement of strategic business objectives and the long-term assurance of the safety, licensing and design basis for CANDU technology requires that AECL attract, retain and develop adequate levels of staff with the requisite skills and technical depth. AECL will focus investment in the development of staff in the right technical areas. In support of that goal AECL has put in place a robust succession planning process. It will also ensure that its staff resources are optimally deployed to the key commercial and technology development activities.

AECL is acting to improve employee satisfaction and has launched a change management initiative to ensure all staff are given the tools required to adapt to the current corporate business environment. Training in customer satisfaction, leadership and internal communications are being deployed company wide to ensure employees are informed and fully engaged in the directional change executive management is driving to develop, namely AECL's commercial culture and the instillment of a customer focus. Ongoing implementation of the programs in quality, knowledge management, career and succession planning and continuous process improvement is a management focus to ensure the Company is gearing to meet a business environment, which is both challenging and robust.

Attention to quality reduces the risk of eroding the confidence of regulators and customers. Maintaining and enhancing customer and regulatory confidence continues to be the main objective of the corporate quality organization. AECL has implemented a strong corporate oversight function to ensure compliance with technical Quality Assurance standards, company-wide requirements and the *Nuclear Safety and Control Act* and its regulations. Leading the quality organization is a Chief Quality Officer who reports directly to the President and CEO, thereby ensuring the independence of corporate quality. Continual improvements have led to the achievement and maintenance of ISO 9001: 2000 Global Certifications at all AECL sites. AECL is also adopting the National Quality Institute's Progressive Excellence Program. Progress in quality improvements is being monitored on a quarterly basis through a Quality Index. Our focus on customer satisfaction is invigorating the organization and directing the culture toward adopting best practices to achieve business excellence.

The Corporation's internal auditors review, monitor and assess inherent operational risks and the effectiveness of internal

controls. The independent auditors review the effectiveness of internal controls to the extent they consider necessary in the course of their audit of the Corporation's financial statements. Both the internal and independent auditors report directly to the Audit and Finance Committee on findings from their audits.

Critical Accounting Policies

AECL's critical accounting policies are those considered to be the most important in determining its financial condition and results, and which require significant subjective judgment by management. A summary of the Company's significant accounting policies, including the critical ones discussed below, is set out in the notes to the consolidated financial statements.

Revenue recognition

AECL generates a significant portion of its revenue from long-term contracts. Revenue from long-term contracts is recognized using the percentage of completion method, where revenue, earnings and work in progress are recorded as related costs are incurred, on the basis of percentage costs incurred to date, relative to the estimated total costs. The nature of this accounting method is such that refinements of the estimating process for changing conditions and new developments are continuous. Accordingly, revisions in cost and earnings estimates during the terms of the contracts are reflected in the period in which the need for revision becomes known. Losses, if any, are fully recognized when first anticipated. Revenue from services sales are recorded when services are rendered and goods are shipped. Revenue from heavy water shipment is recognized when the shipment is accepted in the manner and the timing that is in accordance with the related contract. Interest payments under a hire purchase arrangement are recognized over the terms of the related agreement.

Decommissioning and Site Remediation Provision

The obligation for decommissioning and site remediation costs is recorded, at the discounted value, as a long-term provision on the consolidated balance sheet. The provision reflects the present value of the expected decommissioning and site remediation costs. The provision is adjusted each year to reflect actual expenditures incurred, changes in management estimates of costs and the time value of money. The valuation of the provision entails risk in that it is sensitive to the various assumptions underlying the estimates including the discount rate assumption, the timing of major decommissioning and remediation project expenditures as well as the regulations governing the decommissioning activities. There are significant potential risks to the valuation of the liability that are associated with different options for advancing or delaying decommissioning projects and assumption of either more aggressive or more conservative discount rates. The liability reflects the affordable funding level necessary to achieve health, safety and environmental protection objectives that are in accordance with the CNSC regulations. For fiscal year 2004, AECL has adjusted the estimated amount of its decommissioning liability to reflect the impact of the higher expenditure requirements as projected for the next five years in the Corporate Plan.

Heavy Water Inventory

Heavy water inventory is valued at the lower of cost or net realizable value. It is recorded as a long-term asset since the lead-time required in relation to future reactor sales exceeds one year. At the end of March 2004, the inventory includes 1,003 megagrams provided to the Sudbury Neutrino Observatory Institute, at no cost, for research and experimental purposes. During the year, the contract term for the return of the majority of such inventory has been extended to December 2007.

Parliamentary Appropriations

Parliamentary appropriations that are not in the nature of contributed capital are recorded as funding in the year for which they are appropriated, except as follows:

- Appropriations restricted by legislation and related to expenses of future periods are deferred and recognized as funding in the period in which the related expenses are incurred. No appropriations restricted by legislation or related to expenses of future periods were received in 2003-2004.
- Appropriations used for the purchase of property, plant and equipment are deferred and amortized on the same basis as the related asset. The balance of deferred capital funding as at March 2004 amounted to $42 million compared with $53 million in the previous year.

Commencing in 1996-1997, and pursuant to a 10-year arrangement with Treasury Board for funding decommissioning activities, AECL retains net proceeds from the sale or lease of government funded heavy water inventory. The net proceeds are transferred from contributed capital to deferred decommissioning funding and are then recorded as funding in the consolidated statement of operations as related expenditures are made.

MANAGEMENT RESPONSIBILITY

The consolidated financial statements, all other information presented in this Annual Report and the financial reporting process are the responsibility of the management. These statements have been prepared in accordance with Canadian generally accepted accounting principles and include estimates based on the experience and judgment of management.

Where alternate accounting methods exist, management has chosen those it deems most appropriate in the circumstances. The Corporation and its subsidiaries maintain books of account, financial and management control, and information systems, together with management practices designed to provide reasonable assurance that reliable and accurate financial information is available on a timely basis, that assets are safeguarded and controlled, that resources are managed economically and efficiently in the attainment of corporate objectives, and that operations are carried out effectively. These systems and practices are also designed to provide reasonable assurance that transactions are in accordance with Part X of the *Financial Administration Act* (FAA) and its regulations, as well as the *Canada Business Corporations Act*, the articles, and the by-laws and policies of the Corporation and its subsidiaries. The Corporation has met all reporting requirements established by the *Financial Administration Act*, including submission of a corporate plan, an operating budget, a capital budget and this Annual Report.

The Corporation's internal auditor has the responsibility of assessing the management systems and practices of the Corporation and its subsidiaries. AECL's independent auditors conduct an audit of the consolidated financial statements of the Corporation and report on their audit to the Minister of Natural Resources.

The Board of Directors, acting through an Audit and Finance Committee, composed of directors who are not employees of the Corporation or its subsidiaries, is responsible for ensuring that management fulfills its responsibilities in the preparation of the consolidated financial statements and the financial control of operations. The Audit and Finance Committee meets with management, the internal auditor and independent auditors on a regular basis to discuss auditing matters, internal controls and financial reporting issues. The independent auditors and internal auditor have unrestricted access to the Audit and Finance Committee with or without management's presence. The Audit and Finance Committee reviews the consolidated financial statements and the Management's Discussion and Analysis (MD&A) report with both management and the independent auditors before such documents are approved by the Board of Directors and submitted to the Minister of Natural Resources.

Robert G. Van Adel
President and Chief Executive Officer

Michael Robins
Chief Financial Officer

AUDITORS' REPORT

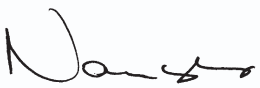
TO THE MINISTER OF NATURAL RESOURCES

We have audited the consolidated balance sheet of Atomic Energy of Canada Limited as at March 31, 2004 and the consolidated statements of operations, contributed capital, deficit and cash flow for the year then ended. These financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these financial statements based on our audit.

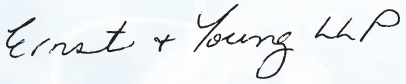
We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence 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 our opinion, these consolidated financial statements present fairly, in all material respects, the financial position of the Corporation as at March 31, 2004 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles. As required by the *Financial Administration Act*, we report that, in our opinion, these principles have been applied on a basis consistent with that of the preceding year.

Further, in our opinion, the transactions of the Corporation and of its wholly-owned subsidiaries that have come to our notice during our audit of the consolidated financial statements have, in all significant respects, been in accordance with Part X of the *Financial Administration Act* and regulations, the *Canada Business Corporations Act*, and the articles and by-laws of the Corporation and its wholly-owned subsidiaries.



Nancy Cheng, FCA
Assistant Auditor General
for the Auditor General of Canada



Ernst & Young LLP
Chartered Accountants

Ottawa, Canada
May 7, 2004

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Balance Sheet

As at March 31

(thousands of dollars)	2004	2003
Assets		
Current		
Cash and cash equivalents (Note 3)	$ 101,049	$ 102,292
Segregated cash and short-term investments (Note 3)	24,113	57,100
Accounts receivable (Note 3)	54,168	79,555
Current portion of long-term receivables (Note 4)	16,437	8,558
Due from Receiver General	-	2,000
Inventory	12,918	10,536
	208,685	260,041
Long-term receivables (Note 4)	271,005	147,751
Trust fund (Note 5)	12,599	10,119
Heavy water inventory (Note 6)	300,001	426,620
Property, plant and equipment (Note 7)	124,519	128,261
	$ 916,809	$ 972,792
Liabilities		
Current		
Accounts payable and accrued liabilities	$ 102,494	$ 92,596
Current portion of customer advances	69,208	101,665
Current portion of deferred decommissioning funding (Notes 9 and12)	6,235	-
Current portion of commercial and other provisions	1,963	13,050
Current portion of long-term debt (Note 8)	1,000	1,007
	180,900	208,318
Decommissioning and site remediation provision (Notes 5 and 9)	431,181	401,269
Customer advances	28,008	56,657
Commercial and other provisions	43,921	46,293
Deferred capital funding (Note 10)	42,114	52,559
Employee future benefits (Note 11)	50,574	50,921
Long-term debt (Note 8)	3,500	4,500
	780,198	820,517
Contingent liabilities (Note 14)		
Shareholder's equity		
Capital stock		
Authorized - 75,000 common shares		
Issued - 54,000 common shares	15,000	15,000
Contributed capital (Note 12)	557,729	575,812
Deficit	(436,118)	(438,537)
	136,611	152,275
	$ 916,809	$ 972,792

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

Approved by the Board:

Jean-Pierre Soublière, Director

Robert G. Van Adel, Director

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Operations

For the year ended March 31

(thousands of dollars)	2004	2003
Commercial operations		
Revenue		
Nuclear products and services	$ 476,995	$ 571,155
Interest on long-term receivables (Note 4)	15,727	4,520
Interest on short-term investments & other (Note 3)	3,759	4,121
	496,481	579,796
Expenses		
Cost of sales and operating expenses	$ 418,176	$ 526,574
Interest on long-term debt (Note 8)	163	170
	418,339	526,744
Operating profit from commercial operations	78,142	53,052
Advanced CANDU reactor		
Funding		
Parliamentary appropriations (Note 10)	46,000	-
	46,000	-
Expenses	66,599	36,028
Net advanced CANDU reactor expense	(20,599)	(36,028)
Research activities		
Funding		
Parliamentary appropriations (Note 10)	102,772	106,634
Cost recovery from third parties	13,740	16,316
Amortization of deferred capital funding	10,417	4,745
	126,929	127,695
Expenses	150,280	155,785
Net research expense	(23,351)	(28,090)
Decommissioning activities		
Funding		
Parliamentary appropriations (Note 10)	30,000	31,000
Decommissioning funding (Note 12)	9,729	8,864
	39,729	39,864
Decommissioning expense (Note 9)	71,502	54,514
Net decommissioning expense	(31,773)	(14,650)
Net income (loss)	$ 2,419	$ (25,716)

Amortization disclosure (Note 7)

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

Consolidated Statement of Contributed Capital

For the year ended March 31

(thousands of dollars)	2004	2003
Balance at beginning of the year	$ 575,812	$ 582,592
Transfer to deferred decommissioning funding (Note 12)	(18,083)	(6,780)
Balance at end of the year	$ 557,729	$ 575,812

Consolidated Statement of Deficit

For the year ended March 31

(thousands of dollars)	2004	2003
Balance at beginning of the year	$ (438,537)	$ (412,821)
Net income (loss)	2,419	(25,716)
Balance at end of the year	$ (436,118)	$ (438,537)

Consolidated Cash Flow Statement

For the year ended March 31

(thousands of dollars)	2004	2003
Operating activities		
Cash receipts from customers	$ 339,226	$ 515,058
Cash receipts from parliamentary appropriations	180,772	140,102
Cash paid to suppliers and employees	(493,823)	(597,462)
Interest on investments received (net)	3,648	3,913
Cash from operating activities	29,823	61,611
Investing activities		
Funds used for decommissioning activities	(50,083)	(47,780)
Purchase of short-term investments	(68,006)	(194,255)
Sales and maturities of short-term investments	101,960	162,011
Proceeds on disposal of property, plant and equipment	36	51
Acquisition of property, plant and equipment	(13,966)	(21,871)
Cash used in investing activities	(30,059)	(101,844)
Financing activities		
Cash receipts from parliamentary appropriations	-	11,838
Repayment of long-term debt	(1,007)	(1,029)
Cash (used in) from financing activities	(1,007)	10,809
Cash and cash equivalents:		
Decrease	(1,243)	(29,424)
Balance at beginning of the year	102,292	131,716
Balance at end of the year	$ 101,049	$ 102,292
Interest and bank charges paid during the year	$ 235	$ 217

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

For the year ended March 31, 2004

1. The Corporation

Atomic Energy of Canada Limited (AECL) was incorporated in 1952 under the provisions of the *Canada Corporations Act* (and continued in 1977 under the provisions of the *Canada Business Corporations Act),* pursuant to the authority and powers of the Minister of Natural Resources under the *Nuclear Energy Act.*

The Corporation is a Schedule III Part I Crown Corporation under the *Financial Administration Act* (FAA) and an agent of Her Majesty the Queen in right of Canada. The Corporation is exempt from income taxes in Canada.

These financial statements include the accounts of the Corporation's wholly-owned subsidiaries, AECL Technologies Inc., incorporated in the state of Delaware, USA in 1988, and AECL Technologies B.V., incorporated in the Netherlands in 1995.

2. Significant Accounting Policies

The Corporation's financial statements are prepared in accordance with Canadian generally accepted accounting principles. The significant accounting policies are:

a) Use of Estimates

The Corporation's financial statements include estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. The more significant areas requiring the use of estimates are in relation to heavy water inventory, costs of future decommissioning; future contract costs; commercial and other provisions; employee future benefits and amortization of property, plant and equipment. The Corporation reviews these estimates annually and does not expect the current assumptions to vary significantly in the near term.

b) Cash, Cash Equivalents and Short-Term Investments

Investments with maturities of 90 days or less from the date of purchase are presented as cash equivalents while short-term investments have original maturities greater than 90 days. Cash equivalents and short-term investments are carried at the lower of cost or market.

c) Trust Fund

Long-term investments in the Trust Fund established pursuant to the *Nuclear Fuel Waste Act* are carried at the lower of cost or market (see Note 5).

d) Foreign Currency Translation and Hedging Instruments

Transactions denominated in a foreign currency are translated into Canadian dollars at the exchange rate in effect at the date of the transaction. Monetary assets and liabilities outstanding at the balance sheet date are adjusted to reflect the exchange rate in effect at that date. Exchange gains and losses arising from the translation of foreign currencies are included in income.

The Corporation enters into forward contracts to manage its exposure to changes in exchange rates arising from contractual terms and ongoing business operations. Gains and losses on forward contracts are recognized when the forward contracts mature.

e) Inventory

Heavy water is valued at the lower of cost or net realizable value. Supplies are valued at cost.

f) Property, Plant and Equipment

Property, plant and equipment are recorded at cost which is amortized on a straight-line basis over the estimated useful life of the asset, and on a usage basis for certain machinery and equipment used in commercial projects, as follows:

Machinery and equipment	- 3 to 20 years
Buildings, reactors and land improvements	- 20 to 40 years

g) Decommissioning and Site Remediation Provision

The provision reflects the present value of the expected decommissioning and site remediation costs. The provision is increased each year to reflect the time value of money, adjusted for changes in management estimates of costs, and is reduced by the actual expenditures incurred.

h) Long-term Contracts

Revenue and costs on long-term contracts are accounted for by the percentage of completion method based on expenses incurred and applied on a conservative basis to recognize the absence of certainty on these contracts. Full provision is made for estimated losses, if any, to completion of contracts in progress.

i) Parliamentary Appropriations

Parliamentary appropriations that are not in the nature of contributed capital are recorded as funding in the year for which they are appropriated, except as follows. Appropriations restricted by legislation and related to expenses of future periods are deferred and recognized as funding in the period in which the related expenses are incurred. Appropriations used for the purchase of property, plant and equipment are deferred and amortized on the same basis as the related asset. Commencing in 1996-1997, and pursuant to the 10-year arrangement for funding decommissioning activities, the Corporation retains net proceeds from the sale or lease of certain heavy water. The net proceeds are transferred from contributed capital to deferred decommissioning funding and are then recorded as funding in the consolidated statement of operations as related expenditures are made.

j) Cost Recovery from Third Parties

The Corporation and the Canadian nuclear utilities (Ontario Power Generation, New Brunswick Power, Hydro-Québec and Bruce Power L.P.) have a common interest in the safe, efficient and economical use of power utilizing CANDU technology. Research programs aligned with these objectives are undertaken by the Corporation and cost-shared with the utilities. Funding under these arrangements is included in cost recovery from third parties and is recognized as the related expenses are incurred.

k) Pension Plan

Employees are covered by the Public Service Superannuation Plan administered by the Government of Canada. Contributions to the Plan are limited to those made by both the employees and the Corporation on account of current service. These contributions represent the total pension obligations of the Corporation and are charged to income on a current basis. The Corporation is not required under present legislation to make contributions with respect to actuarial deficiencies of the Public Service Superannuation Plan.

l) Other Employee Future Benefits

Employee future benefits include specific severance benefits as provided for under collective agreements and conditions of employment. Other benefits include workers' compensation claims for which the Corporation reimburses Human Resources and Skills Development Canada in accordance with the *Government Employees' Compensation Act* for current payments billed by the provincial compensation boards.

The Corporation accrues the employee future benefits over the employees' service periods. The cost of benefits earned is actuarially determined using management's best estimate of expected salary escalation, retirement ages of employees and expected health care costs.

3. Financial Instruments

Unless otherwise specified, the fair value of the Corporation's financial instruments approximates carrying value.

a) Cash, Cash Equivalents, Segregated Cash and Short-term Investments

Bank deposits are maintained at levels required to meet daily operating needs. Any surplus deposits are invested in the short-term money market. The investing strategy is based on a conservative risk assessment. All instruments are rated R1 Low or higher by the Dominion Bond Rating Service and A1 Global by Standard and Poors. These investments comprise bank certificates of deposit, high-grade commercial and government agency paper, and government treasury bills. The weighted average yield on the short-term investments held as at March 2004 is 2.7 % (2003 – 3.1%).

b) Foreign Exchange Contracts

The Corporation enters into foreign exchange forwards to reduce the risk associated with the purchase and sale of goods in foreign currencies. There are no forward contracts in effect as at March 31, 2004 (2003 - $4.6 million). All hedge transactions as at March 31, 2003 settled within one year. The fair value of the total forward contracts as at March 31, 2003 was estimated at $4.4 million.

c) Accounts Receivable

Accounts receivable represent normal trade instruments. Three customers (2003 - four), each representing greater than 10 per cent of the total accounts receivable, comprise an aggregate 50% (2003 – 64%) of total accounts receivable. No significant amounts are due in foreign currency.

4. Long-term Receivables

(thousands of dollars)	**2004**	2003
Contract receivables from customers in respect of the financing of products and services, maturing through 2019 at fixed repayment amounts.	**$ 287,442**	$ 156,309
Current portion	**(16,437)**	(8,558)
	$ 271,005	$ 147,751

Repayment amounts required over succeeding years are as follows (thousands of dollars):

2005	**$ 16,437**
2006	**17,229**
2007	**16,126**
2008	**16,045**
2009	**16,983**
Subsequent to 2009	**204,622**
	$ 287,442

5. Trust Fund

The Nuclear Fuel Waste Act required the Canadian nuclear utilities to form a waste management organization, the Nuclear Waste Management Organization (NWMO), to provide recommendations to the government on the long-term management of nuclear fuel waste and to implement the approach selected. The legislation also requires that each nuclear fuel waste owner establish a trust fund to finance implementation of the approach. Each individual trust fund is held for meeting the requirements of the Act and only NWMO may withdraw moneys from it in accordance with the provisions of the Act. AECL's initial deposit to its Trust Fund in 2002-2003, as required by the Act, was $10 million. Subsequent annual deposits of $2 million to the Trust Fund are required until the obligation ceases or the amount is modified by the government when certain requirements stipulated in the Act are met by NWMO.

The Trust Fund, which is invested in fixed income instruments with various maturities within three years, has been recorded as a long-term asset with a corresponding long-term liability in the balance sheet. These instruments comprise government bonds, high-grade corporate bonds, government agency paper, government treasury bills and bank certificates of deposit. Quoted market values of the instruments are estimated at $12.7 million as at March 31, 2004 (2003 – $10.1 million) with a weighted average yield of 3.8% (2003 – 4.0%). Interest earned on trust assets accrues to the Trust Fund.

6. Heavy Water Inventory

Heavy water inventory includes 1,003 megagrams provided to the Sudbury Neutrino Observatory Institute at no cost, the majority of which is scheduled for return in 2007-2008. Heavy water inventory is recorded as a long-term asset since the lead-time required in relation to future reactor sales exceeds one year. For certain inventories, AECL plans to obtain an upgrade and detritiation facility.

7. Property, Plant and Equipment

(thousands of dollars)	**2004**		2003	
	Cost	**Accumulated Amortization**	Cost	Accumulated Amortization
Commercial operations				
Land and land improvements	**$ 999**	**$ 248**	$ 999	$ 245
Buildings	**18,798**	**12,360**	18,691	12,074
Machinery and equipment	**24,351**	**15,685**	23,283	13,462
	44,148	**28,293**	42,973	25,781
Research				
Land and land improvements	**42,539**	**19,698**	27,548	18,636
Buildings	**99,903**	**56,975**	93,868	54,691
Reactors and equipment	**226,797**	**200,476**	221,022	189,156
	369,239	**277,149**	342,438	262,483
Construction in progress	**16,574**	**-**	31,114	-
	$ 429,961	**$ 305,442**	$ 416,525	$ 288,264
NET BOOK VALUE		**$ 124,519**		$ 128,261

Amortization of property, plant and equipment for the year ended March 31, 2004 amounted to $17.4 million (2003 – $10.5 million) in part offset by amortization of deferred capital funding of $10.4 million (2003 – $4.7 million).

8. Long-term Debt

(thousands of dollars)	2004	2003
Loans from Government of Canada		
To finance acquisition of assets since 1978, maturing through 2008, at interest rates varying from 2.84% to 3.49%	**$ 4,500**	$ 5,507
Current portion	**(1,000)**	(1,007)
	$ 3,500	$ 4,500

Repayment amounts required over succeeding years are as follows (thousands of dollars):

2005	**$ 1,000**
2006	**1,000**
2007	**1,000**
2008	**1,000**
2009	**500**
	$ 4,500

9. Decommissioning and Site Remediation Provision

When prototype reactors, heavy water plants, nuclear research, development and other facilities have no further commercial or research value to the Corporation, they are retired and subsequently decommissioned in accordance with Canadian Nuclear Safety Commission regulations (CNSC). Due to the variety of facilities, the decommissioning process may differ in each case. In some situations decommissioning activities are carried out in stages with intervals of several decades between them to allow radioactivity to decay before moving on to the next stage. Activities include dismantling, decontamination, residual waste storage and disposal.

The estimated future decommissioning and site remediation costs require that judgments be made about the regulatory environment, health and safety considerations, the desired end-state, technology to be employed and, in some cases, research and development for these activities that extend well into the future. Significant assumptions determine the valuation, such as timing of major decommissioning and remediation project expenditures, regulation requirements, volumes of waste, interest rates estimate, inflation factors, and impact of technological advances. Another important assumption is that the liability reflects the affordable funding level necessary to achieve health, safety and environmental protection objectives that are in accordance with CNSC regulations. Changes to these assumptions, as well as changes to the timing of the programs or the technology employed, or changes in the standards and regulations governing the decommissioning of nuclear facilities, could result in material changes to the value of the accrued liabilities. With programs of this duration and the evolving technology, there is a degree of risk surrounding the measurement of the costs for these programs, which may change over time. The Corporation has prepared a broad plan of activities to be carried out over the next 100 years. The plan follows a hierarchy of decommissioning activities to achieve: a controlled and controllable state for all redundant nuclear facilities that removes short-term risks; a sustainable, stable, safe state of the facilities under surveillance; and cost-optimized completion of actions to achieve a final end state that is an accepted completion of the decommissioning process as required by the regulator. The time-frame recognizes that the major nuclear facilities at Chalk River, including medical isotopes production, will require a managed and active site for a minimum of 100 years into the future. The provision has been discounted at a 5.75% risk-free rate.

The funding of actual expenditures of $39.7 million (2003 – $39.9 million) is described in Notes 10 and 12.

10. Parliamentary Appropriations

The use of government funding by the Corporation was as follows:

(thousands of dollars)	**2004**	2003
Research and related infrastructure	**$ 107,738**	$ 109,738
Security enhancements	**-**	1,762
Year 2000 reduction in appropriation	**(4,966)**	(4,866)
	$ 102,772	$ 106,634
Advanced CANDU reactor development	**46,000**	-
Program Integrity – Decommissioning activities	**30,000**	31,000
Capital – Security enhancements	**-**	6,938
	$ 178,772	$ 144,572

Government funding in 2003-2004 included ongoing support for nuclear research programs, for activities under the government's Program Integrity initiative for health and safety upgrades, including the safe long-term management of nuclear materials or waste, less the third of a five-year reduction in appropriation on account of $24.5 million received in prior years to assist in defraying Year 2000 computer costs, and for the development of the ACR program. Included in the 2002-2003 amount, funding of $8.7 million was received for programs undertaken to enhance security at AECL sites.

11. Employee Future Benefits

a) Other Employee Future Benefits

The Corporation adopted the practice of deferring actuarial gains and losses on employee future benefits other than pensions with subsequent amortization over the average remaining life expectancy of the employees.

The Corporation sponsors certain post-employment benefits as described in note 2(l). The discount rate used to calculate the interest cost on the accrued future benefit obligation is based on corporate high yield bonds with the same expected duration as the employee future benefits. The following table provides information about these plans.

(thousands of dollars)	**2004**	2003
For the year		
Current service cost	**$ 3,079**	$ 2,871
Interest on accrued benefit obligation	**4,136**	4,046
Benefits paid	**(7,575)**	(4,612)
As at March 31		
Accrued benefit obligation	**$ 56,192**	$ 56,552
Current portion	**(5,618)**	(5,631)
	$ 50,574	$ 50,921

The excess of the cumulative unamortized actuarial gains or losses in excess of 10% of the benefit obligation is amortized over the average remaining service period of active employees. The average remaining service period of the active employees covered by the other employee future benefits plan is 11 years (2003 – 11 years). The latest actuarial valuation of these benefits was performed in 2003-2004.

The significant actuarial assumptions used in calculating the accrued benefit obligation are as follows:

	2004	2003
Discount rate	**5.75%**	6.75%
Rate of compensation increase	**5%**	3% + merit

b) Pensions

The Corporation's employee pension benefits are covered through the Public Service Superannuation Plan as disclosed in note 2(k). Employer contributions made to the Public Service Superannuation Plan on behalf of employees are as follows:

(thousands of dollars)	**2004**	2003
Payments to the Public Service Superannuation Plan	**$ 31,656**	$ 33,032

The Corporation's rate of contribution to the Public Service Superannuation Plan is a 2.14 multiple (2003 - 2.14) of the employee contributions.

12. Contributed Capital and Deferred Decommissioning Funding

Included in contributed capital is approximately $318 million (2003 – $335 million) related to parliamentary appropriations received for the production of heavy water inventory. Up to and including 1995-1996, the Corporation was required to repay the government, by way of a dividend, the net proceeds from the sale of government funded heavy water. A 1997 Decision of the Treasury Board directs the Corporation to hold the proceeds from the sale or lease of government funded heavy water in a segregated fund for use in decommissioning activities for the 10-year period following the Decision. Commencing in 1996-1997, as government funded heavy water is sold or leased, the net proceeds are transferred from contributed capital to deferred decommissioning funding which is used to fund ongoing decommissioning activities.

In 2002-03, the Corporation fully depleted the segregated fund and advanced funds to finance the remaining decommissioning activities. In accordance with the Treasury Board Decision, the Corporation recorded such advance as a receivable. The Corporation continues to account for these transactions as a reversal of the originally established contributed capital.

Subsequent to 2005-2006, unless the Decision is renewed, the prior arrangement will apply whereby net proceeds would be repayable to the government and decommissioning activities would be funded through parliamentary appropriations. Accordingly, the Corporation expects that the government will continue to finance this obligation.

13. Related Party Transactions

In addition to the transactions disclosed in Notes 8, 10 and 11, the Corporation had the following transactions with the Government of Canada:

(thousands of dollars)	**2004**	2003
Repayment of loans		
Principal	$ **1,007**	$ 1,029
Interest	**180**	172
	$ **1,187**	$ 1,201

In the normal course of business, the Corporation also enters into various transactions with the Government of Canada, its agencies and other Crowns. These transactions are recorded at the exchange amount.

14. Contingent Liabilities

a) Performance guarantees

It is industry practice to use letters of credit, surety bonds and other performance guarantees on major contracts. Such guarantees may include guarantees that a project will be completed or that a project or particular equipment will achieve defined performance criteria. The aggregate amount of the Corporation's potential exposure under the guarantees is estimated to be $112 million on current commercial projects as at March 2004 (2003 – $164 million). Management does not expect these guarantees would result in material impact on the consolidated financial statements of the Corporation.

b) Other

In the normal course of operations, AECL becomes involved in various claims and legal proceedings. While the final outcome with respect to claims and legal proceedings pending at March 31, 2004 cannot be predicted with certainty, it is the opinion of management that their resolution will not have a material adverse effect on AECL's financial position or results of operations.

15. Comparative Figures

Certain 2002-2003 amounts have been reclassified to conform to the current year's presentation.

FIVE-YEAR CONSOLIDATED FINANCIAL SUMMARY

Five-Year Consolidated Financial Summary

Unaudited

(millions of dollars)

	2004	2003	2002	2001	2000
Operations					
Revenue	**497**	580	496	613	552
Parliamentary appropriations for research operations	**103**	107	136	109	106
Cost recovery from third parties	**14**	16	16	13	25
Research expenses	**150**	156	163	171	173
Net income (loss)	**2**	(26)	52	15	43
Financial position					
Cash, cash equivalents, segregated cash and short-term investments	**125**	159	157	52	119
Heavy water inventory	**300**	427	563	564	566
Capital expenditures	**14**	22	23	7	15
Property, plant and equipment	**125**	128	117	103	114
Total assets	**917**	973	924	821	896
Decommissioning and site remediation provision	**431**	401	387	384	378
Long-term debt (excludes current portion)	**4**	5	6	7	8
Shareholder's equity	**137**	152	185	86	72
Other					
Export revenues	**358**	361	257	421	352
Number of full-time employees	**3,214**	3,334	3,456	3,306	3,423

GLOSSARY OF ABBREVIATIONS

ACR	Advanced CANDU Reactor
ACR-700	Advanced CANDU Reactor – 700 MWe size
AECL	Atomic Energy of Canada Limited
AECON	Engineering and construction company
ANDRA	Agence Nationale pour la Gestion des Déchets Radioactifs
ASLF	ACRES-Sargent & Lundy-Fox
B&W	Babcock & Wilcox Canada
CANDU	CANada Deuterium Uranium
CANDU 6	CANada Deuterium Uranium – 600 MWe size
CANFLEX	CANDU FLEXible fuelling (Advanced Fuel Bundle Development Program)
CATHENA	Canadian Algorithm for Thermalhydraulic Network Analysis
CEO	Chief Executive Officer
ChemAND	Chemistry Analysis and Diagnostic
CNSC	Canadian Nuclear Safety Commission
COG	CANDU Owners Group
CRL	Chalk River Laboratories
D&WM	Decommissioning & Waste Management
FAA	Financial Administration Act
ISO	International Organization for Standardization (UN)
JNC	Japan Nuclear Cycle Development Institute
KHNP	Korea Hydro and Nuclear Power Co. Ltd.
LLRW	Low-Level Radioactive Waste
LLRWMO	Low-Level Radioactive Waste Management Office
LOCA	Loss-Of-Coolant Accident
LVRF	Low Void Reactivity Fuel
MACSTOR	Modular Air-Cooled Storage (spent fuel storage system)
MAGS	Modular Above-Ground Storage
MAPLE	Multipurpose Applied Physics Lattice Experiment
MD&A	Management's discussion and analysis
MWe	Megawatt-electric
NB Power	New Brunswick Power
NRCan	Natural Resources Canada
NRU	National Research Universal
NSS	Nuclear Safety Solutions Limited
NWMO	Nuclear Waste Management Organization
NWT	North West Territories
OPG	Ontario Power Generation
PARs	Passive Autocatalytic Recombiners
PliM	Plant Life Management
R&D	Research and Development
RD-14M	Reactor Development Test Facility
SG	Steam Generator
SMART CANDU	Simulation Models for Analyzing Radionuclide Transport
SOURCE-IST	IST-Industry Standard Toolset
TQNPC	Third Qinshan Nuclear Power Company
US DOE	United States Department of Energy
USA	United States of America
URL	Underground Research Laboratory
ZED-2	Zero Energy Deuterium (lattice-testing reactor)

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