The Challenges of Regulating an Expanding Nuclear Industry in Canada

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Presentation Topics

- History of the CNSC
- CNSC’s Mandate and Vision
- CNSC Organization & Strategic Framework
- Regulating Canada’s Nuclear Industry
- CNSC Moving Forward
History of the CNSC

- 1940’s – 1950’s
  - In 1946, the Atomic Energy Control Act created the Atomic Energy Control Board (AECB)
  - AECB’s 3 main functions: regulation, mining, and research
  - July 1947 – first large-scale nuclear reactor in Canada was initiated at Chalk River
  - 1952 – Chalk River project became Crown Corporation, AECL
History of the CNSC

1950’s – 1960’s
- 1957 – Canada was instrumental in the formation of the IAEA
- 1960 – the AECB issued health and safety regulations and established radiation exposure guidelines
History of the CNSC

1970’s to present

- 1974 – AECB initiated greater emphasis on licensing procedures and inspection standards
- 1980’s – first public involvement in Board’s decision-making process
- By 1999, AECB staff had increased to more than 400 professional members
- May 31, 2000 – the CNSC was created with the implementation of the Nuclear Safety & Control Act, replacing the AECB
The CNSC’s Mandate and Vision

**Mandate**

To regulate the use of nuclear energy and materials to protect the health, safety, security and the environment and to respect Canada’s international commitments on the peaceful use of nuclear energy.

**Vision**

To be one of the best nuclear regulators in the world.
The CNSC: Two Organizations

CNSC

Commission

Staff
The Commission

- Established under the NSCA
- Quasi-judicial administrative tribunal
- Up to seven members
- CNSC President is full-time Member
- Conducts public hearings
- Makes licensing decisions
CNSC Staff Organization

- The President is the CEO of the Staff Organization
- 565 employees in HQ, site and regional offices

Five principal teams:
- President’s Office
- Operations
- Communications and Regulatory Affairs
- International Affairs
- Corporate Services
How the CNSC Operates

- In 2003-04, in support of its Strategic Framework, the CNSC developed a Logic Model.
- This Logic Model is used by the CNSC to illustrate how it makes a difference in the lives of Canadians, providing a roadmap from its activities to its outcomes.

The CNSC Logic Model – Results for Canadians:

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<th>Regulatory Framework</th>
<th>Licensing &amp; Certification</th>
<th>Compliance</th>
<th>Cooperative Undertakings</th>
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Canada
There are 6 uranium mining projects in the Athabasca Basin of northern Saskatchewan.

Uranium ore from these mines are processed either at an onsite or local offsite mill. Average ore grade can range up to 24.7%.

The end product (uranium oxide or yellowcake) is transported by truck down to Saskatoon, and then continues on to other sites for refining or processing.
McArthur River - Mine Site
Raisebore Mining Method

Reaming:
First waste rock to shaft, then ore to grinding area.
Reamer
Remote Controlled Front End Loader

Ore Collection Chute for Handling Ore Grade Raisebore C
Port Radium - 1940’s

The old fashioned way of mining
McCLean Lake Open Pit Mine
McCLean Lake - Sue Mining
Site Security – Resident Guard for Northern Saskatchewan…
Blind River Refinery
Port Hope Conversion Facility
Port Hope Conversion Facility
UF6 Cylinder – Conversion Facility
Zircatec Facility, Port Hope
Used Fuel Dry Storage Building at WWMF
Cluff Lake – Decommissioning of Mill
Mill Complex – Pre-2000
CCD Thickener Removal
Mill Phase II - Wall Coming Down

Viewpoint M4 SW Mill

25/09/2005

25/09/2005
Rio Algom Quirke Mine Site
Elliott Lake – Main Dam
Rio Algom Panel Site
Elliott Lake – Effluent Treatment Pond
Dension Mine Site
Elliott Lake – Capped South West Raise
Atomic Energy of Canada Limited (AECL)

Chalk River Laboratories
Nuclear Fuel Cycle

- Refining
- Milling
- Mining
- Fuel Fabrication
- Power Reactor
- WASTE
The Business of Regulating Canada’s Nuclear Industry

Two accountability principles make up the basis of CNSC’s regulatory philosophy:

- Licensees are responsible for the protection of health, safety, security, and the environment and respecting Canada’s international commitments.
- The CNSC is responsible for regulating licensees, assessing whether licensees are compliant with NSCA, regulations, and international obligations.
Regulating Canada’s Nuclear Industry

Safety First

“Our job is safety, our means is regulation”
Linda Keen, President and CEO of the CNSC

The new regulatory framework builds on:
- a technology-neutral approach to regulation and facility design;
- advances in safety; and
- the experiences of the international regulatory community.
Regulating Canada’s Nuclear Industry

Licensing

- The CNSC administers a comprehensive licensing system for the use of nuclear energy in Canada
- The CNSC has the broadest range of licensees in the world
- Licensees have a direct and vested interest in achieving a level of safety that earns the confidence of Canadians
- Inspection activities are carried out to ensure high levels of compliance by licensees within the CNSC regulatory framework
Regulating Canada’s Nuclear Industry

Challenges

- Despite increased attention on new build and refurbishment projects, CNSC’s priorities continue to be the safety and security of existing facilities.
- Vast majority of CNSC work pertains to ongoing licences, so requirements remain for staff to provide regulatory oversight.
- Additional pressures for CNSC to respond when new market opportunities arise.
- Increased public scrutiny of the CNSC.
- Specialized people to meet regulatory obligations are in short supply within the nuclear sector.
Regulating Canada’s Nuclear Industry

Current Developments

- Substantial progress on the regulatory framework under the NSCA
- In the last year, government has approved new security regulations – the CNSC established a new Regulatory Policy Committee
- CNSC has adopted a common consultation process
- Able to benchmark CNSC’s regulatory framework against best practices internationally and nationally
Regulating Canada’s Nuclear Industry

More Current Developments

- Moving forward on new build applications from OPG and Bruce Power
- Continued work on new build licensing with March 2007 release of *Supplementary Information on Design Review Process for New Build*
- March 2007 release of *Licensing Process for New Uranium Mines and Mills in Canada*
- CNSC recently established 2 new internal organizations:
  - New Reactor Licensing Division – single point of contact for new build reactors
  - Environmental Assessment and Protection Directorate – oversee environmental assessment and compliance approach
CNSC Commitment to Regulatory Improvements

- Continued commitment to an open and transparent regulatory process
- Effective OPEX sharing within the industry
- Ongoing and systematic regulatory oversight of licensees’ performance
- Systematic regulatory assessment of licensees’ safety culture, quality management and compliance
- CNSC adopting modern management systems
CNSC Improvement Initiatives

- CNSC completed a self-assessment against IAEA GS-R-1 requirements in 2006
- Corrective Action Plan led by senior executives on Quality Council
  - Quality Management System
  - Integrated Planning and Performance Management
  - Licensing
  - Compliance
  - Integrated IM/IT
  - Leadership development
- IRRS Mission requested for 2008
CNSC Moving Forward

- Improved industry performance
- Refurbishment and extended operation of several facilities across Canada
- Future opportunities for new facilities within Canada
CNSC Moving Forward

- Clear and sustained growth in the industry will mean an increase in workload
- Streamline regulatory process in anticipation of new projects for processing facilities, waste facilities, uranium mines, refineries and reactors
- A renewed commitment to working with existing facilities such as, AECL’s Chalk River Laboratories
- Expansion of medical and industrial activity
- Stronger controls over radioactive sources
In Summary

- The CNSC will continue to:
  - provide proactive industry leadership
  - ensure a strong regulatory process that works effectively and efficiently
  - continue outreach work with licensees, stakeholders and the public
  - protect the health, safety, security, and environment of Canadians
Questions?