REPORTER
Winter/Spring 2000

New nuclear regulations in final stages

Following extensive consultations with industry stakeholders and the Canadian public, regulations associated with the new *Nuclear Safety and Control Act* are undergoing the final preparations needed to bring the act into force in what will be the first major overhaul of Canada's nuclear regulatory regime in more than 50 years.

Approved by Parliament in March 1997, the Nuclear Safety and Control Act will replace the existing Atomic Energy Control Act and give the Atomic Energy Control Board (AECB) a new name — the Canadian Nuclear Safety Commission. The new act will provide for more explicit and effective regulation of nuclear energy in Canada, with increased emphasis on nuclear safety issues, particularly as they relate to the environment.

Before the act can be proclaimed, however, regulations are needed to add detail to the framework of the act in setting requirements that will apply to the various activities of the Canadian nuclear industry. To this end, AECB staff have prepared proposed regulations that are compatible with the new act, and incorporate common licence conditions which reflect current legal, financial, and technical standards.

This process has been carried out in consultation with the nuclear industry and other concerned parties. While efforts have been made to keep substantive changes to a minimum, the new regulations will include a number of significant modifications to the existing regime, including the following:

- New radiation dose limits will be introduced, based on the recommendations of the International Commission on Radiological Protection.
- Some changes will be made in the classification of nuclear facilities.
- Security requirements at reactor sites will be strengthened.

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Canada

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- New regulations will be adopted to govern the transport and packaging of nuclear materials.
- Reactor operators will have to be re-certified every five years.
- Hospitals will be required to provide radiation protection information to patients who have undergone nuclear medicine therapy.

On March 23, the new regulations were presented to the Atomic Energy Control Board, where they were approved in principle. They will now be forwarded to the Minister of Natural Resources, the Honourable Ralph Goodale, who will submit the regulations through the cabinet approval process, which will also involve setting the date on which the Nuclear Safety and Control Act will come into force.

When the Canadian Nuclear Safety Commission comes into existence, one of its first orders of business will be to approve and adopt the new regulations, which will then be published and come into force once formal cabinet approval is received. Also at this inaugural meeting, the Commission will be asked to approve a plan designed to give licensees time to comply with certain new regulatory requirements.

Other measures are being taken to prepare for the new regime. For example, the AECB has been developing new regulatory documents that further explain requirements for specific aspects of nuclear operations. Eight documents have been finalized, 10 are undergoing consultation with the industry, and more will be developed during the transition phase. The Board has also implemented a comprehensive training program so that CNSC staff will be able to interpret and apply the new act consistently and effectively. To ensure continuity, the more than 4,000 nuclear licences administered by the Board will be progressively revised.

In a speech to the Canadian Nuclear Association's Winter Seminar in Ottawa on February 15, AECB President Dr. Agnes Bishop said every practical effort has been made to ensure that the new act and regulations will have a minimal impact on the day-to-day operations of nuclear licensees. Dr. Bishop further noted that the new regime will give the Commission the tools needed to address such issues as electricity market deregulation and harmonization of federal and provincial regulations.

Copies of the Nuclear Safety and Control Act, the 10 associated regulations, the eight regulatory documents approved to date and other documents related to the new regulations are available on the AECB Web site at www.aecb-ccea.gc.ca.

Decommissioning the Whiteshell Laboratories

Atomic Energy of Canada Limited (AECL) has notified the Atomic Energy Control Board (AECB) that it intends to apply for regulatory approval to decommission its Whiteshell Laboratories near Pinawa, Manitoba.

The AECB has determined that a "comprehensive study" environmental assessment must be completed in accordance with the Canadian Environmental Assessment Act before it can make a regulatory decision on this licensing request. There are several steps to the Environmental Assessment Act process; the first one is the establishment of the scope of the project and the factors to be considered in the assessment.

A document outlining the scope of the assessment, which provides AECL with guidance on how the environmental assessment must be conducted, has been prepared in consultation with the public and with other federal and provincial government departments and agencies. It describes several aspects of the public consultation program, including provisions for an extra period for public review of the draft Comprehensive Study Report when it is available. It also contains a summary of the process to be followed.

All interested parties are encouraged to participate in the variety of consultation activities being offered by AECL. A copy of the scope of the assessment may be obtained from the AECB Website at www.aecb-ccea.gc.ca.

To obtain information on the project and the environmental assessment, contact:

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Prosecution brought against two licensees

Charges under the Atomic Energy Control Act were laid against Atomic Energy of Canada Limited (AECL) as a result of an incident at AECL's Chalk River facilities in May 1999.
These proceedings are based on the findings of the Atomic Energy Control Board (AECB) investigation into the incident. The charges allege a failure by AECL to adequately protect the health and safety of the workers involved. The AECB investigation did not reveal any damage to the public or the environment from the incident.

Charges under the act were also laid against the Cape Breton Development Corporation (DEVCO). This legal action resulted from a compliance inspection in July 1999 and follow-up investigation, by AECB staff, at the Phalen Mine site in Nova Scotia. The incident involved a faulty radiation device. DEVCO pleaded guilty to a number of charges and sentencing is scheduled for May 12, 2000.

The AECB issues licences under the authority of the Atomic Energy Control Act and its Regulations. Licensees must adhere to the conditions provided in their licence, in accordance with the Atomic Energy Control Regulations. The charges described above were laid under Section 20 of the Atomic Energy Control Act, which makes it an offence to operate contrary to the act and regulations.

Recent AECB licensing decisions

Following its board meetings in December 1999, as well as those of January, February and March 2000, the Atomic Energy Control Board (AECB) announced licensing decisions for the following Canadian nuclear facilities.

Waste management facilities

The Board approved the construction of a used fuel dry storage facility by Ontario Power Generation (OPG) at the Bruce Nuclear Power Development, near Tiverton, Ontario. This approval is for the construction phase only; operation of the facility will require a future licence application to the Board. The Board obtained assurance from OPG that it would conduct soil tests on the site and provide the results to the AECB before it begins construction. The Board also recognized that there is a pending Federal Court judgment in a judicial review involving the environmental assessment for this project. That judgment was still pending as of the date this issue of the Reporter went to print.

The Board approved the renewal of the operating licence for the low-level Radioactive Waste Management Facility, operated by the University of Toronto, in Toronto, for a term to January 31, 2002.

The Board also approved the renewal of the operating licence for the Radioactive Waste Storage Facility operated by Hydro-Québec at Gentilly, near Bécancour, Quebec. The licence will have a two-year term to December 31, 2001.

Medical accelerators

The Board approved the licensing of the particle accelerator facilities operated by the Manitoba Cancer Treatment and Research Foundation in Winnipeg, the Alberta Cancer Board (Cross Cancer Institute) in Edmonton, the Centre hospitalier de l'Université de Montréal in Montreal, and the Alberta Cancer Board (Tom Baker Cancer Centre) in Calgary and Hôpital Maisonneuve-Rosemont in Montreal. It also approved the construction of particle accelerators by Cancer Care Ontario at the Northeastern Ontario Regional Cancer Centre, in Sudbury, the British Columbia Cancer Agency at the Fraser Valley Cancer Centre in Surrey, and the University of Ottawa Heart Institute, located in Ottawa. All licensing actions involving these accelerator facilities are for four-year terms.

Uranium facilities

The Board approved the renewal of the operating licence, for a two-year term, for the fuel fabrication plant operated by Zircatec Precision Industries Inc. in Port Hope, Ontario.

The Board also approved, for two-year terms, the renewal of the operating licences for Cameco Corporation's uranium refinery facility in Blind River, Ontario, and for its uranium processing facility in Port Hope, Ontario. Board Members requested regular reports from AECB staff on two studies concerning Port Hope, Ontario, one dealing with the accumulation of uranium in soil and the other with the health effects of the facility on Port Hope residents.

Research reports

The following Research and Support Program final reports were recently submitted to the Atomic Energy Control Board. A limited number of copies of these documents are available free of charge from the Communications Division, while quantities last. Please quote the RSP number when ordering. The documents may also be consulted in the AECB library.

Acres International Limited. *Seismic Assessment of Systems and Components at Pickering A*. AECB project number 2.248.3. (RSP-0086).

Agora Management Associates. *From Research Results Through Available Knowledge to Board Decisions and Public Safety Review of Selected Research and Support Projects and Suggestions for Refinement of the Research and Support Performance Measurement Framework at the Atomic Energy Control Board*. AECB project number 11.597.1. (RSP-0104).

Billinghurst, M.W., and K. Gordon. *Assessment of Tc-99m in Nuclear Medicine Environments*. Health Sciences Centre, University of Manitoba. AECB project number 6.118.1. (RSP-0099).

Carr, R., T. Atwell, R. Jacques, and J. Moreau. *Évaluation du programme de formation pour les opérateurs de machine à combustible à la Centrale nucléaire de Gentilly-2*. The Northern Centre for Advanced Technology Inc. (NORCAT). AECB project number 2.575.1. (RSP-0098).

Conlon, John. *Evaluation of the Point Lepreau GS Fuel Handling Operator Training Program*. Qualprotech (Oakville) Inc. AECB project number 2.279.11. (RSP-0087).

Detombe, J., L.J. Gaultois, and T.J. Jamieson. *Y2K Risk and Compliance Assessment for Radioisotope Licensing*. Science Applications International Corporation (SAIC Canada). AECB project number 6.549.1. (RSP-0091).

Driedger, Dr. A.A. *Working Paper on Radionuclide Therapies*. London Health Sciences Centre. AECB project number 6.123.1. (RSP-0090).

Duport, P. *Annual Limit on Intake for Radon-222 in Air*. PJD and Associates Inc. AECB project number 7.510.1. (RSP-0102).

Geomatrix Consultants Inc. *Seismic Source Models, Recurrence Models, and Ground Motion Attenuation Models - Seismic Hazard in Southern Ontario*. AECB project number 2.405.1 (Part 1). (RSP-0105-1).

Geomatrix Consultants Inc. *Seismic Hazard Analysis Results and Sensitivity - Seismic Hazard in Southern Ontario*. AECB project number 2.405.1 (Part 2). (RSP-0105-2).

Geomatrix Consultants Inc. *Recommendations Seismic - Hazard in Southern Ontario*. AECB project number 2.405.1 (Part 3). (RSP-0105-3).

Hancock, Dr. T. *Final Report on a Design for a Port Hope Community Health Survey*. Trevor Hancock Inc. AECB project number 7.225.2. (RSP-0094).

Hill, T.D. *Performance Indicators Pilot Project*. HCA - Assessment Experts. AECB project number 6.498.2. (RSP-0100).

Humphries, J.R., of JRH Consulting Services, and J.F. Lafortune and T. Jamieson of Science Applications International Corporation (SAIC). *Periodic Safety Review of Nuclear Power Plants*. AECB project number 2.481.2. (RSP-0095).

Johnson, J.R. *A Review of the Relationship Between Air Concentration Measurements and the Intake of Long Lived Radioactive Dust*. Internal Dosimetry Instruments and Services Inc. AECB project number 7.592.1. (RSP-0103).

Kulp, K.W. *Development of a Regulatory Monitoring Program for Shiftwork Systems at Canadian Nuclear Power Plants*. Circadian Technologies, Inc. AECB project number 2.555.1. (RSP-0096).

Milton, Gwen M., and Tom G. Kotzer. *Partitioning of I-129 in the Environment: The Fate of Radioiodine in a Shallow Sand Aquifer System at Chalk River Laboratories*. Atomic Energy of Canada Limited. AECB project number 5.414.1. (RSP-0089).

Reed, K. DFCMR *Contingency Planning Report*. Magellan Engineering Consultants Incorporated. AECB project number 6.551.1 (Part 1). (RSP-0092-1).

Reed, K. MRD Y2K *Risk Assessment and Compliance Evaluation Services Audit Report*. Magellan Engineering Consultants Incorporated. AECB project number 6.551.1 (Part 2). RSP-0092-2.

Stepp, J.C. *Assessment of Ontario Hydro's Activities on the Seismic Hazard Resolution Project*. Earthquake Hazards Solutions. AECB project number 2.405.4. (RSP-0088).

Stevenson, J.D., Consulting Engineer. *Review of the NRU Seismic Upgrade Program*. AECB project number 2.560.1. (RSP-0097).

Wilkins, R.C., N. Kizilian, J.R. McLean, D.Wilkinson and P. Reinhardt-Poulin, Health Canada Radiation Protection Bureau; F. Johnson of Ottawa Instrumentation Ltd.; and D. Gibbons of Department of Electrical Engineering, University of Ottawa. *The "Single Cell 'Comet' Assay" as a Biological Dosimeter*. AECB project number 7.223.1. (RSP-0093).

Wilkins, R.C., D. Wilkinson, and J.R. McLean, Health Canada Radiation Protection Bureau. *Use of the Comet Assay to Detect Radiation Damage of Selected Radiation Sensitive Cell Populations*. AECB project number 7.223.2. (RSP-0101).

Compliance: A key element in the new act

When the Nuclear Safety and Control Act (NSCA) comes into force in the near future, replacing the Atomic Energy Control Act, it will provide the legal framework for the control of nuclear technology, and establish the Canadian Nuclear Safety Commission (CNSC) as the regulatory body that exercises the administrative controls described in the act.

To achieve its regulatory objective, the CNSC must develop regulations — a process that is well underway — and undertake activities aimed at securing compliance with these rules. A key activity for achieving compliance is the development of a compliance program for licensees.

The CNSC Compliance Program strives to provide a sensible balance between incentives to encourage compliance and measures to compel compliance. This graduated approach includes the following elements:

- promotional activities to encourage compliance;
- verification activities to assess the actual level of compliance; and
- graduated enforcement actions in cases of non-compliance (up to and including revocation of licences and/or prosecution).

While this step-by-step approach will normally be used to obtain compliance with the regulations, there will be cases where it will be warranted to use one of the more severe enforcement measures, such as prosecution.

The act allows the Commission to delegate some of its licensing powers to designated officers, and gives inspectors the power to verify compliance with the legislation. The act also allows inspectors and designated officers to order that measures to be taken to correct unacceptable situations. These orders are legally binding.

Documents outlining the Canadian Nuclear Safety Commission's Compliance Program will be distributed soon to licensees and other interested parties by the AECB. They will also be available on the AECB's Website at www.aecb-ccea.gc.ca. For further information, contact the Communications Division (see contact information on page 7).

Future licensing actions

In the coming months, the Atomic Energy Control Board will consider renewing licences for the facilities shown below. Each listing includes the name of the facility, the licensee, the location of the facility, and the date the licence will expire.

Power reactors

Bruce A Nuclear Generating Station
Ontario Power Generation
Tiverton, Ontario
August 31, 2000

Point Lepreau Nuclear Generating Station
New Brunswick Power
Point Lepreau, New Brunswick
October 31, 2000

Gentilly-2 Nuclear Generating Station
Hydro-Québec
Gentilly, Quebec
October 31, 2000

Bruce Heavy Water Plant
Ontario Power Generation
Tiverton, Ontario
October 31, 2000
(The plant is shut down and a licence to decommission this facility is expected to be considered at a later date.)

Darlington Nuclear Generating Station
Ontario Power Generation
Bowmanville, Ontario
November 30, 2000

Waste management facilities

Bruce Nuclear Power Development Radioactive Waste Operations Site 2
Ontario Power Generation
Tiverton, Ontario
May 31, 2000

Pickering Waste Management Facility
Ontario Power Generation
Pickering, Ontario
December 31, 2000

University of Saskatchewan
Saskatoon, Saskatchewan
July 31, 2000

University of Alberta
Edmonton, Alberta
November 30, 2000

AECL facilities

Chalk River Laboratories
Chalk River, Ontario
October 31, 2000

MDS Nordion Medical Isotope Reactor Project
Construction of MAPLE 1 and MAPLE 2 reactors
Chalk River Laboratories
Chalk River, Ontario
October 31, 2000

MDS Nordion Medical Isotope Reactor Project
Construction of Radioisotope Processing Facility
Chalk River Laboratories
Chalk River, Ontario
October 31, 2000

Whiteshell Laboratories
Pinawa, Manitoba
October 31, 2000

Research reactors

SLOWPOKE-2
University of Toronto
Toronto, Ontario
June 30, 2000

SLOWPOKE-2
École polytechnique
Montréal, Quebec
June 30, 2000

SLOWPOKE-2
Dalhousie University
Halifax, Nova Scotia
June 30, 2000

SLOWPOKE-2
University of Alberta
Edmonton, Alberta
June 30, 2000

SLOWPOKE-2
Saskatchewan Research Council
Saskatoon, Saskatchewan
June 30, 2000

SLOWPOKE-2
Royal Military College of Canada
Kingston, Ontario
June 30, 2000

Subcritical Assembly
École polytechnique
Montréal, Quebec
September 30, 2000

Uranium mining facility

Cluff Lake
Cameco Corporation
Northern Saskatchewan
December 31, 2000

Fuel facilities

Earth Sciences Extraction Company
Calgary, Alberta
November 30, 2000

General Electric Canada Inc.
Toronto, Ontario
December 31, 2000

General Electric Canada Inc.
Peterborough, Ontario
December 31, 2000

Proposed restart to undergo environmental assessment

Ontario Power Generation (OPG) formally applied to the Atomic Energy Control Board (AECB) on November 29, 1999, for regulatory approval to return the Pickering A nuclear generating station reactors to service when it has completed a specified work program. The AECB determined that an environmental assessment must be completed in accordance with the *Canadian Environmental Assessment Act* before it can make a regulatory decision on this licensing request.

In connection with this decision, the AECB recently published the final *Scope of the Environmental Assessment for the Proposed Return to Service of the Pickering Nuclear Generating Station* "A". This document shows how OPG must conduct the environmental assessment, and explains the extent of the environmental assessment report to be submitted to the AECB for review and decision. The Scope of the Assessment was distributed to interested parties and is posted on the AECB Website at www.aecb-ccea.gc.ca.

OPG's application will also be subjected to a thorough evaluation under the regulatory licensing process. This includes a detailed safety evaluation and a licensing process that gives the public an opportunity to make submissions before the Board makes any decision is taken.

To obtain information on the project or to submit comments, contact:

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Your comments on the publication are also welcome, and should be directed to the same address. We are particularly interested in your suggestions for topics to be covered in future issues.

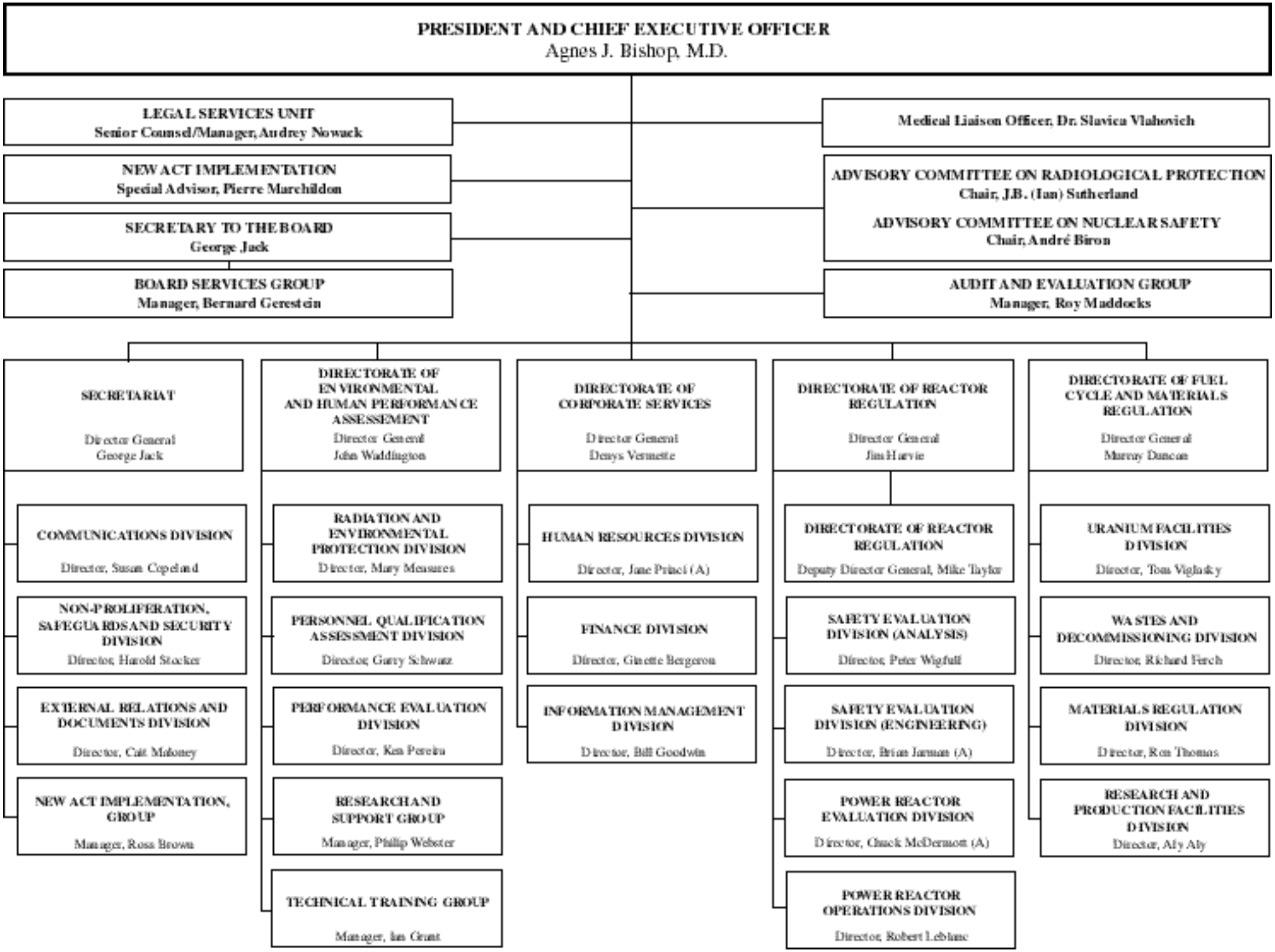
International Recognition Awarded to Nuclear Monitoring Team

Under the auspices of the United Nations (UN) Security Council the action team conducting inspections in Iraq for weapons of mass destruction and missile systems was recently presented with an award for outstanding team work. In a very short period of time, the team was successful in uncovering Iraq's clandestine nuclear program.

The International Atomic Energy Agency (IAEA) is responsible for the nuclear component of the disarmament inspection regime between the coalition forces and the Government of Iraq. The IAEA created the action team to investigate the Iraqi production of uranium metal, a key component of nuclear weapons. The award was given for inspections conducted from April 1998 to March 1999 for work that was carried out under extremely difficult conditions.

Mr. George Healey, an AECB safeguards expert and senior analyst, was assigned as leader for some of the inspection groups under the action team.

The AECB is proud to have contributed to this successful international effort.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