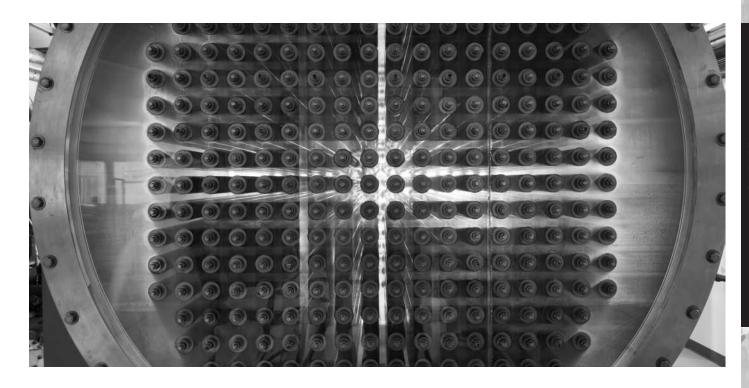


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Front cover: In preparation for their insertion, lattice sleeve assemblies are laid out on the floor as they would appear on the reactor face. Lattice sleeve assemblies are used to temporarily replace fuel channels that are removed from the reactor during a life extension project. The lattice sleeve assemblies are later extracted during the reconstruction phase of the project and replaced with new fuel channels.



# Who we are

Atomic Energy of Canada Limited (AECL) is an agent Crown corporation that provides full service nuclear technology to nuclear utilities around the world on a commercial basis while meeting strategic science and innovation policy objectives for Canada. Established in 1952, AECL is the designer and builder of Canadianmade CANDU® technology, including the Generation III+ Advanced CANDU Reactor® (ACR-1000®), the CANDU 6, one of the world's top-performing reactors, and the Enhanced CANDU 6® (EC6®).

AECL's 4,830 full-time employees deliver cutting-edge, world-class nuclear services, research and development support, design and engineering, construction management, specialized technology, life extension, waste management and decommissioning expertise in support of CANDU reactor products. AECL's expertise in nuclear science and technology results in health, energy, environmental and economic benefits for Canadians.

- **MANDATE** To be Canada's nuclear platform for nuclear science and technological expertise.
  - To operate a commercially viable, self-sustaining business designing, building and servicing CANDU nuclear power reactors.

## **MISSION**

• To provide safe, reliable, economical and sustainable nuclear energy solutions worldwide.

## **CANDU — POWERING PROSPERITY, SUSTAINABLY**

CANDU: Part of a Canadian tradition of global innovation. CANDU reactors have earned international acclaim for providing safe, clean and reliable electricity for more than 40 years. AECL's continued goal is to create superior designs, produced to the highest customer and licensing standards, delivered on time and on budget.

AECL designs and builds world-class nuclear reactors and offers a full suite of products, services and engineering support to global nuclear utilities.

The CANDU design features on-power fuelling and maintenance; horizontal pressure tube design; heavy water moderation; and dual independent fast-acting safety shutdown systems. CANDU technology also has the unique ability to use alternative fuel cycles, such as thorium, mixed oxide, and recovered uranium from light water reactors.

The design's high neutron efficiency and on-power refuelling uniquely positions CANDU as the solution for customers exploring the use of alternative fuels in order to extend fuel resources and minimize spent fuel volume.

The company distinguishes itself with two world-class new-build product lines. This offers customers a reactor product best suited to their distinct needs and drivers.

## **ENHANCED TECHNOLOGY**

AECL's Enhanced CANDU 6 (EC6) has Generation III features and uses natural uranium. It is an enhanced version of the highly successful CANDU 6, the well-proven workhorse of the CANDU fleet.

The EC6 is the world's only Generation III mid-sized reactor with a proven pedigree available commercially worldwide and optimally-sized for markets with a smaller grid. It is being developed to offer customers the option of using alternative fuels such as thorium or recovered uranium from light water reactors.

The EC6 maintains all of the proven features of the CANDU 6 reactor while delivering a higher plant output and increased safety and security attributes. The EC6 also builds on the CANDU 6 reactor's demonstrated track record for world-class performance.

The EC6 product definition phase has been completed and the program is being accelerated to deliver licensing and product-readiness milestones to an anticipated new-build schedule. The Phase 1 Pre-Project Design Review by the Canadian Nuclear Safety Commission (CNSC) was completed in March 2010 and Phase 2 was underway as of April 1, 2011.

## **EVOLUTIONARY TECHNOLOGY**

The 1200-MWe Advanced CANDU Reactor (ACR-1000), a Generation III+ reactor, is designed for large grids and markets requiring higher power generation. It builds upon the proven features of the original CANDU design and is focused on meeting market demand for competitive pricing with state-of-the-art safety, operability and maintainability standards. Its design bridges heavy and light water reactor technologies and is competitive, in a head-to-head technical and economic comparison, with other leading global designs.

The neutron efficiency of the heavy water moderator design is combined with the economic advantages of light water cooling. These units are designed to have a 60-year operating life (including life extension) and a lifetime average annual capacity factor of more than 90%.



The ACR-1000 product design is more than 90% complete and is now ready for project-specific licensing. A three-phase Pre-Project Design Review of the ACR-1000 by the CNSC was completed in January 2011. It confirmed compliance and no fundamental barriers to licensing the reactor design in Canada. In addition, the generic Preliminary Safety Analysis Report Supplemental was completed earlier in the year.

## **ADDED VALUE**

Life extension is a core part of AECL's business. AECL's life extension business allows for the safe extension of the CANDU reactor's operating life by up to 30 years. This is an intricate and highly technical operation that involves removing and replacing all fuel channels, calandria tubes and associated parts. AECL is currently the only company in the industry with the full set of skills, knowledge, tooling and experience to successfully deliver complete life extension projects for CANDU nuclear reactors.

AECL's Services business brings additional value, helping utility customers maintain their CANDU reactors at their peak operating capacity and providing support and products for a growing market of non-CANDU customers. With more than 440 active commercial nuclear power reactors in 30 countries, there is opportunity for further and significant growth in the sale of global nuclear products.

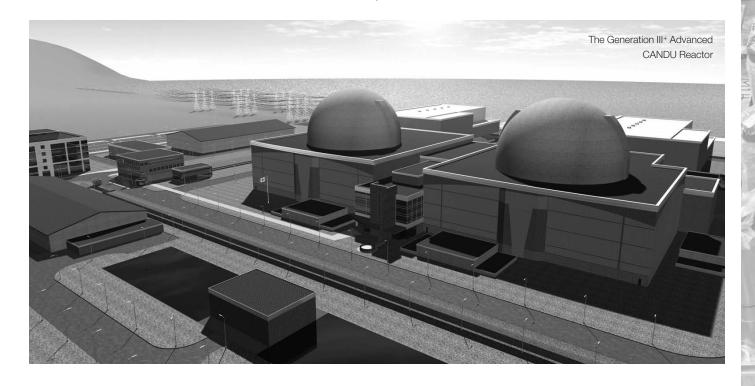
## **CANDU FUEL FLEXIBILITY ADVANTAGE**

CANDU is positioned as the solution for countries and customers seeking extension of fuel resources, reduction in used fuel and fuel independence.



CANDU 6 and EC6 reactors have the unique potential to utilize advanced fuels, such as recovered uranium from conventional reprocessing (including natural uranium equivalent – recovered uranium from light water reactors combined with depleted uranium) and thorium, and may be used to dispose of actinides in the spent fuel of light water reactors, while at the same time producing electricity. This presents an attractive proposition for countries that have light water-reactor-based nuclear programs and access to recovered uranium. The ACR-1000 also has the capacity to burn alternative fuels such as mixed oxide and thorium.

After successfully completing the first-ever commercial demonstration irradiation of natural uranium equivalent in a Qinshan CANDU 6 reactor, AECL has signed a strategic contract with Third Qinshan Nuclear Power Company for full-core implementation of natural uranium equivalent fuel in two CANDU reactors at Qinshan, China. The culmination of years of research and development work, the project is scheduled to take place over the next two years, during which AECL will provide engineering, analysis and technical assistance.



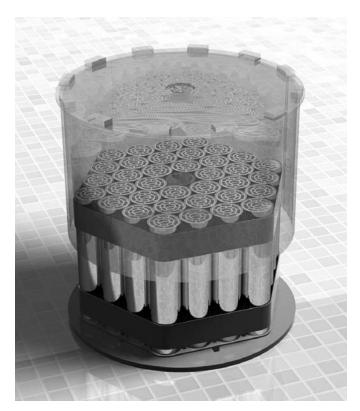
## MARKET OPPORTUNITIES AT A GLANCE

- According to the International Atomic Energy Agency's
  Department of Nuclear Energy, worldwide installed nuclear
  generation capacity is expected to increase from approximately
  370 GWe to upward of 691 GWe by 2030. Market experts
  forecast that new-build nuclear revenues from this growth could
  exceed a trillion dollars. With successful international
  experience constructing CANDU reactors, AECL is poised to
  increase its market share of that business.
- New-build market opportunities include Canada specifically in Ontario, where the province has reaffirmed its intent to build two reactors at Darlington – and China, India, Romania and Argentina, where there is an existing installed base of CANDU technology and a track record of strong technology performance. Other market opportunities include Ukraine, Poland and Jordan.
- With CANDU reactors around the world approaching the end of their initial pressure tube design life, a large market for reactor life extensions is expected – some 17 possible projects to 2028, with revenue up to \$3 billion. In Ontario alone, the province intends to refurbish 10 existing CANDU reactors over the next 10 to 15 years, as noted in its updated 20-year Long Term Energy Plan.
- by maturing CANDU reactors and anticipated life extension and new-build projects. There is also significant market potential for Services' sales of new products and services for CANDU and non-CANDU customers. With more than 440 active commercial

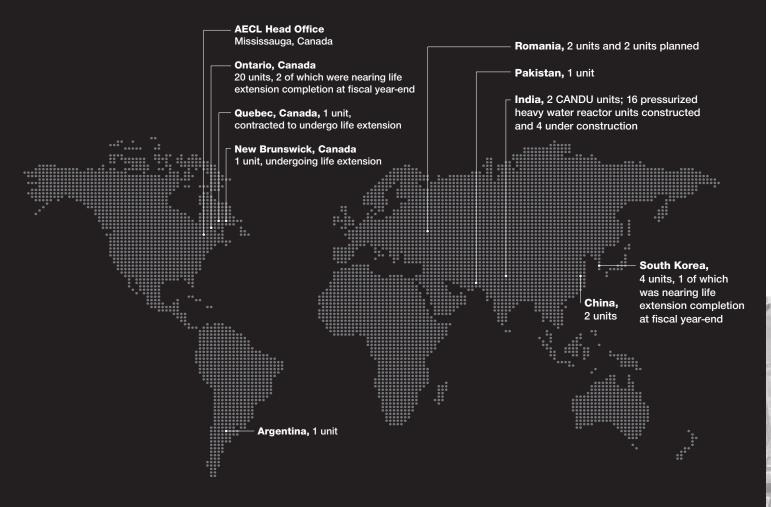




nuclear power reactors worldwide, growth can be achieved in Services' sales of global nuclear products, such as emergency core cooling strainers, reactor coolant pump seals and passive autocatalytic recombiners. These have been successfully introduced in recent years in non-CANDU markets in Europe, Asia and the United States. Services' opportunities are also expected to increase based on an enhanced industry focus on safety and maintenance.



## **GLOBAL NEW-BUILD PROFILE**



34 CANDU reactors, along with 20 other heavy water reactors based on the CANDU design, have been built or are under construction on four continents.

CANDU's global success is attributed to seven international reactor projects, all built to meet or exceed customer schedule and budget expectations. The CANDU 6 reactor is one of the top-performing reactor designs in the world, with an 87.9% lifetime capacity factor.

## 2010-2011 OVERVIEW

## **HEALTH AND SAFETY**

AECL's number one priority is to protect the health and safety of its employees, the public and the environment. In doing so, AECL reinforces a performance culture that provides a safe workplace for employees and meets the expectations and requirements of its key stakeholders, including the CNSC, customers and the public.

- AECL's recordable lost-time injury (RLTI) rate last year
   (1 event = 0.07 frequency) was comparable to that of 2009–
   2010, during which a 50% decrease in the frequency of RLTIs
   occurred. Reporting processes were enhanced with the rollout
   of Occupational Health & Safety scorecards early in the year.
- AECL's Wolsong Retube Project, which had completed all major work activities at fiscal year-end, experienced an excellent safety record with no lost-time injuries to AECL staff over the duration of the project. Similarly, the Bruce Retube Project, which involves two reactor units, achieved a major milestone in March 2011 when workers surpassed 3.7 million man-hours worked without a lost-time injury since October 2008. Both milestones are impressive achievements, given the complexity, physical demands and first-of-a-kind nature of this work.
- The Government of Canada-funded Isotope Supply Reliability
   Program (ISRP) was established in 2008–2009 to strengthen the
   people, processes and facilities required to facilitate the licence
   renewal to 2016 of the Chalk River Laboratories, including the
   National Research Universal (NRU) reactor. The licence expires
   in October 2011. AECL continues to address ISRP activities to
   ensure a safe, reliable supply of medical isotopes.

## **PROJECTS**

AECL's Commercial Operations is committed to securing a major role in the global nuclear renaissance and financial self-sufficiency through leading-edge technology, services and engineering support to nuclear utilities around the world. This includes delivering the EC6 and ACR-1000 reactors as new-build product lines; undertaking life extensions on CANDU reactors approaching their mid-life; and providing services to support the CANDU fleet. This is accomplished at a high level of quality and compliance with regulatory requirements.

 Commercial Operations completed all of the major work activities associated with the Wolsong Retube Project in South Korea and the Bruce Retube Project, Bruce A, Unit 2 in Ontario, both prior to fiscal year-end. Major retube work activities associated with Bruce A, Unit 1, were completed in early May 2011. The Point Lepreau life extension project encountered and addressed major technical hurdles that

- impacted both the schedule and the cost of the project. At fiscal year-end, work was progressing at or ahead of its latest project schedule, with completion expected in May 2012.
- Significant progress was made toward ACR-1000 and EC6 licensing in Canada. In January 2011, the ACR-1000 became the first advanced nuclear power reactor to have completed all three phases of a Pre-Project Design Review by the CNSC. The CNSC determined that there are no fundamental barriers to licensing the ACR-1000 in Canada. A Phase 1 Pre-Project Design Review was completed in March 2010 for the EC6 and Phase 2 was underway as of April 1, 2011.

## **BUSINESS AND OPERATIONS**

AECL's Commercial Operations and Nuclear Laboratories focus on providing nuclear technology-related products and services to utilities, as well as managing nuclear-related facilities and technology capability to support commercial and Government of Canada requirements. These activities include nuclear-related research and development, products and services, and waste management and decommissioning.

- The Government of Canada continued its restructuring process for AECL's Commercial Operations. At fiscal yearend, no decision had been announced on the sale of the Commercial Operations or the future management structure for the Nuclear Laboratories.
- The NRU reactor was safely repaired and returned to service in August 2010 following a 15-month shutdown due to a heavy water leak. The repair involved highly technical processes and first-of-a-kind solutions by AECL employees. Since its return to service, the NRU has continued to provide research and development capabilities to the Nuclear Laboratories and its partners while producing a reliable supply of medical isotopes to support world demand.
- Construction of the second of six Shielded Modular Above-Ground Storage buildings at Chalk River Laboratories was completed in March 2011. Part of an infrastructure renewal program, the buildings are used to safely store low-level radioactive waste, in keeping with safety, regulatory and operational requirements.

## **MARKETING & SALES**

AECL's marketing and business development efforts are focused on domestic and international marketing of CANDU new-build projects, life extension projects and delivery of CANDU and non-CANDU products and services. With the goal of improving competitiveness and meeting emerging market needs, AECL

explores opportunities for strategic partnerships which complement existing areas of expertise.

- SC EnergoNuclear SA, the project company for Cernavoda
   Units 3 and 4 in Romania, contracted AECL to define the
   project scope for completing the reactors. The contract
   represents a major step toward the launch of a full project.
   CANDU is considered the preferred technology to complete
   the project.
- Negotiations on the Embalse nuclear reactor life extension contracts in Argentina progressed. In March 2011, AECL signed contracts with NASA to commence early project work and to establish the process for negotiating further major contracts for the project.
- AECL remains an interested party in the development of Ontario's fleet of reactors, as well as to life extension opportunities in Canada.
- AECL continued to build relationships with nuclear counter parts, including Nuclear Power Corporation of India Limited
  (NPCIL). Following the signing of the Canada and India nuclear
  cooperation agreement, AECL engaged NPCIL and major
  Indian suppliers to discuss potential opportunities and
  collaboration in the areas of services potential, supply chain
  synergies and new build.
- A joint technical and economic evaluation for the application of CANDU technology in Ukraine by AECL and Ukrainian nuclear utility Energoatom was completed in May 2010. Since then, Ukraine has confirmed that CANDU can be applied in Ukraine and steps are being taken to include CANDU in Ukraine's energy plan.
- AECL and Third Qinshan Nuclear Power Company signed a
  contract in March 2011 to implement full-core natural uranium
  equivalent fuel (NUE: recovered uranium from light water
  reactors combined with depleted uranium) in two CANDU
  reactors at Qinshan, China. The project follows the successful
  completion last year of the first-ever commercial demonstration
  irradiation of NUE in a Qinshan CANDU 6 reactor.
- AECL continued its collaboration with Chinese experts and partners to determine an appropriate fuel for use in a thorium demonstration irradiation program in a Qinshan CANDU reactor. Preliminary studies into the thorium-capable CANDU reactor were also undertaken during the year.

## **FINANCIAL**

As a Crown corporation, AECL generates commercial revenue and receives Government of Canada funding to support its operations. Commercial activities, which include major nuclear projects and related services, are managed based on profitability and growth, while Government of Canada-funded activities are managed based on meeting planned costs and deliverables.

AECL is required to submit a Corporate Plan annually to the Government of Canada.

- AECL's financial performance last year was driven mainly by the need to: complete life extension projects safely and to a high level of quality; modernize Chalk River Laboratories operations to address regulatory, health, safety and environmental needs; design and develop world-class products; and safely return the NRU to service. AECL recognized Government of Canada funding of \$1,145 million in support of these and other efforts.
- AECL expended \$126 million toward fulfilling decommissioning and waste management obligations under the Government of Canada-funded Nuclear Legacy Liabilities Program for the Government of Canada. This included ongoing decommissioning and waste management activities at Chalk River, Whiteshell and the Underground Research Laboratories, as well as the development of enabling facilities.
- Consolidated commercial revenues of \$508 million were 8% higher than in the previous year. This increase was largely due to increased activity on Commercial Operations' life extension projects and the restoration of isotope sales upon the NRU reactor's return to service following its extended shutdown.
- Increased costs on several life extension projects contributed to the need for Government of Canada funding support above the base appropriation amount. Much of the impact of these higher costs on net income in the current year was covered by provisions taken in previous years.
- Development of the EC6 progressed in line with expectations.
   \$20 million was spent on the EC6 program during the year.
- AECL recorded an impairment charge of \$205 million related to capitalized costs of the ACR-1000 development.
   The impairment was due to uncertainty in realizing cash flows from the Corporation's investment in the development of the ACR-1000. The design is being maintained in a customer-ready state.





GLENNA CARR
Chair of the Board

## **BUILDING FOR OUR FUTURE**

In 2010–2011, the AECL Board of Directors' overall objective was to provide sound corporate governance to ensure that AECL was well-positioned to undergo an expected restructuring and to lay the groundwork for its two distinct operating entities to flourish, on all fronts, thereafter.

The enormity of this task required a significant level of Board engagement with our Shareholder, the Government of Canada, the regulator, Management, customers, partners and stakeholders during the year.

It also required the engagement of three Special Advisors to the Board who bring to the fore additional skills and expertise to enhance our ability to govern AECL during this period of significant change and transition.

At fiscal year-end, the restructuring process, set in motion by the Government of Canada in 2009–2010, was ongoing. The Board, through its Special Advisory Committee, provided significant due diligence to, and perspectives on, the restructuring initiative to ensure that it benefits our stakeholders in the long term and proceeds with an appropriate level of diligence.

With the expected sale of the Commercial Operations and in anticipation of the Nuclear Laboratories becoming a stand-alone operation as a federal science and technology organization, the Board reviewed the transitions needed to evolve the governance structure for each of the two entities and to address legislative requirements and public-policy mandates of the Government of Canada.

The Science, Technology & Nuclear Oversight Committee worked closely with the Nuclear Laboratories' leadership team to explore how best to renew the organization's agenda. Extraordinary efforts were taken – and are ongoing – to ensure the current operations are effective and support strategies to make the CANDU nuclear industry and medical isotope production resilient and responsive in the future.

The appointment during the year of a new leader for the Nuclear Laboratories has brought additional confidence that this transition will be made as effectively as possible and that the post-restructuring Nuclear Laboratories will bring continued value to the Government of Canada and Canadians.

A focus by the Board was also placed on ensuring all appropriate measures were being taken to safely return to service the NRU reactor after a 15-month extended shutdown – achieved successfully in August 2010. All staff members and suppliers involved are commended for their exemplary work and commitment to this complex project, and to the frequent and transparent communications with the public.

Last year, the Board also oversaw and advised on the renewal and restoration of the Chalk River Laboratories site and its people; including additional NRU enhancements in support of the Chalk River Laboratories re-licensing in October 2011 (under the Isotope Supply Reliability Program); and the completion of infrastructure renewal initiatives, including the official opening of the Brockhouse administration building as part of Project New Lease.

In support of the Commercial Operations' objectives, the Board was an active advocate and monitor of Commercial Operations' delivery on its commitments to customers – particularly on its life extension projects; appropriate response to current market demands for CANDU technology development; acquiring new business; and minimizing potential risks posed in undertaking new business.

In addition, Board members participated in a series of outreach efforts to strengthen relationships with customers and stakeholders, visiting various project sites, and helping to build relationships with prospective customers, partners, suppliers, business leaders, and government decision-makers.

With respect to human resources, the Board spent significant time overseeing and advising on all aspects of governance, corporate policies and strategies related to employees in both Commercial Operations and Nuclear Laboratories, including human resource management and retention, employee relations, health and safety.

All of these initiatives required significant focus and time on the part of the Directors, of Management working with the Board, and of the Chair. Our Board and its Committees met regularly and frequently, with 12 Board and 41 Committee meetings held in 2010–2011.

I would like to commend my Director colleagues for their extraordinary efforts, high level of engagement, and their commitment to ensuring that our priorities have been, and continue to be, appropriately addressed.

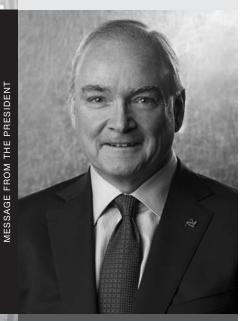
I would also like to thank the Government of Canada for its support, and to express my appreciation to AECL's management team and employees who are adapting to change for long-term success and continue to stand in solidarity with our corporation during this period of transition.

Given all of our combined efforts, we are that much closer to achieving our goals.

Glenna Carr Chair of the Board

Glewa Carr





HUGH MacDIARMID

President and Chief Executive Officer

## THE CAPACITY TO ADAPT

It is well understood by biologists that species must adapt in order to survive. It is no different for corporations such as AECL.

We too must change to meet the demands of the times, not only to survive but also to thrive in the long term. Last year, we faced our challenges head-on and undertook a series of initiatives that will enhance our ability to adapt, grow and prosper well into the future.

In anticipation of AECL's restructuring by the Government of Canada, AECL migrated to a new organizational model of "sister" entities: Commercial Operations, which is expected to be sold to the private sector, and Nuclear Laboratories, which is expected to be retained by the Government of Canada.

For each entity, we took steps to improve business processes and organizational capabilities, to preserve critical human resources, and to ensure a smooth transition during the restructuring period.

To maintain our market readiness, we continued to invest in new products, shifting our focus to development of the EC6 reactor design while preserving the ACR-1000 design, which is ready for prospective customers.

Late in the fiscal year, we responded swiftly to the Fukushima, Japan nuclear incident: identifying lessons-learned from the event; reviewing our CANDU safety systems; and applying relevant changes to meet the expectations of regulators, host countries and the public.

#### **Our Progress**

In 2010–2011, both Nuclear Laboratories and Commercial Operations achieved many significant milestones that will bring long-term value to the Government of Canada and anticipated future shareholder, respectively.

#### **Nuclear Laboratories**

Using first-of-a-kind technologies and processes, Nuclear Laboratories staff overcame one of AECL's most daunting challenges, safely returning the NRU reactor to service following a 15-month shutdown due to a reactor vessel leak. In August 2010, the reactor was back to providing a reliable supply of medical isotopes to support global healthcare.

Enabled by the NRU reactor, the Research and Development group provided support for Canada's nuclear sector and the scientific and academic communities. In preparation for the Chalk River Laboratories' licence renewal in October 2011, which includes the NRU reactor, Nuclear Laboratories continued delivering on its Isotope Supply Reliability Program objectives.

Significant milestones were achieved under the infrastructure renewal program Project New Lease, including completion of the second of six Shielded Modular Above-Ground Storage buildings at Chalk River Laboratories.

Solutions continued to be advanced for the management of legacy, historic and ongoing operational wastes. This included leading the Port Hope Area Initiative Transition Phase and progressing Whiteshell Laboratories decommissioning activities, including the Underground

Research Laboratory closure. Fiscal year-end saw the completion of the first five years of the Nuclear Legacy Liabilities Program. Preparations are underway for the next phase of work.

To ensure a strong organization that can guide Nuclear Laboratories into the future, new leadership for its management team was introduced and a refined vision and management construct were adopted.

#### **Commercial Operations**

AECL invested significant resources into building Commercial Operations' New Build, Life Extension and Services businesses, resulting in a series of positive outcomes in 2010–2011 that will support future growth.

Of particular note, Commercial Operations completed all of the major work activities associated with the Wolsong Retube Project in South Korea and the Bruce Retube Project, Bruce A, Unit 2 in Ontario, both prior to fiscal year-end. Major retube work activities associated with Bruce A, Unit 1, were completed in early May 2011. The Point Lepreau life extension project encountered and addressed major technical hurdles that impacted both the schedule and the cost of the project. At fiscal year-end, work was progressing at or ahead of its latest project schedule, with completion expected in May 2012.

Commercial Operations' Services business continued supporting the CANDU fleet and non-CANDU customers with high value products and services, while earning a meaningful profit.

Key reactor-design licensing milestones were achieved. The CNSC completed its three-phase Pre-Project Design Review of the ACR-1000, concluding there are no fundamental barriers to licensing the ACR-1000 in Canada. Likewise, Phase 1 of the EC6 Pre-Project Design Review was completed and Phase 2 was underway as of April 1, 2011.

Commercial Operations also advanced its revolutionary fuel cycle program with the signing of a commercial contract with Third Qinshan Nuclear Power Company to implement full-core natural-uranium-equivalent fuel in two CANDU reactors at Qinshan, China.

## **Going Forward**

As AECL plans for success in an expanding nuclear future, we continue to face significant challenges leading into the new fiscal year.

With respect to Nuclear Laboratories, the NRU reactor will require ongoing investment to fulfill its research and isotope production mandates. At fiscal year-end, intense preparation was underway for the reactor's planned one-month outage in May 2011 and future requirements were being identified.

In advance of restructuring, a strategic review of the long-term value proposition and alternative management models for the Nuclear Laboratories was underway. Efforts were also being made to implement rigorous project management systems and processes to control costs and improve adherence to schedules.

And, as part of our commitment to the environment and communities in which we work, steps were being taken to monitor our environmental footprint and enhance our transparency and outreach.

Commercial Operations has coped well with the challenges of the restructuring process, getting the job done with determination and persistence despite the overhang of uncertainty regarding the future.

With the challenges presented by its first-of-a-kind life extension projects, Commercial Operations must continue to demonstrate its ability to learn and improve upon major project execution, retaining the dedication to safety and quality while enhancing focus on cost and schedule.

Despite these challenges, our view of the future is an optimistic one. We believe that a post-Fukushima world will work to improve, not abandon, nuclear as a viable option to meet increasing global electricity demand and that CANDU will have a significant role to play in shaping the nuclear industry.

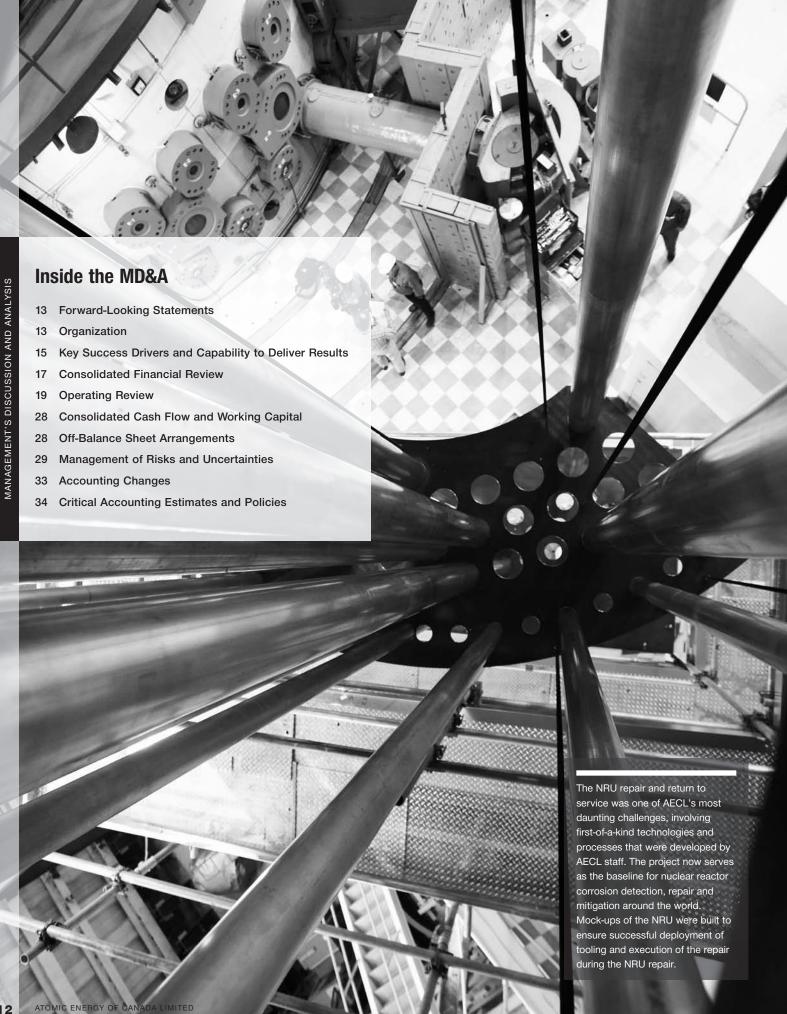
We will survive and we will flourish in the future: with the Nuclear Laboratories as a valued partner in innovation for Canada's nuclear industry, and our Commercial Operations as a successful vendor of nuclear power plants around the world.

I would like to extend my thanks to AECL's management team and employees for their dedicated service and to our Directors, Shareholder, suppliers and partners for their unwavering support during the past year.

Hugh MacDiarmid

President and Chief Executive Officer

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## **MANAGEMENT'S DISCUSSION AND ANALYSIS**

## FORWARD-LOOKING STATEMENTS

This Management's Discussion and Analysis (MD&A) has been reviewed by AECL's Audit Committee and approved by AECL's Board of Directors. It provides comments on the performance of the Corporation for the year ended March 31, 2011 and should be read in conjunction with the consolidated financial statements and accompanying notes included in this Annual Report.

In November 2007, AECL's Shareholder announced that it would initiate a review of the Corporation to determine whether AECL's structure as a Crown corporation best equips it, its employees and ultimately the Canadian nuclear industry, to participate fully in the expanding global nuclear market. The review was conducted by the AECL Review Team at Natural Resources Canada, in consultation with the Department of Finance and the Department of Justice, and with the collaboration of AECL and external financial advisors.

In May 2009, the Shareholder announced its decision to move forward with a restructuring of AECL, noting the distinct mandates, resource and management needs of Commercial Operations and Nuclear Laboratories. Financial advisors were engaged to develop a restructuring plan and to provide external financial advice.

In December 2009, the Shareholder invited investors to submit proposals for AECL's Commercial Operations, in order to restructure the Corporation. Proposals have been assessed based on how well they meet set objectives, including: ensuring that Canadians have nuclear as a safe, reliable, economic and clean energy option; controlling costs to the Government of Canada while maximizing the return on the taxpayers' investment; and positioning the nuclear industry in Canada to seize domestic and global opportunities. AECL management is supporting the process. Ultimate sale of all or a portion of the Commercial Operations is at the discretion of the Shareholder.

Prior to the close of the fiscal year, the Corporation submitted its 2010–2011 to 2014–2015 Corporate Plan to the Government of Canada. At time of publication, the Corporate Plan was awaiting Governor in Council approval. The Corporate Plan and this Management's Discussion and Analysis have been prepared without making any assumptions as to the outcomes of the restructuring. As such, they do not contemplate any significant changes to AECL's existing activities. Should Government of Canada decisions with respect to AECL's restructuring affect the Corporation's structure, mandate or future financial situation, there may be a need to revisit the strategies outlined in that Plan and the related financial statement presentation.

AECL's Nuclear Laboratories, which includes the Chalk River Laboratories, is not included in the sale process. The Shareholder has indicated it will make a decision at a later date on the best management structure for that entity.

This MD&A contains forward-looking statements with respect to AECL based on assumptions that management considers reasonable as at June 7, 2011, when the company's Board of Directors approved this document. These forward-looking statements, by their nature, necessarily involve risks and uncertainties that could cause future results to differ materially from current expectations. We caution the reader that the assumptions regarding future events, many of which are difficult to predict, may ultimately require revision.

## **ORGANIZATION**

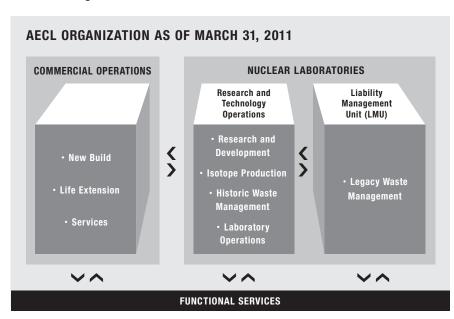
AECL is an agent Crown corporation reporting to Parliament through the Minister of Natural Resources Canada.

Management organizes its business activities and evaluates its financial results through two distinct business entities: Commercial Operations and Nuclear Laboratories. Each entity is responsible for achieving its business goals as established in the Corporate Plan.

The Functional Services Group (previously known as Corporate Services) has traditionally supported these two entities.

#### **COMMERCIAL OPERATIONS**

Commercial Operations, based in Mississauga, Ontario, employs approximately 1,800 people and operates on a commercial basis providing nuclear products and related services. It generates value for nuclear utilities worldwide through its three core business lines:



New Build: Activities related to the development and commercialization of CANDU reactors as leading nuclear technologies and project management of new-build contracts in Canada and around the world.

Life Extension: Reactor life extensions, including the replacement of major reactor components, allow utilities to extend the life of CANDU reactors for up to 30 years as opposed to decommissioning existing reactors and building replacements.

Services: The Services business provides a full range of engineering and technical products and services, including engineering, production, component supply, inspection and field services. The business supports operating CANDU plants by extending their lives through upgrades and improving customer productivity and competitiveness. The Services business also offers parts and services, including global nuclear products, to a growing market of non-CANDU customers.

These business lines are supported by the groups dedicated to developing Commercial Operations' products, and selling and delivering them to customers: Product Development, Marketing & Business Development, and Operations Support.

- Product Development: Focuses on the development and commercialization of CANDU reactors, as well as providing nuclear-related goods and services to utilities.
- · Marketing & Business Development: Sells CANDU technology and services worldwide.
- Operations Support: Includes engineering and technical delivery, project management and engineering services, and quality assurance.
   Delivers CANDU technology and services to commercial customers.

These areas have a high degree of inter-relationship and cross-dependency and are supported by the following functional services groups: Finance and Information Technology, which also manages Supply Chain and Facilities; Strategic Contracting; Human Resources; Legal/Compliance; and External Relations & Communications.

#### **NUCLEAR LABORATORIES**

Nuclear Laboratories employs more than 3,000 people and is principally centred at Chalk River Laboratories, Canada's largest federal laboratory. Almost 400 of those staff members are employed in other locations, including the Whiteshell Laboratories in Manitoba.

Nuclear Laboratories' value is expressed in national terms, which is characteristic of national laboratories worldwide. An ongoing investment of federal funds results in a healthy nuclear sector in Canada that contributes to jobs, economic activity and quality of life for the country.

Activities within Nuclear Laboratories are aligned with the federal Science & Technology strategy, *Mobilizing Science and Technology to Canada's Advantage*. Through alignment with this strategy, Nuclear Laboratories makes a significant contribution to three of the Govern - ment of Canada's Outcome Areas: an innovative and knowledge-based economy, a clean and healthy environment, and healthy Canadians.

Nuclear Laboratories maintains facilities and research and development capabilities that are leveraged to benefit Canada and the nuclear industry. These benefits include isotope production capabilities; research themes that are focused on maintaining and improving safety; and nuclear-related products and services. Through innovation and engineering services, Nuclear Laboratories supports the safe and efficient operation of CANDU nuclear generating stations and helps customers meet their regulatory requirements.

Nuclear Laboratories is largely supported by the Government of Canada. It also generates revenue from the sale of products and/or services, including isotopes, research contracts for the CANDU Owners Group, and commercial waste management services for hospitals and universities. This additional activity contributed \$50 million to revenues during the year.

Nuclear Laboratories also supports Commercial Operations in performing research, technical support and testing in the development of new commercial products.

The organization reports its financial performance under Research and Technology Operations and the Liability Management Unit.

### **Research and Technology Operations**

Research and Technology Operations manages the nuclear research and development capability and related facilities. The organization has three main missions: the production of medical isotopes from the NRU reactor; nuclear research and technology development; and the management of nuclear wastes for which the federal government has responsibility. Expenditures are managed to specific targets based on committed funding levels and commercial revenues. Funding is largely derived from federal appropriations and is used to support operations and infrastructure initiatives.

The organization undertakes commercial activities that include the production of medical isotopes, CANDU technology and research and development services, as well as waste management and decommissioning services. It also provides essential technology, nuclear research and development services in support of Commercial Operations.

In addition, Research and Technology Operations manages historic waste and decommissioning liabilities. The Low-Level Radioactive Waste Management Office was established in 1982 to carry out federal low-level radioactive waste management responsibilities in Canada. The organization's main activities are to resolve historic waste problems and address general public information needs with respect to low-level radioactive wastes. On behalf of the Government of Canada, the organization cleans up radioactive-contaminated sites across Canada for which the original owner is no longer known and the current owner cannot reasonably be held responsible. Under the historic waste program, the Port Hope Area Initiative Management Office was established to plan and implement a long-term solution for historic waste in the Port Hope area.

The above activities utilize nuclear and non-nuclear facilities at Chalk River and Whiteshell.

### **Liability Management Unit**

The Liability Management Unit accounts for two streams of waste and decommissioning liabilities on behalf of the Government of Canada and AECL: nuclear legacy liabilities and waste from ongoing operations. This is managed in accordance with CNSC regulations and in the best interests of Canadians. Research and Technology Operations and private sector contractors perform the waste and decommissioning work.

#### **Nuclear Legacy Liabilities**

The Government of Canada introduced the Nuclear Legacy Liabilities Program, a long-term strategy to reduce and eliminate federal nuclear liabilities on AECL sites generated prior to March 31, 2006. These liabilities include obligations associated with AECL's existing infrastructure, those stemming from activities before AECL was incorporated in 1952, third-party radioactive waste from across Canada, and research and development waste in support of Canada's nuclear program.

The program is governed through a Memorandum of Understanding between AECL and Natural Resources Canada. Under this agreement, AECL is responsible for carrying out the work in a safe, compliant and cost-effective manner.

The Government of Canada approved \$513 million for activities to be implemented over an initial five-year start-up phase, ending in March 2011. During 2010–2011, funding for the next three-year phase of the program was secured.

#### Waste from Ongoing Operations

The Liability Management Unit accounts for ongoing operational waste from AECL's operations in addition to commercial radioactive waste received for long-term management from universities, medical facilities, government and industry from across Canada.

## **KEY SUCCESS DRIVERS AND CAPABILITY TO DELIVER RESULTS**

#### **SAFETY**

By placing safety first, AECL reinforces a performance culture that provides a safe workplace for employees and meets the expectations and requirements of its key stakeholders, including governments, the CNSC, customers and the public.

AECL's recordable lost-time injury (RLTI) rate last year was comparable to that of 2009–2010, during which a 50% decrease in the frequency of RLTIs occurred.

The program benefitted from a consistent Occupational Health & Safety (OHS) focus; efforts made by the operations throughout the company; increased presence of OHS staff in the field; increased timely communications with employees to heighten safety awareness; strong working relationships with other support and oversight groups across the organization; the execution of focused OHS plans based on risk; and the rollout of improved OHS metrics through scorecards and audits.

An important part of AECL's safety-first priority has been the commitment to apply best practices and achieve industry leadership in the company's safety programs. To that end, AECL's Health and Safety policy was updated, notably with the addition of a specific radiation protection component.

#### **CUSTOMER COMMITMENT**

AECL recognizes that customer satisfaction is crucial to its ongoing success and is continuing its efforts to further evolve AECL into a customer-driven technology company. Customer feedback mechanisms continue to provide AECL with valuable insight into meeting and exceeding customers' expectations. AECL has been working cooperatively with customers to provide high-quality products and services in a timely and cost-effective manner.

AECL's commitment to its customers was demonstrated throughout the year. For example, staff from Nuclear Laboratories and Commercial Operations delivered a record number of research and development reports for the CANDU Owners Group last year, exceeding the customer's expectation. Additionally, AECL resumed supplying significant quantities of medical isotopes to the global market following the NRU reactor's return to service in August 2010.

#### RESEARCH AND DEVELOPMENT

The success of the Canadian nuclear program is founded on its broad research and development capability. AECL generates substantial intellectual capital and maintains a significant research and development infrastructure through its nuclear laboratories. In 2010–2011, the focus of Research and Development was largely on the application of science and technology to enhance the safety and performance of the existing CANDU fleet. Research and Development also worked to develop new technologies and advance the next generation of reactors and fuels with the goal of exceeding international standards.

AECL provides support to meet Canada's international nuclear policy commitments, including participation in the International Atomic Energy Agency and the Generation IV International Forum. AECL's research and development capability contributes to the advancement of science in Canada through its support of the academic community – more than 200 academic researchers use the unique facilities and more than 20 Canadian universities collaborate on research projects.

These initiatives drive innovation and technology advancement and contribute to the training of highly qualified personnel for the future, in both nuclear and non-nuclear sectors. This reflects an evolving focus on research and development in the Canadian nuclear community, where leadership and integration of expertise from universities and other organizations is central to the development of nuclear technology for the benefit of all Canadians.

Significant achievements in 2010–2011 included the development and demonstration of potentially breakthrough technologies to detect and mitigate the threat of nuclear proliferation.

These capabilities support a knowledge-based, entrepreneurial Canadian economy.

### **PROJECT MANAGEMENT SKILLS**

AECL's global success is attributed to seven international new-build projects over the last 15 years, all built to meet or exceed customer schedule and budget expectations. In 2010–2011, progress continued to be made on AECL's major reactor life extension projects, despite challenges related to their technical complexity. Lessons-learned have contributed in part to schedule efficiencies on ongoing projects. Future projects are also expected to benefit from this knowledge. With ongoing life extension projects and expected new-build projects in the near future, AECL continued to enhance its project management processes, tools and practices to ensure the successful completion of all projects.

## **SUPPLY CHAIN**

AECL's ability to meet its commercial commitments is dependent upon maintaining a strong supply chain. AECL is supported by more than 150 Canadian member-companies of the Organization of CANDU Industries, and continues to develop essential alliances with key international suppliers to promote CANDU technology. To encourage growth in the supply chain, AECL also supports existing suppliers in expanding their service provision and new suppliers in attaining nuclear qualifications. The company has strengthened its supply chain through its life extension projects. Over the past year, the organization has continued to enhance its ability to ensure supply is available globally and locally in anticipation of new-build projects.

### **GOVERNMENT OF CANADA SUPPORT**

Government of Canada funding supported AECL's Nuclear Laboratories and Commercial Operations in 2010–2011. The funding helps Nuclear Laboratories to fulfill its roles in alignment with federal policies on safety and security, healthy Canadians, a clean and healthy environment and an innovative, knowledge-based economy. It also helped Commercial Operations to position itself for long-term commercial success. Government of Canada funding contributed to:

- Operational requirements related to advancing commercial commitments.
- The nuclear research and development program, Chalk River Laboratories infrastructure renewal (Project New Lease) and ongoing operations (base operations and Isotope Supply Reliability Program).

- The Nuclear Legacy Liabilities Program. AECL worked with Natural Resources Canada on the development of the next phase of this program beyond March 2011 the final year of the first phase of the program. Funding for the next three-year phase of the program was secured prior to fiscal year-end.
- The design and development of commercial CANDU reactor products.

AECL receives Government of Canada support for its activities through the approval of AECL's Corporate Plan by the Governor in Council. At fiscal year-end, the 2010–2011 Corporate Plan was awaiting approval by the Government of Canada. However, during the year, Government of Canada funding in the amount of \$815 million was received to support AECL's activities. Interim funding was made available by the Government of Canada for use early in 2011–2012.

#### **SKILLED HUMAN RESOURCES**

AECL's highly educated and skilled workforce is the primary resource for ensuring its current and future success. Changing workforce demographics and global talent trends influence the development of AECL strategies on recruiting, engaging, deploying and retaining talent. The advancement of skills and leadership to help enhance company opportunities is achieved through a wide range of learning events and ongoing programs.

In 2010–2011, AECL's full-time staff decreased by 3% to 4,830 employees (4,957 in 2009–2010), including more than 3,170 highly-skilled engineers, scientists, technical professionals and operations personnel in a wide range of technical disciplines.

## **CONSOLIDATED FINANCIAL REVIEW**

KEY FINANCIAL INFORMATION					
(\$ millions)	<b>2010–11</b> 20		20	2009–10	
Revenue					
Commercial Operations	\$	458	\$	439	
Nuclear Laboratories		50		33	
Total revenue	\$	508	\$	472	
Funding					
Operating	\$	901	\$	810	
Capital		17		126	
Recognition of Deferred Development Funding		205		_	
Cost recovery from third parties and other		22		12	
Total funding	\$	1,145	\$	948	
Net income (loss) by business entity					
Commercial Operations after Parliamentary appropriations	\$	213	\$	(104)	
Research and Technology Operations		(10)		(5)	
Liability Management Unit		(263)		29	
Net loss	\$	(60)	\$	(80)	

#### **REVENUE**

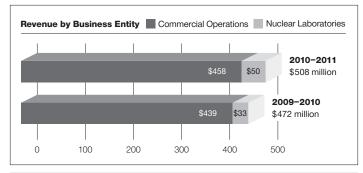
Consolidated commercial revenues increased 8% from the previous year to \$508 million in 2010–2011. This increase resulted from a \$19 million and \$17 million increase in revenues in the Commercial Operations and Nuclear Laboratories, respectively. The Commercial Operations revenue increase of 4% to \$458 million was primarily due to further progress made on the life extension projects.

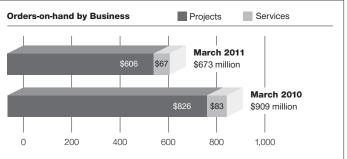
Nuclear Laboratories commercial revenue increased by 52% to \$50 million, reflecting higher isotope sales as a result of the return to service of the NRU reactor in August 2010 following a 15-month shutdown.

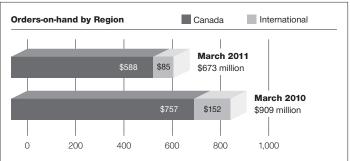


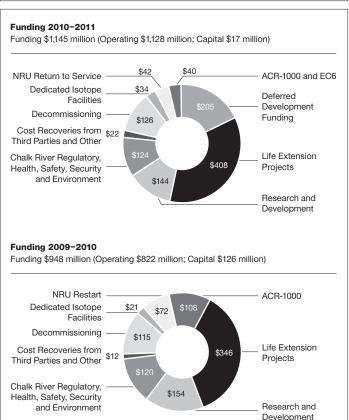
Total funding recognized in 2010–2011 for operating and capital activities was \$1,145 million (2009–2010: \$948 million). This included:

- \$408 million to support Commercial Operations life extension projects and meet contractual obligations.
- \$144 million for research and development, mainly supporting ongoing Chalk River site operations.
- \$124 million to address regulatory, health, safety and environmental needs. The funding supported the Project New Lease (infrastructure renewal) and Isotope Supply Reliability Program (NRU operations and licence renewal) initiatives, at AECL's Chalk River site. The capital portion of this funding totalled \$17 million.
- Decommissioning and waste management activities recognized increased funding of \$126 million from \$115 million in 2009– 2010. Funding is provided through Natural Resources Canada and is based on AECL's expenditures.
- \$40 million toward product development, including \$20 million invested in the EC6 program. The balance of \$20 million related to ACR-1000 development.
- \$205 million in deferred development funding for the ACR-1000.
   \$175 million was received in the previous two fiscal years but recognized as income in 2010–2011 due to the impairment charge against ACR-1000 development costs. The remaining \$30 million was received in 2010–2011.
- Funding of \$34 million for the Dedicated Isotope Facilities: the MAPLE 1 and 2 reactors, which are in an extended shutdown state; the New Processing Facility; and the Calcined Waste Storage Canisters. Funding was used to meet contractual obligations and defend contractual rights.
- Specific funding of \$42 million was provided to support NRU repair and return-to-service activities. The reactor resumed isotope production in August 2010.
- Cost recoveries and other funding totalled \$22 million. This
  includes amortization of deferred capital funding related to
  Government of Canada-funded infrastructure, mainly at
  Chalk River. In addition, cost recoveries include support for
  activities under the Low-Level Radioactive Waste Management
  Office, and Port Hope Area Initiative Management Office,
  reported under Nuclear Laboratories.









#### IMPAIRMENT OF ASSETS

In 2010–2011, AECL recognized an impairment expense of \$205 million in Commercial Operations relating to ACR-1000 development costs. The impairment was due to uncertainty in realizing cash flows from the Corporation's investment in the development of the ACR-1000. With the impairment charge, corresponding deferred development funding on AECL's balance sheet was recognized in income in accordance with accounting guidelines. As a result, net income was not impacted by the charge.

AECL is now focusing its efforts on the development of the EC6 in response to market demands. In 2010–11, \$20 million was spent on developing this product.

#### **NET INCOME/LOSS BY BUSINESS ENTITY**

AECL reported a net loss of \$60 million in 2010–2011, compared to a net loss of \$80 million in 2009–2010. The net loss was driven by costs associated with the life extension projects, in addition to a significant increase in the decommissioning and waste management provision.

Commercial Operations reported net income of \$213 million (2009–2010: \$104 million net loss) after Parliamentary appropriations. The increase in earnings was primarily driven by lower cost of sales recorded in 2010–2011 as a portion of the costs spent in the year were charged to income in 2009–2010 and held on the balance sheet as a contract loss provision. Also contributing to the increase from 2009–2010 were increased revenue and funding for the life extension projects.

Research and Technology Operations reported a net loss of \$10 million (2009–2010: \$5 million). This net loss was predominantly a function of changes to working capital. All Parliamentary appropriations for operating activities are included in income. A slight drop in working capital resulting from the timing of payments led to a minor reduction in appropriations for the year. The Liability Management Unit reported a net loss of \$263 million in 2010–2011 (2009–2010: \$29 million net income). This decrease in net income related to a non-cash adjustment to the decommissioning and waste management provision to reflect revised future expenditure estimates over the balance of the long-term decommissioning plan period.

## **OPERATING REVIEW**

## **COMMERCIAL OPERATIONS**

#### **Business Lines**

- · New build, including reactor technology development and commercialization
- · Reactor life extension
- · Services

#### 2010-2011 Goals

#### **New Build**

- · Refine product development and market strategy based on unique attributes of ACR-1000 and EC6.
- · Market products successfully at home and abroad.

#### Life Extension

- · Complete two life extension projects.
- Deliver profit from one project and subsequent contracts.

#### Services

Sustain and grow the Services business.

#### **Operational Excellence**

- · Enhance commercial mindset and bottom-line focus.
- · Develop world-class project delivery capabilities.
- · Continue "safety first" culture.

#### 2010-2011 Priorities

- · Progress several life extension projects toward completion.
- · Sign one major commercial contract.
- Generate Services revenue of \$121 million.
- · Meet deliverable and financial performance targets on corporate programs and commercial projects.
- · Sign a joint advanced-fuel development agreement with China.
- · Expand global marketing efforts in India, China, Ukraine and Jordan.
- · Improve on occupational, health and safety metrics.

#### 2010-2011 Measures

#### **New Build**

- · Complete ACR-1000 design, within budget envelope.
- · Sign joint advanced fuel development agreement with China.
- · Expand sales reach in India and China.
- · Establish EC6 as acceptable technology in Ukraine and Jordan.

#### 2010-2011 Significant Achievements and Progress

- Completed all phases of the ACR-1000 Pre-Project Design Review by the CNSC.
- ACR-1000 development is 90% complete and the technology awaits a buyer.
- EC6 development was ramped up in anticipation of new-build opportunities in the short term.
- Engaged Nuclear Power Corporation of India Limited and major Indian suppliers to discuss potential opportunities, collaboration in the areas of services potential, supply chain synergies and new build.
- Signed a commercial contract with Third Qinshan Nuclear Power Company for full-core use of natural uranium equivalent fuel in two Qinshan CANDU 6 reactors.
- Ukraine confirmed that CANDU is an acceptable technology for that country and steps are being taken to include it in Ukraine's energy plan.

#### Life Extension

- · Complete three projects and meet or be within latest spending estimates.
- Prepare for 2011 Gentilly-2 outage with application of lessons-learned from earlier projects.
- Sign a major contract.

- Completion of all major work activities associated with the Wolsong Retube Project in South Korea and the Bruce Retube Project, Bruce A, Unit 2 in Ontario. Major retube work activities associated with Bruce A, Unit 1, were completed in early May 2011. The Point Lepreau life extension project encountered and addressed major technical hurdles that impacted both the schedule and the cost of the project. At fiscal year-end, work was progressing at or ahead of its latest project schedule, with completion expected in May 2012.
- · Hydro-Québec has delayed the Gentilly-2 outage date to late 2012.
- AECL signed contracts in March 2011 to begin early project work on the Embalse life extension and to establish the process for negotiating further major contracts for the project.

#### Services

- Generate revenue of \$121 million.
- · Deliver projects on time and on budget, more than 90% of the time.
- · Direct margin to exceed threshold.
- · Promote services and product offerings in India.

- · Achieved \$124 million in revenues.
- Closed projects were 85% on-time, on-budget at fiscal year-end, due mainly to resource challenges and supplier delays.
- · Exceeded threshold by 7%.
- Built relationship and advanced discussions on Services with Nuclear Power Corporation of India Limited.

#### **Operational Excellence**

- Drive accountability to budget and timelines throughout organization.
- · Drive financial benchmarks toward best-in-class metrics.
- Apply life extension lessons-learned and have in place a fully implemented Project Management Office and risk management process.
- Recordable lost-time accident rate: 10% improvement with increased reporting and use of Occupational Health & Safety scorecards.
- Efforts to enhance commercial mindset and bottom-line focus are ongoing.
- · High Performance organization initiative launched.
- Project Management Office ramp-up delayed until 2011–2012, but lessons-learned initiative continues.
- Recordable lost-time injury rate (1 event = 0.07 frequency) on par with previous year. Improved reporting and successfully rolled out Occupational Health & Safety scorecards.

#### Strategic Initiatives

Commercial Operations' long-term growth is anchored around successful development and implementation of its leading nuclear technologies – the EC6 and the ACR-1000. Commercial Operations is committed to delivering the two products safely, reliably and economically, to the highest quality, as products of choice for nuclear new-build customers in Canada and around the world. The organization's two-product strategy enables it to market the reactor product that is most suited to the distinct needs and drivers of a particular purchaser.

Commercial Operations' new-build product strategy is market-based. New-build business in the short term is anchored around the natural uranium EC6 while market interest for ACR-1000 and for further CANDU technology advancements are anticipated in the longer term.

In the short term, market prospects are strong for the EC6, the only Generation III medium-sized reactor (700-MWe class) with a proven pedigree available commercially worldwide and optimally-sized for smaller grids. Commercial Operations is focusing its

product development efforts on the EC6 to meet this market window. The EC6 product definition phase has been completed and the program is being accelerated to deliver licensing and product-readiness milestones to an anticipated new-build schedule.

The ACR-1000 design is completed to the degree that it is ready to be customized for a client. Efforts will continue to be made to scope out opportunities for ACR-1000 sales.

Commercial Operations' primary market for CANDU new build is Ontario. AECL was identified as the sole compliant bidder under the Ontario Request for Proposals process for a new-build project at Darlington. That process was suspended in June 2009. Last year, Ontario reaffirmed its interest in moving forward with the Darlington new-build project with the release of its updated 20-year Long Term Energy Plan.

Ontario Power Generation indicated in late 2010–2011 that it sees merit in building enhanced CANDU reactors at its Darlington site and, in addition to the ACR-1000, has included the EC6 in its environmental assessment. AECL remains an interested party to this process.

Success in Ontario will help facilitate business opportunities for CANDU internationally. CANDU 6 and EC6 development will focus primarily on the markets of Argentina, Romania, Jordan, Ukraine, Poland and China. Strong market interest for the EC6 has been expressed by countries that prefer a natural uranium reactor; a mid-sized reactor due to grid size and interconnect limitations; and/or those planning a transition to alternative fuel cycles, such as recovered uranium and thorium.

There are approximately 30 operating CANDU reactors around the world that may require life extension in the future. The successful delivery of Commercial Operations' current life extension projects will help secure future business. Efforts are being made to enhance project management processes, apply lessons-learned to ongoing life extension projects, and pursue life extension opportunities domestically and internationally.

Commercial Operations' Services business is viewed as a preferred supplier by many of its utility customers due to its role as original CANDU designer and its solid CANDU knowledge and expertise. To improve its position in the marketplace, the Services business has developed innovative and strategic approaches to marketing, customized for its key customers. The organization is also building market share by introducing new products and strategies, such as bundling of services, and leveraging strategic partnerships to mitigate competition and provide a broader range of solutions to its customers.

#### **Operations**

Commercial Operations continued to make progress on its two leading products under development, the EC6 and ACR-1000. During the year, the EC6 product definition phase was completed and the program was being accelerated as noted above. The CNSC's Phase 1 Pre-Project Review Design was completed in 2010 and Phase 2 was underway as of April 1, 2011. The development program is targeted to complete engineering, confirmatory testing and regulatory review to be project-ready by 2012–2013.

ACR-1000 development activities included advancements in fuel design, the reactor control centre and validation activities related to the design and safety analysis (reactor physics code suite). The ACR-1000 design is now ready for project-specific licensing. The third and final phase of the CNSC's Pre-Project Design Review was completed in 2010–2011. The generic Preliminary Safety Analysis Report was also completed last year. With design development now focused on the EC6, the ACR-1000 design will be retained in a state in which it can be customized as required for a future customer.

Commercial Operations completed all of the major work activities associated with the Wolsong Retube Project in South Korea and the Bruce Retube Project, Bruce A, Unit 2 in Ontario, both prior to fiscal year-end. Major retube work activities associated with Bruce A, Unit 1, were completed in early May 2011. The Point Lepreau life extension project encountered and addressed major technical hurdles that impacted both the schedule and the cost of the project. At fiscal year-end, work was progressing at or ahead of its latest project schedule, with completion expected in May 2012. Engineering and procurement activities continued on Gentilly-2, which has been delayed by Hydro-Québec to fiscal 2012–2013.

The Services business line continued to meet business objectives despite increased competition in the marketplace. In addition to supporting CANDU reactors, Services supplies targeted products and services, including pump seals, strainers, and plant display systems to non-CANDU customers worldwide.

Commercial Operations continued to pursue marketing efforts in Ontario and with several countries, including Argentina, India, China, Romania, Jordan and Ukraine to develop technologies and mobilize resources to facilitate new-build CANDU reactor projects.

AECL, on behalf of Commercial Operations, signed contracts to commence early project work on the Embalse life extension project in Argentina and to establish the process for negotiating further major contracts for the project. AECL was also contracted to define the project scope for completing Cernavoda Units 3 and 4 in Romania, and steps were taken to include CANDU in Ukraine's energy plan following the completion of a technical and economic evaluation for the application of CANDU in that country.

AECL and Third Qinshan Nuclear Power Company signed a contract to implement full-core natural uranium equivalent fuel in two CANDU reactors at Qinshan, China. The project, scheduled to take place over the next two years, follows the successful completion last year of the first-ever commercial demonstration irradiation of NUE in a Qinshan CANDU 6 reactor. Commercial Operations also continued its collaboration with Chinese experts and partners to determine an appropriate fuel for use in a thorium demonstration irradiation program in a Qinshan CANDU reactor. Preliminary studies into the thorium-capable CANDU reactor were undertaken during the year.

#### **Financial Review**

COMMERCIAL OPERATIONS	Actual	Actual Results	
(\$ millions)	2010-11	2009–10	
Revenue			
Reactor life extension	\$ 323	\$ 294	
Services	124	134	
Interest	11	11	
Total revenue	\$ 458	\$ 439	
Development costs	(40)	(29)	
Recognition of deferred development funding	205	_	
Impairment of intangible assets	(205)	_	
Net loss before operating funding	(236)	(479)	
Funding - Operating	449	375	
Net income (loss)	\$ 213	\$ (104)	

#### Revenues

Revenues from reactor life extensions increased to \$323 million (2009–2010: \$294 million). This 10% increase largely reflects greater progress toward completion of the current ongoing life extension projects, particularly at the Bruce and Wolsong sites.

The Services business generated \$124 million (2009–2010: \$134 million) in revenue, which is 8% lower than prior-year results due to fewer contracts awarded and a non-recurring \$5 million received in 2009–2010 from contract termination fees.

#### **Funding**

Commercial Operations recognized total funding of \$654 million. Of the total funding recognized, \$408 million (2009–2010: \$346 million) was used to meet operational requirements and contractual obligations including shortfalls in the life extension projects, which experienced additional schedule delays in 2010–2011. The balance of funding pertained to product development. Included in 2010–2011 funding is the recognition of \$175 million of deferred development funds received in the previous two fiscal years relating to the ACR-1000.

#### Net Income/Loss

Commercial Operations net income of \$213 million (2009–2010: \$104 million net loss) includes \$449 million (2009–2010: \$375 million) in operating funding recognized from the Corporation's Shareholder. When excluded, operating results reflect a net loss of \$236 million (2009–2010: \$479 million). The decreased net loss in the current year was primarily driven by comparatively lower cost of sales in 2010–2011 since a portion of the costs spent in the year were charged to income in 2009–2010 and carried on the balance sheet as an accrued contract loss provision. Increased revenue for the life extension projects as well as improvement in margins from the Services business contributed to the increase in net income from 2009–2010.

#### Outlook

In 2008–2009, the Government of Canada announced its decision to restructure AECL. In December 2009, investors were invited to submit proposals for AECL's Commercial Operations. The Government of Canada is expected to complete the restructuring process in 2011–2012. The outcome of this initiative may significantly impact the prospective information below.

#### Life Extension

Despite experiencing challenges on its initial life extension projects, Commercial Operations has completed the retube of two reactors, with another reactor retube expected to be completed in early 2011–2012. With this experience, lessons-learned, a skilled workforce and resources and technology, Commercial Operations is uniquely able to undertake future life extension projects. The outlook for life extension activities is promising, as utilities seek to extend the service life of existing reactors as a means of maintaining electricity generation capacity. Beyond Commercial Operations' initial life extension projects, 17 CANDU reactors to 2028 will need to be retubed, with a potential Commercial Operations scope of up to \$3 billion, in current dollars.

Commercial Operations expects revenue from this business to decline in 2011–2012 with the completion of the Wolsong and Bruce projects. In March 2011, contracts were signed to commence work on the Embalse life extension project in Argentina and to establish the process for negotiating further major contracts for the project. While it is difficult to predict the precise timing for life extension projects, Commercial Operations expects to secure a major contract in 2011–2012. Commercial Operations believes that life extension is an important business line for the future and is, in the mid-term, financially sound.

#### New Build

Commercial Operations' primary focus for new-build development remains in the domestic market, where CANDU-based nuclear energy continues to be an important part of Canada's electricity generating fuel mix.

In the third quarter of 2010–2011, the Ontario government released an update to its 20-year Long Term Energy Plan which reaffirmed its interest in building two reactors at Darlington. Ontario Power Generation indicated in late 2010–2011 that it sees merit in building enhanced CANDU reactors at its Darlington site and, in addition to the ACR-1000, has included the EC6 in its environmental assessment. AECL remains an interested party to this process.

While the ACR-1000 design is ready for sale, Commercial Operations is accelerating its EC6 development program to meet an expected EC6 new-build market window.

The EC6 is attracting significant interest in a number of markets around the world, including, but not limited to, Romania, Argentina, Ukraine, Lithuania, Jordan and China. Commercial Operations expects a minimum of three sales of its EC6 technology over the next five years.

Commercial Operations is optimistic about the future of the new-build business and expects revenues from this business to gradually increase over the next five years.

#### Services

The outlook for recurring service work is promising as utilities seek to enhance reliability, extend service life and optimize plant operations. Competitive pricing, improved execution, enhanced customer relationship management and expected new-build and life extension projects in Canada and abroad will strengthen the Services business, which will continue to provide a steady source of income to Commercial Operations. Services will be working to expand its market reach for its CANDU and non-CANDU products and services, including the potentially large market of India. The Services business had orders on hand of \$67 million at the end of March 2011, and continues to retain its status as a preferred supplier for many customers.

#### Government of Canada Support

Commercial Operations will continue to require Government of Canada funding in 2011–2012 to support life extension projects and to advance its technology development program.

### 2011-2012 MAJOR PRIORITIES AND DELIVERABLES

While delivering a safety first and high performance organization, Commercial Operations will focus on the following priorities and deliverables in 2011–2012:

- · Complete two life extension projects.
- · Sign two major commercial contracts.
- · Generate Services revenue of \$114 million.
- · Meet deliverable and financial performance targets on corporate programs and commercial projects.
- Sign an advanced fuel (thorium/recycled) joint development agreement with China.
- Expand sales reach in the major nuclear markets of China and India.
- Establish EC6 as acceptable technology in Ukraine and Jordan.
- · Advance Commercial Operations' position in Romania's Cernavoda Units 3 and 4 CANDU 6 project.
- Improve occupational, health and safety metrics.

#### **NUCLEAR LABORATORIES**

## **Research and Technology Operations**

#### **Business Lines**

- · Research and development
- · Isotope production
- · Historic waste management
- · Laboratory operations

#### 2010-2011 Goals

- · Apply national nuclear science and technology capabilities to strengthen Canadian industries through innovation.
- · Develop highly qualified people in Canada to pursue careers in science and technology.
- · Demonstrate environmental stewardship through the application of nuclear science and technology.
- · Apply national nuclear science and technology capabilities to improve the health of Canadians.
- Safely maintain a unique national science and technology campus to meet the needs of our partners in universities and industries, and address
  national priorities.

#### 2010-2011 Priorities

- · Meet research and development commercial performance targets.
- · Achieve technology development performance.
- · Provide research and development support for the ACR-1000.
- · Achieve project deliverable performance for the Port Hope Area Initiative.
- · Meet deliverable performance targets for the Nuclear Legacy Liability Program, Isotope Supply Reliability Program and Project New Lease.
- · Deliver on the operating and capital performance targets.
- Meet deliverable and financial performance targets on corporate (Research and Technology Operations and Liability Management Unit) programs and commercial projects.
- · Improve occupational, health and safety metrics.

#### 2010-2011 Measures

- · Project New Lease deliverable performance of 90%.
- · Isotope Supply Reliability Program deliverable performance of 90%.
- · Technology development performance of 96%.
- · Research and Development commercial performance of 95%.
- · Research and Development support for ACR-1000 at 90%.
- · Port Hope Area Initiative deliverable performance of 90%.

## 2010-2011 Significant Achievements and Progress

- · Project New Lease deliverable performance was 87%.
- $\cdot\,\,$  Isotope Supply Reliability Program deliverable performance was 84%.
- · Technology development performance was 99%.
- $\cdot\,$  Research and Development commercial performance was 100%.
- · Research and Development support for ACR-1000 was 100%.
- · Port Hope Area Initiative deliverable performance was 96%.

#### Strategic Initiatives

Over the past 60 years, Research and Technology Operations has made substantial contributions to Canada's economy and environment, largely as a result of the initial investment in its infrastructure: research reactors, laboratories and offices. The following renewal programs, dependent on Government of Canada funding, are underway:

- Project New Lease is a 10-year plan developed in 2006 to address the safe, secure and viable operation of Chalk River Laboratories. This includes the implementation of program improvements to meet industry standards in operations and the capital investment required to revitalize aging site infrastructure. The requirements, which were defined and categorized based on known risks, involve addressing operational performance; regulatory requirements; health, safety, security and the environment issues; demographic issues of an aging workforce; and nuclear industry best practices, including replacement of strategic research and development facilities. With this investment, the Chalk River Laboratories will help Canada sustain its role as a world leader in nuclear science and technology.
- The Isotope Supply Reliability Program involves renewing facilities, equipment and staff capabilities that are required for
  reliable, long-term isotope production. A key objective of the program is an Integrated Safety Review of the NRU reactor which
  will allow the reactor's continued operation beyond the Chalk River Laboratories licence renewal in October 2011. Other
  priorities include the provision of sufficient waste management facilities for continued isotope production and improvements
  to the management of emissions.
- Research and Development: Research and Technology Operations maintains and operates significant infrastructure, including
  the NRU reactor, and maintains an extensive research and development capability at its Chalk River site to support CANDU
  reactor development and scientific research.
- Delivery of the national low-level radioactive waste management program for Canada's historic radioactive wastes, through the Low-Level Radioactive Waste Management Office, and the construction of new long-term waste management facilities for historic waste in the Port Hope area through the Port Hope Area Initiative Management Office.

#### **Operations**

In 2010–2011, a \$58 million research and development program was continued as part of ongoing operations. This program, planned in conjunction with industry partners, supports activities in areas such as fuel, safety, health, and control instrumentation. A smaller but significant activity focuses on advanced concepts that will lead to a commercial application to reduce nuclear waste and increase the amount of electricity generated.

In support of the Commercial Operations, a development program to advance the ACR-1000 was also undertaken. Research and Technology Operations also engaged in commercial services. Customers included the Nuclear Waste Management Organization, the Department of National Defence, the CNSC, Canadian universities and hospitals, and the European Union.

Beyond providing support for the nuclear industry, Research and Technology Operations has played a role in an anti-terrorism initiative led by Defence Research and Development Canada. This included developing a new device to assess health effects in an emergency response to a radiological threat and technology to track contraband nuclear material at international borders.

The NRU reactor resumed medical isotope production in August 2010 after it was safely repaired and returned to service following a 15-month shutdown due to a heavy water leak. The repair was the first of its kind and is recognized as a world-class achievement in the nuclear community. The NRU is instrumental in enabling research, fuel testing and isotope production.

A key component of the Isotope Supply Reliability Program is the Integrated Safety Review of the NRU reactor, an activity that supports the renewal of the Chalk River Laboratories' operating licence. The work, divided into four phases, is described in a protocol document agreed upon by AECL and the CNSC. Phase 1 was completed in 2008–2009. Phase II, which involves a systematic assessment of the safe operation of the NRU, is progressing well, with all milestones to fiscal year-end met on schedule.

The assessment, along with an NRU peer review by the World Association of Nuclear Operators, forms the basis of a multi-year integrated implementation plan that will improve reliability of the aging reactor and ensure its continuing ability to be licensed. In February, the NRU became the first research reactor in the world to be granted full membership in the World Association of Nuclear Operators.

The Port Hope Area Initiative project advanced with the completion of detailed drawings and specifications for the remediation and construction work required for the Port Hope and Port Granby Projects, the submission of licensing documentation to the regulator, and the maintenance of positive relations with key stakeholders.

#### Financial Review

(\$ millions)	2010-11	2009–10
Revenue and Funding		
Revenue	\$ 50	\$ 33
Funding – Operating	327	321
Cost recoveries from third parties and other	14	7
Amortization of deferred capital funding	7	5
Total revenue and funding	\$ 398	\$ 366
Expenses		
Facilities and other	\$ 329	\$ 302
Research and development	58	59
Dedicated Isotope Facilities expenses	21	9
Total expenses	408	370
Net loss	\$ (10)	\$ (5)

#### Revenues

Commercial revenue increased to \$50 million (2009–2010: \$33 million). Revenue included isotope sales, commercial technology sales, nuclear waste management and research and development activities performed for the CANDU Owners Group. The increase is primarily due to the return to service of the NRU reactor following a 15-month shutdown and resumption of isotope production in August 2010.

In providing research and development support to the CANDU Owners Group, Research and Technology Operations contributes to fulfilling its mandate to maintain the CANDU safety, licensing and design basis for Canadian utilities. Revenues from these activities increased to \$25 million in 2010–2011 (2009–2010: \$20 million).

#### Funding

Parliamentary appropriations for operations and amortization of deferred capital funding increased to \$334 million (2009–2010: \$326 million). This amount includes funding of \$327 million (2009–2010: \$321 million) from the Government of Canada for activities associated with Research and Technology Operations as well as \$7 million (2009–2010: \$5 million) related to

amortization of deferred capital funding. Funding of \$42 million was received during the year to support repair activities and replace lost margin associated with the NRU reactor's extended shutdown. The increase in overall funding in 2010–2011 was driven by increased spending to meet contractual obligations and defend contractual rights related to the Dedicated Isotope Facilities and also reflects greater funding from the Government of Canada to support Research and Technology Operations' working capital requirements and operations.

Program funding includes renewal of Chalk River infrastructure (Project New Lease), infrastructure and operational support for improvement of the isotope production process (Isotope Supply Reliability Program) and site regulatory and operational requirements. This amount excludes \$17 million designated for site infrastructure requirements, accounted for as capital funding. Funding of \$15 million was provided to support Project New Lease capital activities, including the completion of a second Shielded Modular Above-Ground Storage unit, electricity infrastructure upgrades, design and refurbishment of several other facilities (shielded facilities, hydrogen laboratory, research facilities) and several operational improvement programs.

Research and Technology Operations manages historic waste through the Low-Level Radioactive Waste Management Office and Port Hope Area Initiative Management Office on a cost recovery basis for Natural Resources Canada. Funding of \$14 million (2009–2010: \$7 million) was provided through Natural Resources Canada to support both offices.

#### Expenses

Research and Technology Operations' total expenses were \$408 million compared to \$370 million in 2009–2010. This was the result of increased activities under the Isotope Supply and Reliability Program and Project New Lease Program in addition to higher costs associated with the ongoing arbitration proceedings for isotope legacy obligations. These increases were partially offset by lower NRU repair costs in 2010–2011 relative to 2009–2010, as the NRU reactor was successfully returned to service in August 2010. Expenditures also increased over those in 2009–2010 as a result of the planned ramp up in project management activity related to preparations for the construction of a waste storage facility under the Port Hope Area Initiative Management Office.

#### Net Loss

Research and Technology Operations reported a net loss of \$10 million (2009–2010: \$5 million) as the increases in revenue and funding did not entirely offset the higher expenses incurred.

#### Outlook

Research and Technology Operations will execute various programs that are aligned with the Government of Canada's outcome areas designed to benefit Canadians. The organization will ensure that Canadians and the world receive energy, health, environmental and economic benefits from nuclear science and technology, safely and securely.

Overall, progress on infrastructure and operational improvement initiatives will continue in 2011-2012 and beyond.

#### 2011-2012 Major Priorities and Deliverables

Focus will be placed on delivering funded program commitments; meeting financial performance targets; achieving successful re-licensing of the Chalk River Laboratories site; and supporting the AECL restructuring initiative.

#### **Liability Management Unit**

#### **Business Lines**

· Legacy Waste Management

#### 2010-2011 Goals

 To manage nuclear legacy liabilities on behalf of the Government of Canada on AECL and other sites to ensure the safety of Canadians and protect the environment.

#### 2010-2011 Priorities

- · Negotiate the agreement for funding of the next phase of the Nuclear Legacy Liabilities Program.
- · Advance decommissioning activities at the Whiteshell site to reduce liabilities and operational costs.
- · Continue to reduce health, safety and environmental risks at the Chalk River site.
- · Advance solutions for the immediate, near-term and long-term management of legacy and ongoing operational wastes.

#### 2010-2011 Measures

#### 2010-2011 Significant Achievements and Progress

#### **Nuclear Legacy Liabilities Program**

- Agreement for funding of the next phase; Treasury Board milestone performance of 100%; and deliverable performance of 90%.
- Agreement for funding of the next phase was in place at fiscal year-end;
   Treasury Board milestone performance was 93%; and achieved 90% deliverable performance.

#### Strategic Initiatives

Key Liability Management Unit strategic initiatives are:

- · Ensure that necessary core competencies are available and robust.
- Establish and maintain integrated plans and facilities that support waste management requirements at Chalk River. This ensures facilities are in place to support business activities and ensures continued compliance with the Chalk River site licence.
- Achieve excellence in operations and capabilities by ensuring that the Liability Management Unit processes for Nuclear
   Legacy Liabilities Program planning and delivery meet the Government of Canada's needs and planned schedules and costs.

#### **Operations**

Major activities at Chalk River during the year included the decommissioning of various structures and monitoring and surveillance of a number of facilities, buildings and waste management areas. The new approach adopted for dealing with radioactive liquids in aging tanks was progressed, which has reduced the decommissioning and waste management provision. As well, significant progress was made in constructing facilities and equipment to retrieve historic, corroded, used research reactor fuels from aging storage facilities; to package and vacuum dry them; and to store them in a new storage facility. The dismantling and removal of the old Chalk River site-entrance building and cleanup and removal of an obsolete laboratory were completed, as was the removal of several small buildings.

At Whiteshell, work included the continuing reconfiguration of nuclear services and site utilities, construction of a Shielded Modular Above-Ground Storage facility and continued decommissioning of redundant buildings. A major milestone in the Underground Research Laboratory Closure project was reached with the completion of all underground work and the sealing of the three surface openings, leaving only the remediation of the surface facilities and ongoing monitoring to complete.

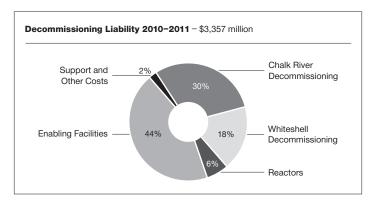
#### Financial Review

LIABILITY MANAGEMENT UNIT	Actual Re	Actual Results		
(\$ millions)	2010-11	2009-10		
Decommissioning funding	\$ 126	\$ 115		
Expenses	389	86		
Net income (loss)	\$ (263)	\$ 29		

### Decommissioning Funding

The Liability Management Unit received funding for the fifth and final year of the start-up phase of the Nuclear Legacy Liabilities Program, a Government of Canada-funded initiative to address federal liabilities associated with redundant buildings, legacy wastes, and environmental contamination.

Funding recognized during the year was \$126 million, compared to \$115 million the previous year. The related expenditures reduced the decommissioning and waste management liability. The increase in expenditures over the previous year is largely the



result of waste processing costs at off-site locations, increased investment in enabling facilities, and the decommissioning and demolition of redundant buildings on the site.

Whiteshell decommissioning expenditures are comprised of the site operating costs as well as decommissioning projects. Expenditures at Whiteshell also increased over the previous year as a result of the construction of a Shielded Modular Above-Ground Storage facility for low-level waste storage.

Expenditures on enabling facilities were slightly higher than the previous year with additional investment in the construction of waste storage facilities, including a fuel packaging and storage facility that allows for improved management of fuel wastes.

#### Expenses

Expenses increased to \$389 million (2009–2010: \$86 million), mainly as a result of revised expenditure estimates over the balance of the long-term decommissioning plan period. As this expense relates to future periods, there is no funding or cash impact in the current year. Accretion and other expenses of \$153 million were relatively consistent with the previous year (2009–2010: \$158 million). Overall, the Liability Management Unit reported a net loss of \$263 million (2009–2010: \$29 million net income).

#### Outlook

The Liability Management Unit manages decommissioning and waste management liabilities on behalf of the Government of Canada. Government of Canada funding for the initial \$513 million five-year start-up phase of the long-term (70-year) strategy ended in March 2011. Major activities underway and continuing through 2011–2012 include continued investment in waste processing facilities to address radioactive liquid and fuel wastes stored in aging structures, and the ongoing decommissioning of the Whiteshell Laboratories and shut down buildings and facilities at Chalk River. Funding for the next three years of the program has been secured.

#### 2011-2012 Major Priorities and Deliverables

The Liability Management Unit will continue to progress with program schedules as agreed upon with Natural Resources Canada. Ongoing activities include construction of enabling facilities, various waste monitoring and remediation activities, long-term planning related to decommissioning of buildings, program funding renewal, and storage facilities.

## CONSOLIDATED CASH FLOW AND WORKING CAPITAL

SOURCES AND USES OF CASH	Actual Results	
(\$ millions)	2010-11	2009-10
Cash (used in) from operating activities	\$ (7)	\$ 1
Cash used in investing activities	(39)	(129)
Cash from financing activities	17	143
Cash and cash equivalents		
(Decrease) increase	(29)	15
Balance at beginning of the year	48	33
Balance at end of the year	\$ 19	\$ 48

Overall, AECL's year-end closing cash position decreased by \$29 million to \$19 million from the previous year's balance of \$48 million.

## **OPERATING ACTIVITIES**

Operating activities resulted in a net cash outflow of \$7 million compared to a net inflow of \$1 million in 2009–2010. This was a result of increased cash paid to suppliers and decreased cash received from customers, partially offset by increased Parliamentary appropriations.

#### **INVESTING ACTIVITIES**

Investing activities involved a net outlay of \$39 million, mainly relating to expenditures on the Project New Lease initiative. Outlays were higher in the previous year as a result of capital investment in the ACR-1000 program.

#### **FINANCING ACTIVITIES**

Financing activities generated proceeds of \$17 million (2009–2010 \$143 million) related to capital infrastructure refurbishment funding which included the Project New Lease and Isotope Supply Reliability Program initiatives. The prior year included funding for ACR-1000 development activities.

## **OFF-BALANCE SHEET ARRANGEMENTS**

In the normal course of business, AECL enters into the following off-balance sheet arrangements:

### BANK GUARANTEES AND STANDBY LETTERS OF CREDIT

These instruments are used in connection with performance guarantees on major contracts. The guarantees generally relate to project and product performance and advance payments. In addition, AECL guarantees that certain projects will be completed within a specified time, and if the Corporation does not fulfill its obligations, it will assume responsibility for liquidated damages. The aggregate amount of AECL's potential exposure through liquidated damages (\$96 million) and guarantees (\$213 million) as at March 2011 was \$309 million (2009–2010: \$599 million). Management has assessed the impact of liquidated damages on the active life extension projects and incorporated it in the calculation of liabilities in the financial statements.

#### INDEMNIFICATION ARRANGEMENTS

These arrangements are part of the standard contractual terms to counterparties in transactions such as service agreements, sale and purchase contracts. These indemnification agreements may require AECL to compensate the counterparties for costs incurred as a result of certain events. The nature of these indemnification agreements prevents AECL from making a reasonable estimate of the likely maximum amount to be paid out by the Corporation. Management does not expect these arrangements to have a material current or future effect on the consolidated financial statements of the Corporation.

## MANAGEMENT OF RISKS AND UNCERTAINTIES

AECL recognizes risk management as an integral part of sound strategic planning and corporate governance.

AECL's Board of Directors is responsible for overseeing the management of risks at AECL. The Chief Executive Officer is accountable to the Board of Directors for all risk-taking activities and risk management programs. The Corporation's internal and independent auditors report directly to the Audit Committee, in line with best practices. AECL has established processes to facilitate wrongdoing disclosure company-wide.

AECL has classified risks in the following categories:

#### **AECL's Risk Framework**

RISK CATEGORIES				
LIQUIDITY	PERFORMANCE	TECHNOLOGY	SUPPLY CHAIN	HUMAN RESOURCES
LICENSING	COMPLIANCE	MARKET	BUSINESS INTERRUPTION	SECURITY

#### **IMPACT**

FINANCIAL	SAFETY	QUALITY	REPUTATION
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#### LIQUIDITY

Liquidity risk relates to AECL's ability to fund capital improvement projects and growth opportunities, and to meet contractual and regulatory compliance obligations.

#### Long-Term Government of Canada Funding

A major risk facing the Corporation is related to securing a sustainable source of funds to safely maintain Canada's nuclear capabilities and increase commercial value.

### **Working Capital Requirements**

#### **Major Contracts**

A significant portion of AECL's commercial revenue is derived from project management and product development activities that span several years from inception to completion. Life extension and new build are mega-infrastructure projects and the complexity and timing of negotiations creates challenges to achieving estimated contract-effective dates. This may significantly impact working capital requirements.

AECL reduces these risks by negotiating contracts that maintain positive cash flow throughout the project. AECL's Services business also provides a consistent stream of income.

### Heavy Water Funds

Under an agreement with the Government of Canada, AECL is required to return a portion of heavy water funds to the Government of Canada. This issue remains unresolved, and AECL currently retains annual proceeds related to the sale or lease of heavy water and uses these proceeds to support operational requirements. If these proceeds must be returned to the Government of Canada, a new source of long-term funding will be needed.

### Payment Delays

AECL's cash position can be significantly affected by the timing of payments on major projects, and is dependent on a mix of business activity. Major project payments are triggered by the attainment of milestones and if delays or disputes arise, payments can be withheld, but the project may continue. While AECL mitigates this risk by negotiating an appropriate payment structure within contracts, the Corporation operationally requires responsive funding mechanisms to better address this risk.

#### **Operational and Capital Costs**

AECL manages large projects that are susceptible to increased costs, and consequently may severely affect AECL's working capital position. AECL has a history of operating with current liabilities in excess of current assets, and short-term needs are addressed through funding.

## **PERFORMANCE**

Performance risk relates to meeting contractual requirements, cost, schedule, and stakeholder expectations.

There are considerable risks in managing AECL's major projects, which include ensuring that project execution is in accordance with the client's contractual requirements and changes are managed as a result of economic factors and Government of Canada decisions. Failure to meet contractual requirements may result in legal and financial implications. In addition, products and services may require special guarantees or acceptance of completion, which could ultimately result in unplanned costs.

AECL seeks to manage these risks through project control mechanisms, rigorous review of contracts and ongoing monitoring and evaluation of progress. In addition, maintaining appropriate insurance coverage for various aspects of a given project and developing effective relationships with related stakeholders are key components to a successful project management process.

During the year, AECL continued to experience financial setbacks on its initial life extension projects, arising from technical and operational challenges. Consequently, maintaining original cost and schedule targets has not been possible, and additional Government of Canada funding was requested to support Commercial Operations. Several of these projects are expected to be completed in 2011–2012. Mitigation strategies have been put in place for known risks, lessons-learned are being applied to more recently-awarded projects and AECL has increased its oversight on all of its projects. The Corporation remains committed to standing behind its technology and delivering on its contractual commitments.

The Project New Lease and Nuclear Legacy Liabilities Program are susceptible to performance risk. As with any project, there is a risk that these projects could experience increased schedule delays, supply chain performance issues and challenges relating to timely access to human resources. These risks are being mitigated through the implementation of project management best practices, enhanced risk management practices, and increased emphasis on outsourced supply.

## **TECHNOLOGY**

Technology risk relates to the ability to advance technology and deliver our products and services to meet functional, economic or licensing requirements.

#### Commercialization of the EC6 and ACR-1000

Timely completion of the EC6 and ACR-1000 development programs is crucial to AECL meeting the new-build market window. To be successful, the products must meet functionality, cost and performance parameters as well as licensing requirements. Furthermore, market timing, continued support from the federal government and customers, licensing preparation and an appropriate financing model and delivery structure are critical success factors. AECL manages the associated risks by closely monitoring progress and carefully managing available resources in accordance with market conditions.

AECL's new-build product strategy is market based. In the short term, market prospects are strong for the EC6. AECL is committed to delivering the EC6 safely, reliably and economically as the product of choice for domestic and international customers that prefer a natural uranium reactor, a mid-sized reactor, and/or alternative fuel cycles. The support of the Shareholder is crucial to successfully complete the EC6 technology development to meet delivery requirements. The ACR-1000 design is more than 90% complete and both the CNSC Pre-Project Design Review and the generic Preliminary Safety Analysis Report Supplemental were completed last year. The ACR-1000 is now ready for project-specific licensing and is being maintained in a customer-ready state. In 2010–2011, AECL recognized an impairment expense of \$205 million relating to ACR-1000 development costs. The impairment was due to uncertainty in realizing cash flows from the company's investment in the development of the Generation III+ reactor.

While the EC6 and ACR-1000 are an evolution of the CANDU 6, the extent to which the reactors meet construction and operating performance goals will only be known with certainty once the reactors are completed and operational. There also are risks that actual performance will not meet expectations and costs will escalate beyond budget. AECL's competitors face the same risks.

### **SUPPLY CHAIN**

Supply chain risk relates to the availability of qualified suppliers to support AECL's activities, work stoppage, or failure by other subcontractors or suppliers to perform according to contractual terms.

AECL's ability to build upon its supply chain is crucial to its ability to meet contractual requirements. In the context of major commercial contracts, unstable supply could result in contractual penalties, legal implications and associated costs that could affect project margins and AECL's financial position. AECL also subcontracts a portion of its work to third parties. As a result, third party performance issues may affect AECL's ability to perform and achieve anticipated profitability on a project.

AECL manages these risks by developing strategic alliances, adhering to stringent procurement and management practices, and obtaining performance guarantees.

A strong supply chain is present in Canada through the Organization of CANDU Industries. AECL continues to develop a robust supply chain by enhancing its organizational capabilities to ensure competitive supply is available globally.

#### **HUMAN RESOURCES**

This risk relates to labour disruptions, access to skilled resources at various locations and maintaining adequate levels of skilled human resources to meet customer requirements and advance technology capability.

Considerable resources are required to execute the Isotope Supply Reliability Program, Project New Lease, the Nuclear Legacy Liabilities Program and existing and anticipated new-build and life extension projects. The human resource risk stems from an increasing demand for resources in the nuclear industry worldwide and changing demographics of scientific and technical resources industry-wide. Insufficient personnel and technical capability could affect AECL's business objectives and financial results.

To help mitigate these risks, AECL is enhancing its resource planning and development processes, focusing on the development of staff in required technical and managerial disciplines. AECL has put in place integrated training programs; established links with post-secondary institutions to encourage careers in the nuclear industry; is creating relationships with partners to provide complementary skills; and is recruiting in all fields to ensure sufficient skilled resources are available to deliver on commitments.

#### **LICENSING**

The Licensing risk relates to obtaining and maintaining licences for nuclear facilities and new technologies.

The stringent licensing requirements contribute to the safe and secure operation of nuclear facilities in Canada. However, they also contribute to an increased project timeframe and associated compliance and administrative costs.

AECL's facilities at the Chalk River and Whiteshell sites require nuclear-related licences. Any inability to acquire licences for new technologies and/or existing technologies would severely affect AECL's business prospects.

AECL mitigates licensing risk through extensive monitoring of all licensing activities on an ongoing basis.

The licence for the Chalk River site expires in October 2011 and AECL has made an application for a new five-year licence, which is under review by the CNSC. Significant changes to the format and content of the Chalk River site licence are being reviewed, ahead of public hearings to be held later in 2011. The new licence is expected to require implementation of upgrades to specific nuclear programs to maintain compliance with the evolving regulatory requirements. Improvements to facilities and programs that support the operation of the NRU reactor are a requirement under the new licence. A significant investment in AECL's Chalk River nuclear programs and facilities is required to reduce operational, licensing and commercial risks. Funding will be provided by the Government of Canada during 2011–2012 to implement the necessary improvements through the Project New Lease program and the Isotope Supply Reliability Program.

#### **COMPLIANCE**

Compliance risk relates to maintaining compliance with applicable laws, regulations and standards.

## Applicable Laws and Regulations Related to Nuclear Facilities and Technologies

AECL is subject to stringent regulations in the areas of health, safety, security and environment. Failure to comply with regulations could result in significant financial penalties and ultimately lead to licence suspension, thereby affecting AECL's ability to operate its nuclear facilities.

AECL manages this risk by ensuring and assessing compliance with all applicable national and international technical quality assurance standards and the relevant aspects of the Nuclear Safety and Control Act and its regulations.

Furthermore, AECL has implemented several nuclear compliance programs that specifically address the deployment of due diligence processes and associated resources necessary to comply with all applicable laws and regulations.

#### **Capability of Research Facilities**

AECL's research laboratories operate major facilities, including reactors, experimental loops, shielded facilities and waste management plants. These are used to conduct research and support commercial activities, including the isotope business. Facilities are subject to applicable laws and regulations relating to safety and environmental matters.

AECL seeks to manage the safety and environmental risks associated with its facilities through its Safety Management System, which includes numerous program controls, such as stringent safety reviews and audits. Where a shortfall is identified, appropriate corrective action plans are put in place. These controls provide assurance of compliance with all applicable laws and regulations.

In August 2010, the NRU reactor was successfully repaired and returned to service following an extended shutdown that impacted the production of medical isotopes since May 2009. An Integrated Safety Review of the NRU reactor, part of the Isotope Supply

Reliability Program, was completed and resulted in the creation of an Integrated Implementation Plan that supports continued safe operation past the October 2011 expiry date of the Chalk River Laboratories operating licence. As with any technology, the advanced age of the NRU reactor creates challenges for reliable operation. A rigorous program of maintenance and system monitoring is in place to reduce the likelihood of future service disruptions.

AECL's Chalk River site infrastructure is aging and various related risks and hazards have been identified. During the year, funding was provided for Project New Lease, which is a long-term plan specifically designed to support the safe, secure and viable operation of AECL's Chalk River site. The plan is subject to continued Government of Canada funding.

#### **MARKET**

Market risk relates to factors such as competition, political stability, public acceptance, offshore operations and third party credit.

#### **Decision Cycles and Competitor Size**

One of the major business risks faced by the nuclear industry is the very long decision cycle for new major projects. Furthermore, demand levels for AECL's products and services are affected by factors such as technology development, economic and social trends, and government policy initiatives.

In the project and services businesses, AECL also competes with publicly-traded corporations that have large non-contestable home markets and the ability to raise debt and form equity partnerships.

To minimize competitive threats, AECL is establishing new strategic business alliances, increasing its full-service capability, pursuing the reactor life extension business, commercializing newly-developed technologies and carefully managing its portfolio of existing product lines. With regard to human resources, AECL has programs in place to retain and build core competencies to support AECL's corporate objectives and business opportunities.

In 2010–2011, AECL established and further developed strategic technology and business alliances, with the intention of expanding its global reach. These alliances allow AECL to better meet the technology and business requirements of markets in countries such as China and India.

In June 2009, the Ontario government suspended its Request for Proposals process for the construction of two nuclear reactors in Darlington, Ontario. While Ontario's decision delays the potential first sale of an enhanced CANDU reactor and increases market risk, AECL is focused on its CANDU development program, on managing its skilled resources and on continuing its marketing efforts in Canada as an initial step to entering the global market.

#### **Public Perception of Nuclear Technology**

Public perception is a risk that has the potential to impact AECL's nuclear-related activities and hinder the attainment of strategic objectives.

In March 2011, a 9.0-earthquake and a tsunami as high as 14 metres struck Japan, affecting the Fukushima Daiichi nuclear power generating station. The incident garnered significant global media attention and public scrutiny. Conditions at Fukushima remained serious into the fiscal new-year.

AECL immediately responded to the event, taking action to monitor and analyze events and working co-operatively with Canadian and international regulators, nuclear organizations and customers to apply, where appropriate, lessons-learned from the Japanese event.

Beyond fiscal year-end, AECL was participating in reviews led by the Canadian Nuclear Safety Commission, International Atomic Energy Agency, European Union, United Nations, G20 and the World Association of Nuclear Operators. Nuclear technology that works well will be confirmed during this process. Nuclear technology that can be further improved will be identified and actions will be taken in a transparent and accountable fashion.

The full reputational impact of this incident on AECL and the global nuclear industry could not be assessed at time of publication. However, the reviews and learning emerging from this event will result in even greater safety, which may allay public concerns regarding nuclear technology.

In general, adverse public perception could result in AECL's delaying or ceasing certain business activities and could affect AECL's reputation. In Canada, public consultations are a mandatory part of the environmental assessment process. Nuclear-related environmental assessments are generally initiated through CNSC licensing requirements.

AECL mitigates this risk through proactive information programs that inform the public about safety measures and risks associated with nuclear activities. Also, AECL and organizations with which it has affiliations, such as the Canadian Nuclear Association, inform the public, through various means, about nuclear energy benefits and conduct surveys to obtain public feedback.

To reassure the public that AECL places the highest priority on the health and safety of its workers and the Canadian public, and on protecting the environment, AECL maintains an Environmental Stewardship Council to enhance communications with key area

stakeholders and the communities surrounding its operations near Chalk River, Ontario. The Corporation has also enhanced its voluntary public disclosure of events relating to its Chalk River Laboratories, including routine emissions and non-routine items or events that may periodically occur.

Enhanced communication procedures also include the implementation of policies addressing business conduct and ethics, developing business recovery plans, ensuring transparency and practicing good corporate governance.

#### **Isotope Supply**

AECL placed the Dedicated Isotope Facilities, including the MAPLE reactors, in an extended shutdown state in June 2009. The CNSC granted a licence in March 2010 to formalize the status of the facilities. Legal proceedings by MDS (Canada) Inc. against AECL and the Government of Canada related to these facilities are ongoing and liabilities associated with this, if any, were not determinable at time of publication.

### **BUSINESS INTERRUPTIONS**

AECL is subject to risks associated with operations disruptions. These risks may arise from a number of circumstances, such as regulatory obligations, labour disputes, fire, weather, facility malfunction and other risks associated with facilities and business operations. AECL reduces these risks by using an extensive management system and conducting regular audits.

A prudent program of equipment and facility maintenance supports ongoing operation of AECL's facilities. The NRU is a 50-plus-year-old reactor operating beyond its expected lifespan. The reactor underwent an extended shutdown between May 2009 and August 2010 to repair a heavy water leak that was discovered in the reactor vessel. Isotope production and various research and development activities were curtailed during the shutdown. AECL's Project New Lease and Isotope Supply Reliability Program initiatives were designed to support the renewal of facilities, equipment and staff capabilities, including those relating to the NRU reactor. These initiatives will help mitigate further risks to the NRU reactor and elsewhere on site.

#### **SECURITY**

This risk relates to the potential breach in security of AECL sites, facilities, physical assets, personnel and information.

Nuclear technology and facilities are subject to higher than normal levels of security. A breach in security could result in unauthorized transfer of technology, disclosure of sensitive business information or harm to personnel. Such an event could result in safety implications at nuclear facilities that could impact AECL's nuclear-related licences and ability to competitively operate its business.

AECL reduces this risk through the implementation of rigorous security measures and maintains strict controls and operating procedures.

### **IMPACT OF RISKS**

These risks could affect AECL with varying degrees of severity. They could also increase AECL's financial costs and impact the Corporation's ability to operate facilities and perform on contracts as a result of issues-related safety factors or quality of work performed. All have the potential to diminish AECL's reputation in the industry.

## **ACCOUNTING CHANGES**

#### Adoption of International Financial Reporting Standards in Canada

As a result of amendments to the scope of public sector accounting standards approved by the Public Sector Accounting Board (PSAB) in October 2009, AECL is required to select between International Financial Reporting Standards (IFRS) or Public Sector Accounting Standards as the most appropriate basis of accounting for the 2012 fiscal year and beyond. Due to the commercial nature of some of its business, AECL has determined that IFRS is the more appropriate basis. Accordingly, AECL will prepare its last financial statements in accordance with Canadian Generally Accepted Accounting Principles (GAAP) for the year ended March 31, 2011 and, effective April 1, 2011, AECL's financial statements will be prepared in accordance with IFRS. The fiscal 2011–2012 financial statements will include comparative figures and the April 1, 2010 opening balance sheet will be restated to conform to IFRS. The cumulative net income differences between Canadian GAAP and IFRS relating to activity prior to April 1, 2010 will be accounted for as adjustments to the opening Shareholder's Deficit balance on April 1, 2010.

As part of its transition to IFRS, AECL identified the expected impact of adopting IFRS on its financial statements. Excluding reclassifications, the most significant impacts were to the Decommissioning and Waste Management Provision and Employee Future Benefits.

## Treasury Board Standard on Quarterly Financial Reports for Crown Corporations

The Treasury Board "Standard on Quarterly Financial Reports for Crown Corporations" (the "Standard") takes effect on April 1, 2011 and will require AECL to publish its results for the quarter ended June 30, 2011 with comparative data. The implementation date for

this new requirement aligns with AECL's adoption of IFRS. Pursuant to Treasury Board guidelines issued on March 17, 2011, AECL will elect to not follow IAS 34, "Interim Financial Reporting" with respect to the content of the report. Instead, AECL will produce its report in accordance with the Standard's "Form and Content" disclosure requirements, with an overall objective to ensure its quarterly financial reports are timely and consistent in support of effective oversight of public funds.

## CRITICAL ACCOUNTING ESTIMATES AND POLICIES

AECL's accounting policies are developed in accordance with Canadian GAAP. Critical accounting policies are considered to be the most important in determining AECL's financial condition and results. They also require professional judgment by management. A summary of the Corporation's significant accounting policies, including the critical policies 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. This revenue is recognized using the percentage of completion method, whereby revenue is recorded as related costs are incurred, relative to estimated total contract 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 throughout the duration of a contract term are reflected in the period in which the need for revision becomes known. Additionally, losses on long-term contracts are recognized in the period in which they are identified, and are based upon the anticipated excess of contract costs over the related contract revenues. Any such losses are recorded as a component of cost of sales. Revenue from Services sales is recorded when services are rendered and goods are shipped. Revenue from heavy water shipments is recognized when the shipment is delivered in accordance with the requirements of the contract.

#### **ASSET IMPAIRMENT**

AECL reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows, and measurement of an impairment loss is based on the fair value of the assets. Estimated undiscounted future cash flows reflect management's best estimates and changes in those estimates could materially affect the carrying amount of the long-lived assets. As a result of its review, AECL determined that the carrying amount of ACR-1000 development costs was not recoverable and exceeded fair value. Consequently, the asset was written down as described in Note 9 of the Consolidated Financial Statements.

## **HEAVY WATER INVENTORY**

Heavy water inventory is recorded as a long-term asset as the lead-time required in relation to future reactor sales exceeds one year. A provision has been made for detritiation and upgrading of the inventory.

## 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 operating activities are recognized as funding in the Consolidated Statement of Operations to offset costs incurred.
- 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 2011, amounted to \$157 million compared to \$147 million in the previous year.

Commencing in 1996–1997, and pursuant to a 10-year arrangement with the Treasury Board for funding decommissioning activities, AECL retains the net proceeds from the sale or lease of Government of Canada-funded heavy water inventory. This funding arrangement, however, expired on April 1, 2006, and proceeds from sales made during the 10-year arrangement that are received after that date are transferred from contributed capital to decommissioning funding.

#### **DECOMMISSIONING AND WASTE MANAGEMENT**

Decommissioning and waste management costs are recorded as a long-term liability. The liability is recorded based on the discounted value of the estimated future decommissioning and waste management expenditures to the extent that they can be reasonably estimated. The provision is reviewed annually to reflect actual expenditures incurred and changes in management's estimate of the future costs and timing thereof. The liability disclosed includes waste generated after March 31, 2006, for which AECL is financially responsible.

# MANAGEMENT'S RESPONSIBILITY

The consolidated financial statements, all other information presented in this Annual Report and the financial reporting process are the responsibility of 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*, and the articles, by-laws and policies of the Corporation and its subsidiaries. The Corporation has met all reporting requirements established by the FAA, 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 is responsible for ensuring that management fulfills its responsibility. To accomplish this, the Board has five standing committees: Audit; Human Resources & Governance;

Project Risk Review; Science, Technology & Nuclear Oversight; and Special Advisory Committee. The Audit Committee, composed of independent directors, has a mandate for overseeing the independent auditors, directing the internal audit function and assessing the adequacy of AECL's business systems, practices and financial reporting. The Audit Committee meets with management, the internal auditor and independent auditors on a regular basis to discuss significant issues and findings, in accordance with their mandate.

The independent auditors and internal auditor have unrestricted access to the Audit Committee, with or without management's presence. The Audit Committee reviews the consolidated financial statements and the Management's Discussion and Analysis report with both management and the independent auditors before they are approved by the Board of Directors and submitted to the Minister of Natural Resources. The Chair of the Audit Committee signs the audited financial statements.

**Hugh MacDiarmid** 

President and Chief Executive Officer
June 7, 2011

Kent Harris
Chief Financial Officer
June 7, 2011

# **INDEPENDENT AUDITORS' REPORT**

To the Minister of Natural Resources

#### **Report on the Consolidated Financial Statements**

We have audited the accompanying consolidated financial statements of Atomic Energy of Canada Limited and its subsidiaries, which comprise the consolidated balance sheet as at March 31, 2011, and the consolidated statement of operations, consolidated statement of changes in shareholder's deficit, consolidated statement of comprehensive loss and consolidated cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory information.

# Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with Canadian generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

#### Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effective - ness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Atomic Energy of Canada Limited and its subsidiaries as at March 31, 2011, and the results of their operations and cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

#### Emphasis of Matter

We draw attention to Note 2 to the financial statements which describes facts with respect to the possible restructuring of Atomic Energy of Canada Limited and the status of the Corporate Plan approval as at the reporting date. Our opinion is not qualified in respect of these matters.

#### Report on Other Legal and Regulatory Requirements

As required by the *Financial Administration Act*, we report that, in our opinion, Canadian generally accepted accounting principles have been applied on a basis consistent with that of the preceding year.

Further, in our opinion, the transactions of Atomic Energy of Canada Limited and 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 Atomic Energy of Canada Limited and its wholly-owned subsidiaries.

John Wiersema, FCA

Interim Auditor General of Canada

June 7, 2011 Ottawa, Canada

Chartered Accountants, Licensed Public Accountants

June 7, 2011 Toronto, Canada

KPMG LLP

# **CONSOLIDATED BALANCE SHEET**

As at March 31

(thousands of dollars)	2011	2010
Assets		
Current		
Cash and cash equivalents (Note 4)	\$ 18,563	\$ 47,833
Accounts receivable and unbilled revenue	262,753	121,774
Current portion of long-term receivables (Note 6)	20,141	19,028
Inventory (Note 5)	28,982	30,365
	330,439	219,000
Long-term receivables (Note 6)	149,777	170,224
Trust fund (Note 7)	34,939	29,671
Heavy water inventory (Note 5)	290,974	291,701
Property, plant and equipment (Note 8)	239,238	231,360
Intangible assets (Note 9)	2,607	180,040
	\$ 1,047,974	\$ 1,121,996
Liabilities		
Current		
Accounts payable and accrued liabilities	\$ 118,690	\$ 206,019
Customer advances and obligations	423,314	440,872
Current portion of provisions (Note 15)	232,396	232,732
Current portion of decommissioning and waste management provision (Note 12)	136,900	131,200
Current portion of long-term payables (Note 11)	13,319	13,319
	924,619	1,024,142
Decommissioning and waste management provision (Note 12)	3,220,146	2,953,699
Deferred capital funding (Note 10)	156,973	147,002
Deferred development funding (Note 10)	_	175,348
Deferred decommissioning and waste management funding (Note 16)	122,506	100,644
Employee future benefits (Note 14)	61,967	61,501
Long-term payables (Note 11)	6,029	18,289
	4,492,240	4,480,625
Commitments and contingencies (Notes 12 and 18)		
Shareholder's deficit		
Capital stock		
Authorized – 75,000 common shares		
Issued – 54,000 common shares	15,000	15,000
Contributed capital (Note 16)	325,533	350,872
Deficit	(3,784,799)	(3,724,501)
Accumulated other comprehensive income	_	
	(3,444,266)	(3,358,629)
	\$ 1,047,974	\$ 1,121,996

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

Approved on behalf of the Board:

Peter Currie Director Hugh MacDiarmid
Director

# **CONSOLIDATED STATEMENT OF OPERATIONS**

For the year ended March 31

(thousands of dollars)	2011	2010
Commercial Operations		
Revenue		
Nuclear products and services	\$ 447,637	\$ 428,074
Interest on long-term receivables (Note 6)	10,298	11,360
Interest on investments and other (Note 4)	288	124
	458,223	439,558
Funding	400 =40	0.40.000
Parliamentary appropriations (Note 13)	408,510	346,000
_	408,510	346,000
Expenses  Cost of color and an expting average.	650.046	000 000
Cost of sales and operating expenses	653,316	889,922
	653,316	889,922
Commercial Operations net income (loss) before Product Development	213,417	(104,364)
Investment in Product Development		
Parliamentary appropriations (Note 13)	40,310	28,994
Development costs	(40,492)	(28,994)
Recognition of deferred development funding (Note 10)	204,752	_
Impairment of intangible assets (Note 9)	(204,752)	
Commercial Operations net income (loss)	213,235	(104,364)
Nuclear Laboratories		
Research and Technology Operations		
Revenue	49,792	32,861
Funding		
Funding  Parliamentary appropriations (Note 12)	292,926	299,566
Parliamentary appropriations (Note 13)  Cost recovery from third parties and other	14,450	7,372
Amortization of deferred capital funding (Note 10)	7,196	4,679
/ Amortization of deferred capital funding (Note 10)	314,572	311,617
Expenses	314,372	311,017
Cost of sales and operating expenses	385,721	359,297
Interest on long-term payables (Note 11)	1,062	1,551
,	386,783	360,848
Pagazzeh and Tachnology Operations not loss before Dedicated Isotopa Escilitios	· · · · · · · · · · · · · · · · · · ·	
Research and Technology Operations net loss before Dedicated Isotope Facilities	(22,419)	(16,370)
Dedicated Isotope Facilities	22 602	21,198
Parliamentary appropriations (Note 13)  Expenses	33,693 21,444	9,430
Research and Technology Operations net loss	(10,170)	(4,602
Tiescaron and Teenhology Operations her 1033	(10,170)	(4,002
Liability Management Unit		
Funding (Note 13)		
Decommissioning funding	125,804	114,656
	125,804	114,656
Expenses (Note 12)		
Revision in estimate and timing of expenditures	236,257	(72,485
Accretion and other expenses	152,910	158,034
	389,167	85,549
	(263,363)	29,107
Liability Management Unit net (loss) income	(200,000)	
Nuclear Laboratories net (loss) income	(273,533)	24,505

Amortization disclosure (Note 8 and Note 9)

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

# CONSOLIDATED STATEMENT OF CHANGES IN SHAREHOLDER'S DEFICIT

For the year ended March 31

	CAPITA	

(thousands of dollars)		2011		2010
Balance at beginning of the year	\$	350,872	\$	378,629
Transfer to deferred decommissioning funding (Note 16)		(21,862)		(24,501)
Transfer to repayable contributions (Note 16)		(3,477)		(3,256)
Balance at end of the year	\$	325,533	\$	350,872
DEFICIT				
(thousands of dollars)		2011		2010
Balance at beginning of the year	\$ (3,724,501)		\$ (3,644,642)	
Net loss	(60,298)		(79,859)	
Balance at end of the year	\$ (3,784,799)		\$ (3,724,501)	
ACCUMULATED OTHER COMPREHENSIVE INCOME				
(thousands of dollars)		2011		2010
Balance at beginning of the year	\$	_	\$	99
Other comprehensive income (loss) for the year		_		(99)
Balance at end of the year (Note 19)	\$	_	\$	_
Capital stock		15,000		15,000
Total Shareholder's Deficit	\$(	(3,444,266)	\$ (	3,358,629)

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

# **CONSOLIDATED STATEMENT OF COMPREHENSIVE LOSS**

For the year ended March 31

(thousands of dollars)	2011	2010
Net loss	\$ (60,298)	\$ (79,859)
Other comprehensive income (loss)		
Net loss on derivatives designated as cash flow hedges	_	(198)
Reclassification to income of gains on derivatives designated as cash flow hedges	_	99
Other comprehensive loss	_	(99)
Comprehensive loss	\$ (60,298)	\$ (79,958)

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

# **CONSOLIDATED CASH FLOW STATEMENT**

For the year ended March 31

(thousands of dollars)		2011		2010
Operating activities				
Cash receipts from customers	\$ 38	82,058	\$	501,431
Cash receipts from Parliamentary appropriations	7	97,819		658,879
Cash receipts for decommissioning and waste management activities	1	18,107		113,324
Cash paid to suppliers and employees	(1,1)	79,859)	(	(1,158,373)
Funds used for decommissioning activities	(1:	25,895)		(114,725)
Interest received on investments (net)		288		124
Cash (used in) from operating activities		(7,482)		660
Investing activities				
Investment in ACR-1000		_		(79,100)
Acquisition of property, plant and equipment and software	(3	39,074)		(49,908)
Cash used in investing activities	(:	39,074)		(129,008)
Financing activities				
Proceeds from Government of Canada for capital funding		17,286		53,979
Proceeds from Government of Canada for capitalized development funding		_		89,006
Cash from financing activities		17,286		142,985
Cash and cash equivalents:				
(Decrease) increase	(2	29,270)		14,637
Balance at beginning of the year		47,833		33,196
Balance at end of the year	\$	18,563	\$	47,833
Supplemental disclosure of cash flow information				
Interest and bank charges paid during the year	\$	54	\$	57

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

# **NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**

For the year ended March 31, 2011

# 1. THE CORPORATION

Atomic Energy of Canada Limited (collectively AECL or the Corporation) 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* and an agent of Her Majesty the Queen in Right of Canada. As a result, AECL's liabilities are ultimately liabilities of Her Majesty in Right of Canada. The Corporation receives funding from the Government of Canada and is exempt from income taxes in Canada.

AECL conducts its business through two distinct entities: Commercial Operations and Nuclear Laboratories. These entities represent strategic business units established by senior management to facilitate the achievement of the Corporation's long-term objectives, to aid in resource allocation decisions and to assess operational and financial performance. Nuclear Laboratories includes the Liability Management Unit, which has the responsibility to manage the decommissioning and waste management liability on behalf of the Government of Canada.

# 2. RESTRUCTURING AND CORPORATE PLAN

In November 2007, the Corporation's Shareholder announced that it would initiate a review of AECL to determine whether AECL's structure as a Crown corporation best equips it, its employees and ultimately the Canadian nuclear industry, to participate fully in the expanding global nuclear market. The review was conducted by the AECL Review Team at Natural Resources Canada, in consultation with the Department of Finance and the Department of Justice, and with the collaboration of AECL and external financial advisors.

In May 2009, the Shareholder announced its decision to move forward with a restructuring of AECL, noting the distinct mandates, resource and management needs of Commercial Operations and Nuclear Laboratories. Financial advisors were engaged to develop a restructuring plan and to provide external financial advice.

In December 2009, the Shareholder invited investors to submit proposals for AECL's Commercial Operations, in order to restructure the Corporation. Proposals have been assessed based on how well they meet set objectives, including: ensuring that Canadians have nuclear as a safe, reliable, economic and clean energy option; controlling costs to the Government of Canada while maximizing the return on the taxpayers' investment; and positioning the nuclear industry in Canada to seize domestic and global opportunities. AECL management is supporting the process. Ultimate sale of all or a portion of the Commercial Operations is at the discretion of the Shareholder.

Prior to the close of the fiscal year, the Corporation submitted its 2010–2011 to 2014–2015 Corporate Plan to the Government of Canada. At time of publication, the Corporate Plan was awaiting Governor in Council approval. The Corporate Plan and these financial statements have been prepared without making any assumptions as to the outcomes of the restructuring. As such, they do not contemplate any significant changes to AECL's existing activities. Should Government of Canada decisions with respect to AECL's restructuring affect the Corporation's structure, mandate or future financial situation, there may be a need to revisit the strategies outlined in that Plan and the related financial statement presentation (Note 3).

AECL's Nuclear Laboratories, which includes the Chalk River Laboratories, is not included in the sale process. The Shareholder has indicated it will make a decision at a later date on the best management structure for that entity.

# 3. SIGNIFICANT ACCOUNTING POLICIES

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

### a) Basis of Presentation

These consolidated financial statements include the accounts of the Corporation's wholly-owned subsidiaries, AECL Technologies Inc., incorporated in the state of Delaware, U.S.A. in 1988, AECL Technologies B.V., incorporated in the Netherlands in 1995, and its interest in a Trust Fund for which the Corporation is the primary beneficiary. All inter-company transactions have been eliminated. The operating cycle, or duration, of many of the company's construction contracts exceeds one year. All contract-related assets and liabilities of such contracts are classified as current, as they are expected to be realized or satisfied within one operating cycle.

In addition, the Corporation's financial statements do not include any adjustments that would be required to the carrying values of the assets and liabilities, the reported net income/loss for the year, and the balance sheet classification if it was determined at a future date that any of the existing activities of the Corporation would meet the criteria to be classified as held for sale. The application of such criteria would require that the assets and liabilities be written down to the lower of carrying value and fair value less costs to sell and such a write-down may be material and would depend on market conditions on the date such criteria were met.

# b) Use of Estimates

The Corporation's financial statements include estimates and assumptions made by management that affect the amounts reported in the financial statements and accompanying notes. Estimates are based on a number of factors, including historical experience, current events and actions that the Corporation may undertake in the future, and other assumptions that management believes are reasonable under the circumstances.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods, if the revision affects both current and future periods.

Some estimates require a high level of judgment. Significant areas of judgment and estimates are: valuation of heavy water inventory, costs of future decommissioning and waste management, future contract costs, revenue, fair value of derivatives, provisions, employee future benefits provision, research and development costs, and amortization of property, plant and equipment and intangible assets. Actual results may materially differ from these estimates.

Management bases its estimate of contract revenues and costs on the latest available information, which includes detailed contract valuations. In many cases, the results reflect the expected outcome of long-term contractual obligations which span more than one reporting period. Contract revenues and costs are affected by a variety of uncertainties that depend on the outcome of future events and often need to be revised as events unfold and uncertainties are resolved. The impact of the changes in accounting estimates is then reflected in the ongoing results.

The most significant judgments and estimates impacting revenue recognition are required for the four fixed-price contracts in which the Corporation is completing the life extension of existing CANDU reactors. The accuracy of the Corporation's revenue and Consolidated Statement of Operations in a given period is largely dependent on the accuracy of its estimates of the cost to complete each of these projects. There are a number of factors that can contribute to changes in estimates of contract cost and profitability. The most significant of these include the completeness and accuracy of the original bid, costs associated with added scope changes, complex technical issues arising from the nature of these first-of-a-kind projects, subcontractor performance issues, changes in productivity expectations, site conditions that differ from those assumed in the original bid (to the extent contract remedies are unavailable) and the availability and skill level of workers in the geographic location of the project. Incorporated in the Corporation's forecasts are the best estimates of the financial impact of these project uncertainties prior to their resolution which may vary materially from the actual amounts realized. Substantial changes in cost estimates, particularly in these larger, more complex projects have had, and can in future periods have, a material effect on the Corporation's Consolidated Statement of Operations.

When accounting for provisions for litigation and other items, the Corporation has taken internal and external advice in considering known legal claims made by or against the Corporation. It carefully assesses the likelihood of success of a claim or action. Appropriate provisions are made for legal claims or actions against the Corporation on the basis of likely outcome, but no provisions are made for those which in the view of management are unlikely to succeed or cannot be reliably determined.

#### c) Cash and Cash Equivalents

Investments with maturities of 90 days or less from the date of purchase are presented as cash equivalents. Cash equivalents are recorded at fair value on the date of trade.

# d) Trust Fund

Long-term investments in the Trust Fund established pursuant to the *Nuclear Fuel Waste Act* are measured at fair value on the date of trade. Interest earned is netted against Accretion and Other expenses on the Consolidated Statement of Operations since the Decommissioning and Waste Management provision includes the obligations under the *Act*.

### e) Foreign Currency Translation

Transactions denominated in a foreign currency are translated into Canadian dollars at the exchange rate in effect at the transaction date. 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.

# f) Financial Instruments

#### **Derivative Financial Instruments**

From time to time, the Corporation enters into foreign exchange forward contracts with major financial institutions to manage its exposure to changes in exchange rates arising from contractual terms and ongoing business operations. The Corporation's policy precludes it from using derivative financial instruments for trading or speculative purposes. All derivative instruments are recorded on the Consolidated Balance Sheet at fair value. Derivatives with a positive fair value are included in Accounts receivable and unbilled revenue and derivatives with a negative fair value are included in Accounts payable and accrued liabilities.

#### Comprehensive Income

Comprehensive income consists of net income and other comprehensive income (OCI). This category includes changes in the fair value of the effective portion of cash flow hedging instruments. Amounts are recorded in OCI until the criteria for recognition in the Consolidated Statement of Operations are met.

#### Recognition and Measurement

The following table presents the classification of AECL's financial instruments into various categories:

Category	Financial Instruments
Financial assets and liabilities held for trading	Cash and cash equivalents
	Trust fund
Financial assets held to maturity	• None
Available for sale financial assets	• None
Loans and receivables	Accounts receivable and unbilled revenue
	<ul> <li>Long-term receivables</li> </ul>
Other financial liabilities	Accounts payable and accrued liabilities
	<ul> <li>Customer advances and obligations</li> </ul>
	<ul> <li>Provisions</li> </ul>
	<ul> <li>Long-term payables</li> </ul>

Loans and receivables and other financial liabilities are recorded at fair value upon initial recognition and are subsequently carried at amortized cost using the effective interest method. Accounts receivable are reviewed on an invoice by invoice basis to establish the provision for bad debts.

Financial assets and liabilities held for trading are recorded at fair value at the Balance Sheet date based on instruments with quoted market prices. Gains and losses arising from changes in fair value are recognized in revenue and/or cost of sales and operating expenses for the period in which they occur, except in the case of derivative instruments designated as hedges in a cash flow hedging relationship (as discussed below). Transaction costs are expensed as incurred for financial instruments classified or designated as held for trading.

AECL classifies the investment in the *Nuclear Fuel Waste Act* Trust Fund as held for trading as the Fund Manager is permitted to trade within the approved investment guidelines to generate adequate returns.

The Corporation formally documents all relationships between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives to specific assets and liabilities on the Consolidated Balance Sheet or to specific firm commitments or forecasted transactions. The Corporation also formally assesses, both at the hedge's inception and on an ongoing basis, whether the derivatives that are used in hedging transactions are effective in offsetting changes in fair values or cash flows of hedged items.

Hedge accounting is applied when a derivative instrument is designated as a hedge and is expected to be effective throughout the life of the hedged item. The effective portion of the change in fair value of such a derivative instrument is recorded in OCI while the ineffective portion is recognized immediately in net income. Any unrealized gain or loss on effective foreign exchange hedges is recognized in OCI. Any ineffective portion of the unrealized gain or loss on hedging is recognized immediately in net income. When a derivative hedging relationship expires, the designation of a hedging relationship is terminated, or a portion of the hedging instrument is no longer effective, any associated gains or losses included in accumulated other comprehensive income (AOCI) are recognized in the current period's Consolidated Statement of Operations under Cost of sales and operating expenses. AECL only undertakes cash flow hedges.

### g) Inventory

Heavy water, supplies and reactor fuel are valued at the lower of weighted average cost and net realizable value.

# h) Property, Plant and Equipment

Property, plant and equipment are recorded at cost less amortization. Construction in progress is not amortized until ready for use. When complete, the constructed asset is transferred to the appropriate category and amortized at the rate applicable to that category. Asset retirement costs are included as part of the related asset costs. Amortization is provided 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:

Land improvements10 to 20 yearsBuildings and reactors20 to 40 yearsMachinery and equipment3 to 20 years

### i) Impairment of Long-Lived Assets

AECL reviews long-lived assets, including Property, Plant and Equipment and Intangible Assets, whenever events or changes in circumstances indicate that the carrying amount of such assets may not be fully recoverable. An impairment loss, if any, is recognized when the carrying amount of a long-lived asset is not recoverable and exceeds its fair value. Determination of recoverability is based on an estimate of undiscounted future cash flows. Fair value is calculated using an expected present value technique.

# j) Customer Advances and Obligations and Unbilled Revenues

Certain contracts may have revenue recognized in excess of billings (unbilled revenues), and other contracts may have billings in excess of revenue recognized (customer advance payments). Unbilled revenues are recorded as an asset and included in accounts receivable. Billings collected in excess of revenue recognized on contracts are recorded as a liability and recognized in accordance with the Corporation's revenue recognition policy.

# k) Decommissioning and Waste Management Provision

AECL provides for its legal obligation to decommission nuclear facilities and to manage nuclear waste in order to satisfy regulatory requirements. The obligation is recognized at fair value in the period when a reasonable estimate can be determined. As the provision is recorded based on a discounted value of the projected future cash flows, it is increased annually to reflect the passage of time by removing one year's discount. The accretion is charged to expense in the Consolidated Statement of Operations.

The provision is reduced by actual expenditures incurred. The cost estimate is subject to periodic review and any material changes in the estimated amount or timing of the underlying future cash flows are recorded as an adjustment to the provision. Upon settlement of the liability, a gain or loss will be recorded. The provision includes future construction and operating costs associated with certain enabling facilities, such as disposal facilities for nuclear waste.

Decommissioning costs of new assets are added to the carrying amount and amortized over the related assets' useful life.

## I) Revenue Recognition

#### Long-Term Contracts and Service Contracts

Revenue is derived from sales of the Corporation's services and products to clients. Revenue under certain long-term contracts, many of which provide for periodic payments, is recognized under the percentage-of-completion method using the ratio of costs incurred to total estimated costs as the measure of performance. When adjustments in contract value or estimated costs are determined, any changes from the prior estimates are generally reflected in income in the current period. Anticipated losses on contracts are charged to income when identified and determined to be likely. Penalties, including penalties for late delivery, are recorded as a reduction of total contract revenue in the period in which the determination is made. Amounts for claims against customers are recognized when determinable and realization is likely. Revenue under cost-reimbursement contracts is recorded as costs are incurred and include an estimate of fees earned. Revenue under all other contracts is recognized when services are performed.

#### Supply of Product

Revenue is recognized when the product is shipped to the customer.

#### Interest Revenue

Interest entitlement under a long-term receivable is recognized as revenue over the term of the related agreement.

# m) Research and Development and Intangible Assets

Research and development costs include direct and indirect costs associated with research and development activities, including; salaries, wages and other personnel-related costs; the cost of materials and services consumed; amortization of equipment and facilities; overhead support costs; and other costs such as amortization of patents and licences.

Research expenses are expensed as incurred. Development charges are expensed unless they meet the following criteria for capitalization: the product or process is clearly defined and the attributable costs are reliably identifiable and measurable; technical feasibility of the product or process has been established; management intends to produce and either market or use the product or process; a market for the product or process is clearly defined or its usefulness to the enterprise has been established; and adequate resources exist, or are expected to be available, to complete the project. When recognized and the development phase is complete, development costs are amortized on a straight-line basis over their estimated useful life.

Management monitors the progress of internal research and development projects. However, distinguishing between research and development phases and costs requires a detailed analysis.

Research and development costs incurred to discharge long-term waste management and decommissioning obligations for which specific provisions have already been made are charged against the related liability.

Software costs are capitalized when the recognition criteria for intangible assets are met. Amortization is provided on a straight-line basis over the estimated useful life of the asset, which is three years.

# n) 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 that appropriations used for the purchase of property, plant and equipment or development costs are recorded as deferred capital funding or deferred development funding and amortized on the same basis as the related asset. From 1997 to 2006, and pursuant to the 10-year arrangement for funding decommissioning activities, the Corporation retained cash proceeds from the sale or lease of the portion of heavy water inventory that was funded by the Government of Canada. The cash proceeds were transferred from contributed capital to deferred decommissioning funding and were then recorded as funding in the Consolidated Statement of Operations as related expenditures were incurred. Proceeds from sales made during the 10-year arrangement that are received after April 1, 2006 are transferred from contributed capital to deferred decommissioning funding.

# o) Cost Recovery from Third Parties

AECL operates the Low-Level Radioactive Waste Management Office and Port Hope Area Initiative Management Office through Nuclear Laboratories on a cost-recovery arrangement with Natural Resources Canada. Costs recovered under these arrangements are recorded as cost recovery from third parties and are recognized as the related expenses are incurred.

# p) Pension Plan

Employees of the Corporation participate in the Public Service Pension Plan (PSPP) administered by the Government of Canada. Although the PSPP is a defined benefit plan, the Corporation is not required under present legislation to make contributions with respect to actuarial deficiencies of the Plan. Therefore, contributions to the Plan are limited to those made by the employees and the Corporation on account of current service. These contributions represent the total pension obligations of the Corporation and are expensed in the Consolidated Statement of Operations on a current basis.

# q) Other Employee Future Benefits

The Corporation provides certain termination benefits for current employees pursuant to collective agreements and conditions of employment. Other benefits include workers' compensation claims for which the Corporation reimburses Human Resources and Social Development Canada in accordance with the *Government Employees Compensation Act* for current payments billed by the provincial compensation boards.

The Corporation accrues the cost of these employee future benefits over the periods in which the employees earn the benefits. The cost of employee future benefits earned by employees is determined using the Unit Credit Actuarial cost method prorated on length of service and management's best estimate of salary escalation, retirement ages of employees and expected employee turnover.

# r) Variable Interest Entities

A variable interest entity (VIE) is an entity in which the equity invested is not sufficient to permit that entity to finance its activities without external support, or, an entity in which the equity investors lack voting control, an obligation to absorb future losses, or the right to receive future returns. The primary beneficiary of a VIE is the enterprise that will absorb a majority of the VIE's expected losses, receive a majority of its expected returns, or both. The Corporation has examined its business arrangements and has concluded that there is no significant interest in VIEs with the exception of the Trust Fund, which has been consolidated.

# s) Future Changes in Accounting Policies

#### Adoption of International Financial Reporting Standards in Canada

As a result of amendments to the scope of public sector accounting standards approved by the Public Sector Accounting Board (PSAB) in October 2009, AECL is required to select between IFRS or Public Sector Accounting Standards as the most appropriate basis of accounting for the 2012 fiscal year and beyond. Due to the commercial nature of some of its business, AECL has determined that IFRS is the more appropriate basis. AECL has an internal team dedicated to the conversion to IFRS and, effective April 1, 2011, AECL's financial statements will be prepared in accordance with IFRS. The fiscal 2012 financial statements will include comparative figures and the April 1, 2010 opening balance sheet will be restated to conform with IFRS.

#### Treasury Board "Standard on Quarterly Financial Reports for Crown Corporations"

The Treasury Board "Standard on Quarterly Financial Reports for Crown Corporations" (the "Standard") takes effect April 1, 2011 and will require AECL to publish its results for the quarter ended June 30, 2011 with comparative data. The implementation date for this new requirement aligns with AECL's adoption of IFRS. Pursuant to Treasury Board guidelines issued on March 17, 2011, AECL will elect not to follow IAS 34, "Interim Financial Reporting," with respect to the content of the report. Instead, AECL will produce its report in accordance with the Standard's "Form and Content" disclosure requirements, with an overall objective to ensure its quarterly financial reports are timely and consistent in support of effective oversight of public funds.

# 4. CASH AND CASH EQUIVALENTS

Bank deposits are maintained at levels required to meet daily operating needs. Surplus deposits, if any, are invested in the short-term money market. The investing strategy is based on a conservative risk assessment. All instruments are rated as R1 Low or higher by the Dominion Bond Rating Service and as A1 or higher by Standard and Poor's.

Based on an agreement with the Shareholder, AECL is required to segregate proceeds from Government of Canada-funded heavy water sales for the purpose of settling decommissioning liabilities covered under the Nuclear Legacy Liabilities Program. In the past few years, AECL received authority from the Shareholder to borrow from restricted cash to fund operations. This authority was provided through the approval of the Corporate Plan, as management stated its intention to use the funds for purposes other than decommissioning activities. AECL utilized most of this cash in current and prior years. As the 2010–2011 Corporate Plan has not yet been approved, AECL has not received a continuance of its authority to borrow and utilize these funds for operations. Should explicit permission not be received, the cumulative potentially refundable amount of \$123 million is greater than cash on hand of \$19 million.

(thousands of dollars)	2011	Yield	2010	Yield
Cash and cash equivalents*	\$ 18,563	0.6%	\$ 47,833	0.2%

<sup>\*</sup>There were no short-term investments held at March 31, 2011 or at March 31, 2010.

# 5. INVENTORY

(thousands of dollars)	2011	2010
Reactor fuel	\$ 14,698	\$ 17,171
Spare parts and store supplies	14,284	13,194
	\$ 28,982	\$ 30,365
Heavy water inventory	290,974	291,701
	\$ 319,956	\$322,066

Reactor fuel inventory costs include an allocation of overhead.

The cost of reactor fuel, spare parts and store supplies inventory is recognized as an expense and is included in Cost of sales and operating expenses. It amounts to \$23 million (2010 – \$18 million). There were no material write-downs of inventory in 2011.

In addition to internal consumption of heavy water at the Chalk River Laboratories, the cost of inventory for heavy water recognized as an expense and included in Cost of sales and operating expenses was \$0.3 million (2010 – \$0.7 million). There were no material write-downs of heavy water in 2011.

AECL had no reversals of write-downs and no inventory pledged as security for liabilities in 2011.

# **6. LONG-TERM RECEIVABLES**

(thousands of dollars)	2011	2010
Contract receivables from customers in respect of the financing of products and services,		
maturing through 2019 at fixed repayment amounts	\$ 169,918	\$189,252
Current portion	(20,141)	(19,028)
	\$ 149,777	\$170,224

The long-term receivable is primarily related to heavy water sales in previous years. Required repayment amounts are recorded as operating activities on the Consolidated Cash Flow Statement and are due as follows:

(thousands of dollars)	
2012	\$ 20,141
2013	21,319
2014	22,566
2015	23,886
2016	25,283
Subsequent to 2016	56,723
	\$ 169,918

# 7. TRUST FUND

The *Nuclear Fuel Waste Act* (the "Act") requires Canadian nuclear utilities to form a waste management organization, the Nuclear Waste Management Organization, to provide recommendations to the Government of Canada 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 in order to meet the requirements of the *Act* and only the Nuclear Waste Management Organization may withdraw monies from it in accordance with the provisions of the *Act*. As required by the *Act*, AECL's initial deposit to its Trust Fund was \$10 million on November 25, 2002. Subsequent annual deposits of approximately \$2 million have been made as required. This will continue until the obligation ceases or the amount is modified by the Government of Canada once certain requirements stipulated in the *Act* are met by the Nuclear Waste Management Organization.

The Trust Fund, managed by CIBC on behalf of AECL, invests in fixed income instruments with various maturities. The fund has been recorded as a long-term asset and measured at fair value. Interest earned on trust assets accrues to the Trust Fund and is fixed, whereas the fair values of the instruments vary according to the prevailing market rate of interest. Therefore, yield on the instruments is variable. Interest earned from the fund offsets accretion expense related to the decommissioning and waste management provision. Quoted market values of the instruments are estimated at \$34.9 million as at March 31, 2011 (2010 – \$29.7 million). These investments are comprised of the following:

(thousands of dollars)	Maturities	2011	Yield	2010	Yield
Short-term					
Cash and cash equivalents*	Not applicable	\$ 1,940	0.0%	\$ 6	0.0%
Corporate bonds	May 2011	502	4.4%	1,780	3.0%
		\$ 2,442		\$ 1,786	
Long-term					
Canadian government bonds**	April 2012 – December 2025	\$ 26,455	4.0%	\$ 22,610	4.2%
Corporate bonds Jur	June 2012 - January 2017	6,042	3.6%	5,275	3.8%
		\$ 32,497		\$ 27,885	
		\$ 34,939		\$ 29,671	

<sup>\*</sup>Cash and cash equivalents include cash and short-term money market instruments

 $<sup>\</sup>hbox{^{**}Canadian government bonds include federal, provincial and municipal bonds}$ 

# 8. PROPERTY, PLANT AND EQUIPMENT

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	2011			2010	
Cost	Accumulated Amortization	Net Book Value	Cost	Accumulated Amortization	Net Book Value
\$ 3,291	<b>\$</b> —	\$ 3,291	\$ 4,198	\$ -	\$ 4,198
1,536	292	1,244	1,174	273	901
23,894	14,653	9,241	19,888	14,402	5,486
38,453	25,730	12,723	36,526	24,771	11,755
67,174	40,675	26,499	61,786	39,446	22,340
50,714	_	50,714	53,847	_	53,847
50,081	29,859	20,222	47,019	28,279	18,740
243,394	166,457	76,937	236,451	163,018	73,433
329,922	265,056	64,866	317,202	254,202	63,000
674,111	461,372	212,739	654,519	445,499	209,020
\$ 741,285	\$ 502,047	\$ 239,238	\$ 716,305	\$ 484,945	\$ 231,360
	\$ 3,291 1,536 23,894 38,453 67,174 50,714 50,081 243,394 329,922 674,111	**Solution**  **Accumulated Amortization**  **3,291	Cost         Accumulated Amortization         Net Book Value           \$ 3,291         \$ -         \$ 3,291           1,536         292         1,244           23,894         14,653         9,241           38,453         25,730         12,723           67,174         40,675         26,499           50,714         -         50,714           50,081         29,859         20,222           243,394         166,457         76,937           329,922         265,056         64,866           674,111         461,372         212,739	Cost         Accumulated Amortization         Net Book Value         Cost           \$ 3,291         \$ -         \$ 3,291         \$ 4,198           1,536         292         1,244         1,174           23,894         14,653         9,241         19,888           38,453         25,730         12,723         36,526           67,174         40,675         26,499         61,786           50,714         -         50,714         53,847           50,081         29,859         20,222         47,019           243,394         166,457         76,937         236,451           329,922         265,056         64,866         317,202           674,111         461,372         212,739         654,519	Cost         Accumulated Amortization         Net Book Value         Cost         Accumulated Amortization           \$ 3,291         \$ -         \$ 3,291         \$ 4,198         \$ -           1,536         292         1,244         1,174         273           23,894         14,653         9,241         19,888         14,402           38,453         25,730         12,723         36,526         24,771           67,174         40,675         26,499         61,786         39,446           50,714         -         50,714         53,847         -           50,081         29,859         20,222         47,019         28,279           243,394         166,457         76,937         236,451         163,018           329,922         265,056         64,866         317,202         254,202           674,111         461,372         212,739         654,519         445,499

Amortization of property, plant and equipment for the year ended March 31, 2011 was \$18.4 million (2010 - \$14.9 million).

The Corporation reviewed the net recoverable amount of property, plant and equipment. As a result of the review, no impairment charges were recorded in 2011 or 2010.

9. INTANGIBLE ASSI	15						
(thousands of dollars)			2011			2010	
		Cost	Accumulated Amortization		Cost	Accumulated Amortization	Net Book Value
ACR-1000 development	\$	_	\$ -	·	\$175,349	\$ —	\$ 175,349
Software		10,101	7,494	2,607	10,101	5,410	4,691

2,607

7,494

\$185,450

5,410

\$ 180,040

AECL's research and development activities are undertaken to maintain and enhance Canada's scientific and technological expertise in support of the production of environmentally friendly and cost effective CANDU nuclear-generated electricity, as well as other important peaceful nuclear technologies such as nuclear medicine. In particular, they involve the maintenance of intellectual property developed over the years. This includes basic knowledge of materials, reactor physics, chemistry, critical components, radiation and the environment, which could have an impact on the safety, licensing and design basis of CANDU technology. Additionally, it includes advancement of the economics, safety and operating performance of the existing product line and applying advancements to future technologies.

Development costs that meet the criteria for capitalization are capitalized, and the remaining development costs, along with all research activities, are expensed in the Consolidated Statement of Operations. There were no development costs that met the criteria for capitalization at the end of 2011 (2010 – \$79.1 million). The determination of qualifying development costs is subject to ongoing review.

Commercial research and development costs incurred by Commercial Operations were \$72.5 million (2010 – \$114.3 million). Nuclear Laboratories expended \$58.2 million (2010 – \$58.8 million) on CANDU technology research and development costs while the Facilities, nuclear operations and support costs were \$311.2 million (2010 – \$301.5 million).

Amortization of software for the year ended March 31, 2011 was \$2.1 million (2010 - \$1.6 million).

10,101

#### Impairment

As at March 31, 2010, \$175.3 million was capitalized with respect to ACR-1000 development costs. Additional costs of \$29.5 million were capitalized during the period between April 1, 2010 and December 31, 2010. As a result of uncertainty in realizing cash flows from the Corporation's investment in the Generation III+ reactor, AECL reviewed the recoverability of the ACR-1000 development costs. Effective January 1, 2011, an impairment charge of \$204.8 million was identified to reduce the carrying amount to zero. Further development costs of \$5.1 million were expensed as incurred between January 1, 2011 and March 31, 2011.

\$ 175.348

(204,752)

# 10. DEFERRED FUNDING

The Corporation recognized funding of \$17.2 million (2010 – \$47.1 million) from the Government of Canada in 2011 for capital infrastructure refurbishment projects at the Chalk River facilities. Deferred capital funding and deferred development funding are provided to the Corporation through appropriations from its shareholder. In 2011, as a result of the write-down of ACR-1000 development costs, \$204.8 million in deferred development funding was recognized in income.

### Deferred capital funding

(thousands of dollars)	2011	2010
Deferred capital funding, opening balance	\$ 147,002	\$ 104,615
Capital funding recognized during the year (Note 13)	17,167	47,066
Amortization of deferred capital funding	(7,196)	(4,679)
Deferred capital funding, closing balance	\$ 156,973	\$ 147,002
Deferred development funding		
(thousands of dollars)	2011	2010
Deferred development funding, opening balance	\$ 175,348	\$ 96,255
Development funding recognized during the year (Note 13)	29,404	79,093

Development funding recognized in income as a result of intangible assets impairment (Note 13)

(thousands of dollars)	2011	2010
Long-term payable	\$ 19,348	\$ 31,608
Unsecured, non interest bearing, maturing September 2012		
Amount is recorded net of discount of \$0.6 million at 4.08%		
	19,348	31,608
Less current portion	(13,319)	(13,319
	\$ 6,029	\$ 18,289
Required payments over subsequent years are as follows:		
(thousands of dollars)		
2012		\$ 13,319
2013		6,660
		\$ 19.979

Long-term payables relate to inventory purchased from MDS (Canada) Inc. in February 2006. AECL entered into an agreement with MDS (Canada) Inc. whereby AECL acquired beneficial ownership of the Dedicated Isotope Facilities, comprised of two reactors (MAPLE 1 and 2) and their related processing facility. Additionally, AECL acquired \$53 million of isotope production-related inventory with a deferred payment obligation of 48 monthly installments of \$1.1 million, commencing in October 2008. The value of the inventory and the related deferred obligation were recorded at \$41.7 million (Fuel and Targets), and \$2.5 million (Spare parts), the present value of these future payments.

Imputed interest expense of \$1.1 million (2010 – \$1.6 million), related to the discount on the long-term payable, was expensed in the Consolidated Statement of Operations. Required payments are disclosed at the undiscounted amount.

# 12. DECOMMISSIONING AND WASTE MANAGEMENT PROVISION

AECL has an obligation to decommission its nuclear facilities and other assets in order to satisfy CNSC and other applicable regulations. These facilities include prototype reactors, heavy water plants, nuclear research and development, waste management and other facilities. 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. These activities include surveillance and monitoring, decontamination, demolition and the management of the associated waste. A significant portion of the obligation relates to liabilities that were incurred prior to the creation of AECL in 1952.

The estimated future decommissioning and waste management 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 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, market based premium, interest rate estimates, inflation factors, and the impact of technological advances. Another important assumption is that the liability reflects the 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 decommissioning and waste management provision.

The decommissioning plan follows a hierarchy of activities to achieve:

- · A controlled and controllable state for all redundant nuclear facilities that removes short-term risks.
- · A sustainable, stable and safe state of the facilities under surveillance.
- 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 decommissioning plan projects undiscounted expenditures of \$7,201.8 million (in current dollars) until 2070. The discount and inflation rates used to calculate the present value of the provision, at the time the plan was implemented, were 5.25% and 1.7%, respectively. In accordance with the requirements of CICA Handbook Section 3110 "Asset Retirement Obligations," increased estimates resulting from new liabilities or increases in the spending profile are discounted using the current rate of 3.74% while decreases use a blended rate of 5.04%.

The decommissioning and waste management provision is as follows:

(thousands of dollars)	2011	2010
Opening balance	\$ 3,084,899	\$ 3,099,745
Liabilities settled	(126,516)	(111,129)
Accretion expense	153,899	158,206
Revision in estimate and timing of expenditures	236,257	(72,485)
Revision in estimate and timing of expenditures affecting Property, plant and equipment	687	2,272
Waste, decommissioning and site restoration costs from ongoing operations	7,820	8,290
	3,357,046	3,084,899
Less current portion	(136,900)	(131,200)
	\$ 3,220,146	\$ 2,953,699

The revision in estimate and timing of expenditures fluctuates every reporting period due to changes in accounting estimates for projected costs. The increase in 2011 mainly resulted from increases in projected costs and cash expenditures relating to projects at decommissioning sites. Also contributing to the increase was an extensive review of several decommissioning projects as a result of preparing a five-year plan as required by Natural Resources Canada under the Nuclear Legacy Liabilities Program.

The Government of Canada will continue to provide funding for the Nuclear Legacy Liabilities Program over the next three years. Prior to establishment of the program, AECL retained proceeds from heavy water sales to fund the decommissioning program (Note 16). The Government of Canada requires AECL to account for waste, decommissioning or site restoration liabilities resulting from AECL's ongoing operations after April 1, 2006. An amount of \$52.1 million is included in the closing decommissioning and waste management provision (2010 – \$38.1 million).

# 13. FUNDING

# a) Parliamentary Appropriations

AECL segregates its Parliamentary appropriations to ensure funds are spent in a manner consistent with the basis for which they were approved. Although \$815 million was received in the current year (2010 – \$802 million), \$793 million has been recognized (2010 – \$822 million), with the difference recorded as an adjustment to the amount Due to Shareholder included in provisions.

(thousands of dollars)	2011	2010
Operating funding		
Nuclear Laboratories		
Research and related infrastructure	\$ 144,425	\$ 154,885
Dedicated Isotope Facilities	33,693	21,198
Chalk River Laboratories regulatory, health, safety, security and environment initiatives	106,939	72,681
NRU return to service	41,562	72,000
	326,619	320,764
Commercial Operations		
Working Capital	\$ 408,510	\$346,000
EC6 and ACR-1000 development	40,310	28,994
	448,820	374,994
Total operating funding	\$ 775,439	\$ 695,758
Capital funding		
Capital infrastructure refurbishment project funding	\$ 17,167	\$ 47,066
ACR-1000 development	29,404	79,093
ACR-1000 impairment	(29,404)	_
Total capital funding	\$ 17,167	\$ 126,159
Total funding	\$ 792,606	\$ 821,917

Research and related infrastructure funding is the base operating funding for AECL's Chalk River Laboratories.

During the year, AECL received \$34 million (2010 – \$25 million) from the Government of Canada to meet contractual obligations and defend contractual rights associated with the Dedicated Isotope Facilities.

Chalk River Laboratories regulatory, health, safety, security and environment initiatives funding includes the revitalization of AECL's Chalk River Laboratories and the maintenance of isotope production at the NRU reactor.

NRU return to service funding includes the cost of repairing the NRU reactor, returning it to service, and replacing lost margins from forgone isotope sales during its outage.

Working Capital funding is used to meet operational requirements and contractual obligations, including shortfalls in the life extension projects.

EC6 and ACR-1000 development funding is used for research and development activities relating to new-build reactor technology development.

# b) Other Funding

Amounts received from other government entities for execution of work performed on service contract agreements and invoiced in a manner similar to other commercial customers are classified as Other Funding. Amortization of Deferred Capital Funding is recorded simultaneously with the amortization of the related asset in AECL's Consolidated Statement of Operations. Deferred development funding is recognized in income simultaneously with the amortization or impairment expense of the related asset in AECL's Consolidated Statement of Operations.

(thousands of dollars)	2011	2010
Operating funding		
Cost recoveries from third parties and other	\$ 14,450	\$ 7,372
Amortization of Deferred Capital Funding	7,196	4,679
Deferred development funding recognized in income during the year	204,752	_
Decommissioning and waste management	125,804	114,656
	\$ 352,202	\$ 126,707

# 14. EMPLOYEE FUTURE BENEFITS

# a) Pension Plan

The Corporation's employee pension benefits are covered through the Public Service Pension Plan. Payments are made to three accounts: Public Service Superannuation Account, Public Service Pension Fund account, and the Retirement Compensation Arrangement account. Total contributions made on account of current service are as follows:

(thousands of dollars)	2011	2010
Payments by employees	\$ 27,460	\$ 25,971
Payments by employer	\$ 54,917	\$ 51,252

The Corporation's rate of contribution to the Public Service Superannuation Account equals the employee contributions and the Public Service Pension Fund account is a 1.86 multiple of the employee contributions (2010 – 1.94). The contribution to the Retirement Compensation Arrangement account for calendar year 2011 is a multiple of 9.5 of the employee contributions (calendar year 2010 – 8.9). The multiple is subject to change based on revaluation by the Public Service Pension Plan administration.

# b) Other Employee Future Benefits

The Corporation provides certain termination and other benefits as described in Note 3 (q). The accrued benefit obligation is not funded as funding is provided when benefits are paid. Accordingly, there are no plan assets and the plan deficit is equal to the accrued benefit obligation.

(thousands of dollars)	2011	2010
Accrued benefit obligation, beginning of year	\$ 75,074	\$ 72,490
Current service cost	4,471	4,143
Interest on accrued benefit obligation	3,830	5,442
Benefits paid	(8,163)	(8,954)
Actuarial losses (gains)	(123)	1,953
Accrued benefit obligation, end of year	75,089	75,074
Unamortized net actuarial losses	(3,898)	(4,022)
Accrued benefit liability	71,191	71,052
Current portion, accrued benefit liability	(9,224)	(9,551)
Net accrued benefit liability	\$ 61,967	\$ 61,501
Net benefit plan cost		
Current service cost	\$ 4,471	\$ 4,143
Interest cost	3,830	5,442
Annual benefit plan expense	\$ 8,301	\$ 9,585

Cumulative actuarial gains or losses in excess of 10% of the obligation are amortized over the remaining average 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 (2010 – 11 years). The measurement date of the accrued benefit obligation is March 31, 2011, and the latest actuarial valuation of these benefits was performed in March 2011. The next valuation will be performed in March 2012.

The significant actuarial assumptions adopted in measuring the Corporation's accrued benefit obligation are:

- A discount rate of 4.95% (2010 5.15%)
- A rate of compensation increase of 2.15% (2010 2.5%)

# 15. PROVISIONS AND DUE TO SHAREHOLDER

(thousands of dollars)	2011	2010
Contract loss and other provisions	\$ 222,989	\$ 217,140
Due to Shareholder and other repayable contributions	9,407	15,592
Total provisions	\$ 232,396	\$ 232,732

The Corporation encountered delays in its active life extension projects and estimated costs to complete these projects have increased substantially. As a consequence, expected losses have been recognized as a liability and recorded as Provisions on the Consolidated Balance Sheet.

The balance of amounts Due to Shareholder and other repayable contributions represents appropriated funding received that is in excess of amounts spent on funded programs and other cash proceeds from heavy water sales (Note 16).

# 16. CONTRIBUTED CAPITAL AND DEFERRED DECOMMISSIONING FUNDING

Included in contributed capital is approximately \$135 million (2010 – \$161 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 of Canada, by way of a dividend, the cash proceeds from the sale of Government of Canada-funded heavy water. From 1997 to 2006, a Decision by the Treasury Board directed the Corporation to hold the proceeds from the sale or lease of Government of Canada-funded heavy water in a restricted fund for use in decommissioning activities for the 10-year period following the Decision. As Government of Canada-funded heavy water was sold or leased, the cash proceeds were transferred from contributed capital to deferred decommissioning funding, which was used to fund ongoing decommissioning activities.

An amount equivalent to the proceeds from sales made during the 10-year arrangement received after April 1, 2006 (Note 6) is transferred from contributed capital to deferred decommissioning funding. However, the funds are not required to be restricted for use in decommissioning activities. Other cash proceeds from heavy water sales are recorded as repayable contributions to the Government of Canada and are presented in Provisions (Note 15) on the Corporation's Consolidated Balance Sheet.

# 17. RELATED PARTY TRANSACTIONS

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

Notes 9, 10, 12, 13, 14, 15 and 16 describe areas impacted by transactions the Corporation has had with the Government of Canada.

# 18. COMMITMENTS, CONTINGENCIES AND OBLIGATIONS

# a) Commitments

The Corporation has entered into non-cancellable operating leases expiring on various dates for the rental of office space. The leases contain an escalation clause providing for additional rent. The Corporation also enters into other non-cancellable agreements facilitating operations and project requirements. Minimum future payments under these obligations are as follows:

(thousands of dollar	S)

2012	\$ 83,163
2013	11,385
2014	7,928
2015	8,170
2016	7,462
Subsequent to 2016	15,206
	\$ 133,314

# b) Regulatory Obligations

To ensure compliance with CNSC site licence conditions and other regulatory requirements, the Corporation has undertaken major investment in new and existing building infrastructure at the Chalk River facility. The Corporation's planned expenditure on these initiatives for 2012 is \$40 million. These obligations are funded through Parliamentary appropriations.

# c) Performance Guarantees and Liquidated Damages

It is industry practice to use letters of credit, surety bonds and other performance guarantees with respect to performance of 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. Liquidated damages are amounts designated by the parties during the formation of a contract and are collectible by the injured party as compensation upon a specific breach (e.g. late performance).

In the normal course of business, AECL also guarantees that certain projects will be completed within a specified time and may bear responsibility for liquidated damages should such obligations not be met.

The aggregate amount of the Corporation's potential exposure under the performance guarantees is estimated to be approximately \$213 million. Exposure to liquidated damages is estimated at \$96 million at March 31, 2011. Management has assessed the impact of liquidated damages on the active life extension projects and incorporated it into the calculation of the contract loss provision (Note 15).

# d) Other

On July 8, 2008, MDS (Canada) Inc. commenced legal proceedings against AECL and the Government of Canada in connection with AECL's isotope business. The amount claimed against AECL and the Government of Canada is \$1,600 million, and is currently under review. No provision has been made in these financial statements as the liabilities, if any, are not determinable at this time.

In the normal course of operations, AECL has become involved in various other claims and legal proceedings. AECL has taken internal and external advice in considering known legal claims and proceedings made by or against the Corporation. Consequently, it carefully assesses the likelihood of the success of a claim or proceeding. While the final outcome with respect to claims and legal proceedings that are pending at March 31, 2011 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.

# 19. FINANCIAL INSTRUMENTS AND FINANCIAL RISK MANAGEMENT

As part of its operations, AECL carries out transactions that expose it to financial risks, such as credit, liquidity and market risks. The Corporation's overall risk management program focuses on the unpredictability of the financial markets and seeks to minimize potential adverse effects on the Corporation's performance.

Risk management is the responsibility of the Corporation's management, which identifies, evaluates, and where appropriate, controls the negative impact of any such risk. Material risks are monitored and discussed with the Audit Committee of the Board of Directors.

#### Fair value measurements

Section 3862 of the CICA Handbook establishes a framework for measuring fair value in GAAP and for expanded disclosures about fair value measurements. An entity is required to classify fair value measurement using a fair value hierarchy that reflects the significance of the inputs used in making the measurements. The fair value hierarchy includes the following levels: Level 1 – quoted prices (unadjusted) in active markets for identical assets or liabilities; Level 2 – inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices); and Level 3 – inputs for the asset or liability that are not based on observable market data (unobservable inputs).

Fair value is principally applied in measuring investments and foreign exchange forward contracts. The following table provides a summary of financial assets and liabilities that are measured at fair value as of March 31, 2011 and 2010:

(thousands of dollars)	2011			2010				
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets measured at fair value								
T-bills		\$ <b>–</b>		\$ <b>-</b>		\$ 13,998		\$ 13,998
Term deposits		_		_		15,000		15,000
Bankers acceptance		_		_		10,000		10,000
Bonds		32,999		32,999		29,665		29,665
Total assets		\$ 32,999		\$ 32,999		\$ 68,663		\$ 68,663

There are no liabilities measured at fair value.

Level 1 - Based on quoted market prices in active markets.

Level 2 – Inputs, other than quoted prices in active markets, that are observable, either directly or indirectly.

Level 3 – Unobservable inputs that are not corroborated by market data.

Fair value represents management's estimates of the market value at a given point in time. The carrying value of all financial assets and liabilities approximates fair value as at March 31, 2011 and 2010, with the exception of long-term receivables and payables. The fair value of long-term receivables is \$164.3 million (2010 – \$185.7 million).

The following table represents the fair value of the Corporation's financial instruments as well as their classification on the Consolidated Balance Sheets as of March 31, 2011 and 2010:

(thousands of dollars)	2011	2010
Fair value of asset derivatives		
Within Cash and cash equivalents		
T-bills	\$ <b>-</b>	\$ 13,998
Term deposit	_	15,000
Bankers acceptance	_	10,000
	\$ <b>-</b>	\$ 38,998
Trust fund		
Bonds	32,999	29,665
	\$ 32,999	\$ 29,665
Total	\$ 32,999	\$ 68,663

There are no liability derivatives at fair value

# a) Foreign Currency Risk

Foreign Currency risk is the risk of transacting in a currency other than the operational currency of the organization. This can lead to variations in cash management of the operations. The objective of the Corporation's foreign exchange risk management activities is to minimize transaction exposures and the resulting volatility of the Corporation's earnings and commitments. This objective was unchanged from 2010. The Corporation currently transacts in many currencies, but the exposure to foreign currency transactions primarily relates to the U.S. dollar.

### b) Credit Risk

Credit risk is the risk that one party to the financial instrument might not meet its obligations under the terms of the financial instrument. In 2011, AECL's credit risk management objectives were unchanged from those in 2010.

# Cash equivalents and short-term investments

The objective of managing counterparty credit risk is to prevent losses in financial assets. AECL's exposure is reduced by:

- · Monitoring at the appropriate levels of management.
- · Applying a conservative investing strategy.
- · All instruments mature within a year.

As of March 31, 2011, all instruments are rated as R1 Low or higher by the Dominion Bond Rating Service and as A1 or higher by Standard and Poor's.

#### Accounts receivable (trade)

Exposure to credit risk from accounts receivable is low due to AECL's specific customer base within a government-regulated industry. The carrying amount of accounts receivable is managed by tracking invoices on an individual basis and any bad debt provision is kept strictly on an invoice-by-invoice basis with a stringent review and approval process.

Five customers (2010 – eight), each representing greater than 4% (2010 – 4%) of the total accounts receivable, comprise an aggregate of 83% (2010 – 87%) of total accounts receivable. No significant amounts are due in foreign currency.

Presented below is the balance of trade receivables, by age, and the related bad debt provision:

(thousands of dollars)	2011
Current	\$ 42,312
1 to 30 days	27,632
31 to 60 days	11,958
61 to 90 days	18,333
Over 90 days	56,245
	156,480
Provision for bad debts	(1,141)
Total trade accounts receivable	\$ 155,339
Unbilled revenue and other	\$ 107,414
Accounts receivable and unbilled revenue	\$ 262,753

During the year, the Provision for bad debts increased by \$0.2 million to \$1.1 million.

# c) Interest Rate Risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The objective of the Corporation's interest rate management activities is to minimize the volatility of the Corporation's earnings and expenses. The Corporation's exposure to interest risk is limited to changes in discount rates associated with the decommissioning and waste management provision and long-term payables. Changes in the discount rate are based on a credit adjusted risk-free rate that is sensitive to interest rate fluctuations. A one percent increase in the rate yields a \$484 million decrease in the decommissioning and waste management provision and a one percent decrease in the rate results in a \$663 million increase in the liability.

AECL's exposure is reduced by:

- · Limited transactions dealing with interest payments.
- · Financial instruments invested in relatively conservative instruments.
- · Investing in reputable institutions.

In 2011, AECL's interest rate management objectives were unchanged from those in 2010.

# d) Regulatory Risk

The Corporation operates in a highly regulated business environment. Changes in government policy may have an adverse impact on the Corporation's financial position. The Corporation's objective in managing regulatory risk is to actively monitor and implement changes on a timely basis to enable operations. In 2011, AECL's regulatory risk management objectives were unchanged from those in 2010.

### e) Liquidity Risk

This represents the risk that the Corporation will not have sufficient funds to meet its commitments and obligations. The Corporation's objective in managing liquidity risk is to maintain sufficient readily-available reserves in order to meet its liquidity requirements at any point in time. As a Schedule III Part I Crown corporation, AECL is restricted from borrowing funds to meet its obligations. The Corporation is dependent on funding from its shareholder to meet its obligations.

AECL manages liquidity risk by:

- · Cross-functional participation in project and business reviews.
- · Frequent communication with its shareholder to manage ongoing cash requirements and secure appropriate funding.
- · Maintaining a portfolio of highly liquid investments or instruments readily convertible into liquidity with high-quality counterparties.

In 2011, AECL's liquidity risk management objectives were unchanged from those in 2010. However, additional funding was required from the Government of Canada to meet obligations. As of March 31, 2011, the Corporation was holding cash and cash equivalents of \$18.6 million. Accounts payable and accrued liabilities of \$118.7 million are due within the year. Long-term payables (Note 11) of \$19.3 million are due within two years, of which \$13.3 million is due within one year.

The Corporation's funding plan is part of the Corporate Plan, and is reviewed and approved annually by the Board of Directors and the Government of Canada (Note 2). AECL relies on funding from the Government of Canada to continue operations and meet future obligations.

# **20. CAPITAL MANAGEMENT**

As a Schedule III Part I Crown corporation under the *Financial Administration Act*, Her Majesty the Queen in Right of Canada owns the shares of the Corporation. Any procurement or disposition of shares can only be undertaken through Parliamentary authorization. Further, AECL's liabilities are ultimately liabilities of Her Majesty in Right of Canada.

AECL's ability to obtain additional capital, either through equity or debt, is pursuant to the provisions of the *Financial Administration Act*. Historically, no long-term debt was put in place. Additional capital arose in the form of Government of Canada contributions.

The Corporation's objective in managing capital is to provide sufficient liquidity to support its financial obligations and its operating and strategic plans, while generating a reasonable return to the Government of Canada from its various commercial operations. This is managed through periodic funding received from the Government of Canada, the volume of cash received from operations and the portfolio of highly liquid investments or instruments readily convertible into cash with high-quality counterparties. In 2011, AECL's capital management objectives were unchanged from those in 2010.

The Corporation has a capital structure comprised of Shareholders' deficit, long-term payables, deferred capital funding, deferred development funding, deferred decommissioning and waste management funding and decommissioning and waste management provision. Given the limited amount of capital available from these sources, the Corporation relies principally on operating and capital funding provided by the Shareholder, which is requested in the Corporation's Corporate Plan.

# 21. COMPARATIVE FIGURES

Certain 2010 comparative amounts have been reclassified from financial statements previously presented to conform to the 2011 financial statement presentation.

# **BOARD OF DIRECTORS**

#### **Glenna Carr**

Appointed January 2008, Chair of the Board, AECL, Mississauga, Ontario

Formerly Chair of the Board of Directors of Independent Electricity System Operator; Chair of the Board of Technical Standards and Safety Authority; President of the Canadian Council for Public-Private Partnerships; Board Director, Ault Foods Ltd.; Chief Executive Officer, Carr-Gordon Limited; Vice-President, Laidlaw Inc.; Deputy Minister of the Ontario Management Board of Cabinet, Ministry of Consumer and Commercial Relations, and Ministry of Skills Development. Awarded National Champion for Excellence and Innovation in Public-Private Partnerships 2001; ICD.D Certified Director, Institute of Corporate Directors 2005.

Committees: Chair, Special Advisory. Ex-Officio on Audit; Science, Technology & Nuclear Oversight; Human Resources & Governance; Project Risk Review.

### **Hugh MacDiarmid**

President and Chief Executive Officer, AECL, Mississauga, Ontario

Director of ALH Holding Inc.

Former Managing Director, Holden America LLC; President and Chief Executive Officer, Laidlaw Educational Services; Executive Vice-President, Commercial, Canadian Pacific Railway; President and Chief Executive Officer, Lumonics Inc.; and principal with McKinsey & Company. Previous appointee of both the Government of Canada, as Chair of the External Advisory Committee on Smart Regulation, and the Government of Ontario, as Governor of Ortech International. Appointed January 2008.

Committees: Ex-Officio on Science, Technology & Nuclear Oversight; Human Resources & Governance; Project Risk Review. By invitation: Audit and Special Advisory.

#### Marcel Aubut, O.C., O.Q., Q.C., Ad. E.

Lawyer, Managing Partner, Heenan Blaikie, Montreal, Québec

Former President-CEO of the Québec Nordiques and Governor of the NHL; Founder of law firm Aubut Chabot, which merged with Heenan Blaikie; Founder and President of the Québec Metro High Tech Park; President and CEO of Trans-America Productions Ltd. Directorships include Hydro-Québec; Purolator; Whole Foods Market Canada; Olymel; VANOC; Canada's Sports Hall of Fame; Boralex; Intra Continental Insurers Ltd.; General Insurance Company Inc.; Laurentian Life Insurance Company of Canada; Investors Group; Æterna Zentaris Inc.; NHL Pension Society; Toronto 2015 Pan Am Bid; and Fondation Nordiques. Officer of the Ordre national du Québec (2006), Member (1986) and Officer (1993) of the Order of Canada, Official Medal of the Québec National Assembly (1981), Queen's Counsel (1986). Recipient of the Québec Bar's honorary advocaters Emeritas (2009). In 2010, elected President of the

Canadian Olympic Committee, received the title of *Grands Québécois* by the Chambre de commerce de Québec and the Medal of *Gloire de L'Escolle*. Appointed to the Executive Committee of the Association francophone de comités nationaux olympiques; Chair of the Board of the Canadian Olympic Foundation; and Honorary Chair of Olympians Canada. In 2011, appointed member of the International Olympic Committee's International Relations

Committees: Member, Human Resources & Governance

#### **Richard Boudreault**

President and Chief Executive Officer, Exploration Orbite Inc.

Former Chief Executive Officer of PyroGenesis Inc., Chief Technology Officer and Vice-President of Corporate Strategy at Advanced Research and Technology Inc. Venture Advisor for Caisse de dépôt et placement du Québec and Professor of Mechanical Engineering, Université de Sherbrooke. Director of Mechtronix, ITSMax and GeoMax and ex-Director of 25 firms and organizations. Holds a physics degree from the University of Montreal, a Master of Engineering from Cornell University and an MBA from the Université de Sherbrooke. Appointed December 2007.

Committees: Member, Audit, Science, Technology & Nuclear Oversight, and Special Advisory.

#### **Peter Currie**

Director, Canadian Tire Corporation Limited., Intelius Inc., Arise Technologies, ViXS Systems Inc. Former Executive Vice-President and Chief Financial Officer of Nortel Networks Corporation; Vice-Chairman and Chief Financial Officer for the Royal Bank of Canada; and Executive Vice-President and Chief Financial Officer at North American Life Assurance Company. Former member of the Board of Governors and Executive Committee of York University, former member of the Board of York University Development Corp. Former Director of Toronto East General Hospital, C.D. Howe Institute and former Board Chairman of Symcor Inc. Named Canada's CFO of the Year in 2003 by PricewaterhouseCoopers, Financial Executives International Canada and The Caldwell Partners International. Appointed July 2008.

Committees: Chair, Audit; Member, Special Advisory.

#### **Dr. Claude Lajeunesse**

President and CEO, Aerospace Industries Association of Canada

Former President of Concordia University in Montreal and Ryerson University in Toronto, and President and CEO of the Association of Universities and Colleges of Canada. Member of the Board and Chair of the Green Aviation Research Development Network, Chair of the Schmeelk Foundation and Board member of the Canada-Israel Committee. Appointed March 2005.

Committees: Chair, Science, Technology & Nuclear Oversight; Member, Project Risk Review, and Special Advisory.

#### **Dr. John Luxat**

Professor and NSERC/UNENE Industrial Research Chair in Nuclear Safety Analysis, McMaster University

Former Vice-President and Board Director of Nuclear Safety Solutions Limited with 32 years of experience in the Canadian nuclear industry. Member of the Province of Alberta's Nuclear Power Expert Panel. Past-President and Treasurer of the Canadian Nuclear Society. Member of the Canadian and American Nuclear Societies and of the Advisory Board of the International Association for Structural Mechanics in Reactor Technology. Holds a PhD in electrical engineering from the University of Windsor. Appointed October 2008.

Committees: Member, Science, Technology & Nuclear Oversight.

#### **Carol Perry**

Corporate Director

Former Commissioner of Ontario Securities
Commission and Director of DALSA Corporation
and Independent Electricity Market Operator.
Served as Chair of the Board of Directors of
St. Joseph's Health Centre in Toronto, and as a
Director of the Bloorview MacMillan Children's
Foundation. A former investment banker, held
senior positions with RBC Dominion Securities,
Richardson Greenshields and CIBC World
Markets. Professional engineer and ICD.D
Certified Director, Institute of Corporate
Directors. Appointed July 2008.

Committees: Chair, Project Risk Review; Member, Human Resources & Governance, and Special Advisory.

#### Gordon H. Shaw

Director, Corporate Secretary, and Advisory Board Chair, Aeolis Wind Power Corporation Former Senior Executive with Imperial Oil Limited, Vice-Chair and Executive Director, Reform Party of Canada, Chair of Board and Director, Terra Mines Ltd., President and Director, SPL Wastewater Recovery Centre. Advisory Board, Strategic Power Solutions. Appointed December 2007.

Committees: Member, Science, Technology & Nuclear Oversight and Human Resources & Governance.

### Stella Thompson

Corporate Director, Calgary, Alberta
Current directorships include: Alberta's
Electricity Balancing Pool, the Alberta Provincial
Audit Committee, Alberta WaterSmart (Chair),
Calgary Airport Authority, Genome Alberta (ViceChair) and First Calgary Financial. Recipient of

the ICD.D certification granted by the Institute of Corporate Directors and, in 2005, was recognized by the Women's Executive Network and the University of Western Ontario's Richard Ivey School of Business as one of Canada's Top 100 Most Powerful Women. Former Vice-President at Petro-Canada. Appointed September 2002.

Committees: Chair, Human Resources & Governance; Member, Audit and Project Risk Review.

#### **Barbara Trenholm**

Professor Emerita, Faculty of Business Administration, University of New Brunswick

A Fellow Chartered Accountant, directorships include Plazacorp Retail Properties Ltd. Member of the Institute of Corporate Directors. Awards include the National Post/PricewaterhouseCoopers Leaders in Management Education Award, the Global Teaching Excellence Award, and University of New Brunswick Merit Award and Dr. Allan P. Stuart Award for Excellence in Teaching. Former member of the Canadian Institute of Chartered Accountant's Board of Directors, Past-President of the New Brunswick Institute of Chartered Accountants, and former Acting Dean of the University of New Brunswick's Faculty of Business Administration. Appointed June 2002.

Committees: Member, Audit and Project Risk Review.

#### **NON-VOTING ADVISORS**

#### **Graham Brown**

Director, Canadian Council for Public-Private Partnerships

Former President and CEO of Carillion Canada Inc., Chief Operating Officer of Ontario Power Generation and National Power PLC, and former Senior Vice-President of British Petroleum PLC. Former Board Director of Ontario Power Generation, National Power, Seafield Resources, and New Brunswick Power Corp. Holds an Honours Degree in Mathematics from Durham University, Durham, England. Appointed February 2010.

Committees: Member, Project Risk Review.

#### **Elizabeth Dowdeswell**

President and CEO, Council of Canadian Academies, Management Consultant.

Former Founding President & CEO of Canada's Nuclear Waste Management Organization; Executive Director of the United Nations Environment Program; Under-Secretary-General of the United Nations; Assistant Deputy Minister, Environment Canada; Executive Director, Royal Commission on Unemployment Insurance; Deputy Minister, Saskatchewan Culture and Youth. Current directorships include Technical Standards & Safety Authority; Ashco

Shareholders Inc., Associated Engineering; Ontario Genomics Institute and Grand Challenges Canada. Member of the Standing Advisory Group on Technical Assistance and Cooperation, IAEA. Holds a Master of Science degree from Utah State University. Appointed February 2010.

Committees: Member, Science, Technology & Nuclear Oversight

#### H. Glenn Rainbird, O.C.

Director, Canadian Air Transport Security Authority and Member, Air Command Advisory Council, Canadian Air Force

Former President and CEO of TRLabs; held executive positions with Nortel Networks and Imperial Oil. Former Chair and Director of Veridian Corporation, the Canadian Network for the Advancement of Research, Industry and Education, and the Edmonton Regional Airports Authority. Honorary Colonel of 8 Wing, Canadian Forces Base, Trenton. Appointed an Officer of the Order of Canada (2003). Recipient of the Hewlett-Packard Forum Award, and the Canadian IWAY Award. Attained a Bachelor of Applied Science in Civil Engineering and a Master of Business Administration from Queen's University. Appointed October 2010.

Committees: Member, Science Technology & Nuclear Oversight.

# **OFFICERS**

#### **Glenna Carr**

Chair of the Board

#### **Hugh MacDiarmid**

President and
Chief Executive Officer

#### Ala Alizadeh

Vice-President, Marketing and Business Development

#### **Bruce Ambeault**

Vice-President, Contracts

### **George Bothwell**

Senior Vice-President, External Relations and Communications

#### **Richard Coté**

Vice-President, Commercial, Nuclear Laboratories

#### **Anthony DeVuono**

Senior Vice-President and Chief Technology Officer

#### **Earnest (Hank) Drumhiller**

Vice-President and General Manager, Operations, Nuclear Laboratories and Chief Nuclear Officer

#### **Tracy Greig**

Vice-President, Supply Chain

### **Kent Harris**

Senior Vice-President and Chief Financial Officer

#### Allan Hawryluk

Senior Vice-President, Strategic Contracting

#### Jerry Hopwood

Vice-President, Product Development

## Georgina Kossivas

Vice-President, Finance

#### William Kupferschmidt

Vice-President and General Manager, Research and Development

#### Joseph Lau

Vice-President, Engineering and Technical Delivery

#### Jonathan Lundy

Senior Vice-President, General Counsel and Corporate Secretary

### **Beth Medhurst**

Senior Vice-President, Human Resources

#### Joan Miller

Vice-President and General Manager, Waste Management and Decommissioning

## William Pilkington

Senior Vice-President, Operations

# **Michael Robins**

Senior Vice-President, Restructuring

### Ian Trotman

Vice-President, Project Management and Engineering Services

#### **Robert Walker**

Senior Vice-President, Nuclear Laboratories

# **CORPORATE GOVERNANCE**

The corporate governance structure of AECL is similar to that of publicly-traded companies, with the exception that AECL's Directors, the Board Chair and the President and Chief Executive Officer are appointed by the Government of Canada by Order-in-Council.

In 2010–2011, the Board provided direction, input and evaluation of AECL's strategic plans and approved major contracts and initiatives. A major focus for the Board and its Special Advisory Committee during the year was the provision of effective governance over the restructuring of AECL, including due diligence as part of the Government of Canada's initiative to secure investors/owners for the organization's commercial operations.

AECL's corporate governance framework reflects best practices as outlined in the Treasury Board of Canada Secretariat's Corporate Governance Guidelines for Crown Corporations. The Board of Directors recognizes that effective governance requires continuous improvement of corporate processes and practices necessary to ensure a high level of accountability to stakeholders.

In 2010–2011, AECL continued to implement and strengthen its governance activities to enhance stronger accountability, transparency and confidence throughout the organization. In particular, the Board undertook the following initiatives during the year:

- Continued the Director succession and search process for the purpose of ensuring continuity and effective leadership by the Board, aligned with strategic priorities.
- Completed an annual review of the Board Committee structure to ensure an appropriate level of Board oversight over business risk and other related risks.
- Retained three non-voting special advisors to provide the Board and its Committees with additional expertise and ensure effective oversight of key strategic priorities, including project risk, completion of major commercial projects and the restructuring activities at AECL's Nuclear Laboratories.
- Provided significant due diligence and perspectives on the Government of Canada's restructuring initiative.
- Continued to provide regular reporting to the Minister of Natural Resources Canada with respect to the Board's fulfillment of its governance role and accountabilities.
- The Board Chair also gave several keynote addresses on the subject of Crown corporation governance to audiences of Directors and prospective Directors during the year.

## The Board

Last year, the Board had 12 appointed members, 10 of whom were independent in the sense that they were not management, nor did they have any interest, business or other relationship with the company.

AECL's business affairs are governed by the Board of Directors, which provides key stewardship responsibilities as set out in the Board Charter. These responsibilities include oversight for financial management, the identification of principal risks, approval of the strategic direction of the organization, examination of the corporation's public policy objectives, as well as meeting its overall legal requirements.

The following table sets forth the record of attendance for Board and Committee meetings for each of the Directors over the past fiscal year. The compensation of the Board complies with the Remuneration Guidelines for part-time Governor in Council Appointees. Directors Cassie Doyle, Deputy Minister of Natural Resources Canada, and Hugh MacDiarmid, President and CEO of AECL, are considered non-independent Directors, and as such did not receive compensation as Directors.

The Board regularly assesses its effectiveness and functioning through an assessment process using independent external expertise. The Board has also created Director standards that set out the skills and criteria required to be an effective member of the Board of Directors. These criteria are aligned with the Corporate Governance Guidelines for Crown Corporations issued by the Privy Council Office, and an orientation process is in place to familiarize new Directors with the standards. The Board has approved a number of governance policies and procedures to assist it in fulfilling its role and responsibilities.

# Directors' Attendance at Board Meetings and Committee Meetings, 2010-2011

Director	Audit (7 meetings)	Science, Technology & Nuclear Oversight (10 meetings)	Human Resources & Governance (7 meetings)	Project Risk Review (9 meetings)	Special Advisory (8 meetings)	Board of Directors (12 meetings)
G. Carr <sup>1</sup>	7/7	8/10	7/7	9/9	8/8	10/12
H. MacDiarmid <sup>1</sup>	7/7	10/10	7/7	9/9	8/8	12/12
M. Aubut			6/7			5/12
R. Boudreault	7/7	10/10			8/8	11/12
G. Brown <sup>3</sup>				7/9		7/12
P. Currie	7/7				8/8	11/12
C. Doyle <sup>2</sup>						6/7
E. Dowdeswell <sup>3</sup>		10/10				9/12
C. Lajeunesse		10/10		7/9	8/8	11/12
J. Luxat		9/10				12/12
C. Perry			7/7	9/9	7/8	11/12
G. Rainbird <sup>3</sup>		4/4				4/4
G. Shaw		10/10	7/7			12/12
S. Thompson	6/7		7/7	8/9	4/8 (as a guest)	12/12
B. Trenholm	7/7			9/9		11/12

<sup>1</sup> Ex-Officio Members of all Committees, with the exception that Mr. MacDiarmid is not a member of the Audit or Special Advisory Committees.

<sup>2</sup> C. Doyle resigned from the Board on November 26, 2010.

<sup>3</sup> Non-voting Special Advisor to the AECL Board of Directors (G. Rainbird joined the Board in September 2010 as a non-voting Advisor and Member of the Science, Technology & Nuclear Oversight Committee.)

# **FIVE-YEAR CONSOLIDATED FINANCIAL SUMMARY**

(Unaudited)

(millions of dollars)	2011	2010*	2009*	2008*	2007
Commercial Operations					
Revenue	\$ 448	\$ 428	\$ 322	\$ 541	\$ 514
Interest revenue	11	11	14	17	19
Net income (loss) before investment in product development	213	(104)	(330)	50	80
Product development funding	40	29	24	38	_
Development costs	(40)	(29)	(25)	(87)	(69)
Recognition of deferred development funding	205	_	_	_	_
Impairment of intangible assets	(205)	_	_	_	_
Net income (loss)	\$ 213	\$ (104)	\$ (331)	\$ 1	\$ 11
Research & Technology Operations					
Revenue	\$ 50	\$ 33	\$ 65	\$ 58	\$ 56
Funding	315	312	198	150	113
Net loss before Dedicated Isotope Facilities	(22)	(16)	(14)	(41)	(70)
Funding	34	21	67	_	_
Impairment charge	_	_	_	247	_
Expenses	21	9	58	9	_
Net loss	\$ (10)	\$ (5)	\$ (5)	\$ (297)	\$ (70)
Liability Management Unit					
Funding	\$ 126	\$ 115	\$ 105	\$ 96	\$ 63
Net (loss) income	\$ (263)	\$ 29	\$ (77)	\$ (68)	\$ (84)
Financial position					
Cash and cash equivalents	\$ 19	\$ 48	\$ 33	\$ 65	\$ 141
Heavy water inventory	291	292	294	295	299
Capital expenditures	39	50	51	111	84
Property, plant and equipment	239	231	191	142	246
Decommissioning and waste management provision	3,357	3,085	3,100	3,008	2,928
Long-term payables (excludes current portion)	\$ 6	\$ 18	\$ 30	\$ 41	\$ 47
Other					
Export revenues	\$ 147	\$ 163	\$ 105	\$ 136	\$ 124
Number of full-time employees	4,830	4,957	4,891	4,728	4,135

<sup>\*</sup> Certain amounts have been reclassified to conform to the 2011 Financial Statement presentation

# **AECL OFFICES**

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#### Version française

La version française du rapport annuel sera fournie sur demande.







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