



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Radiation Protection in Canada

The Regulator's Perspective

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President, Canadian Nuclear Safety Commission

**Canadian Radiation Protection Association
Annual Conference 2011**

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JAPAN

**Condolences to the
people of Japan**

**Best wishes for a quick
recovery**



Fukushima-Daiichi Nuclear Power Plant

Shutdown as designed during earthquake

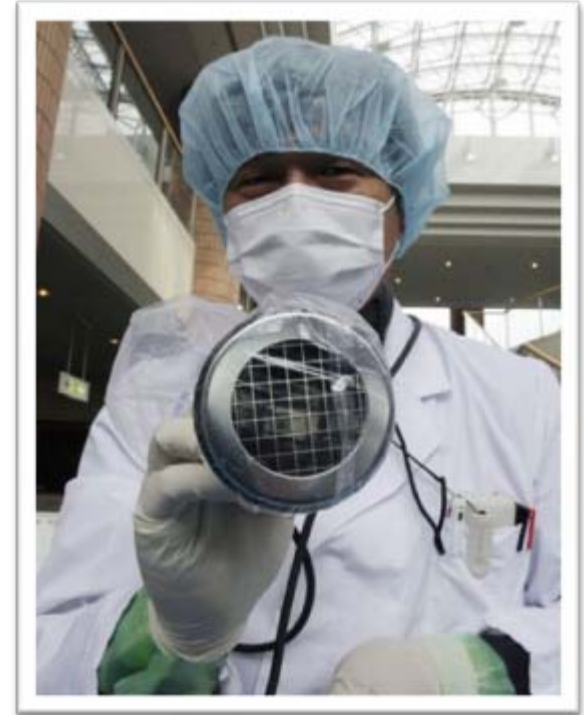
- Tsunami knocked out emergency backup systems

Efforts continue to control situation

- Operator hopes to regain complete control in 6 - 9 months

Raised a number of issues

- Location and stability of emergency backup systems
- Perceptions of radiation and risk to health



A Wake-up Call for the Nuclear Industry

CNSC Response

- Immediately activated Emergency Operations Centre and staffed Nuclear Emergency Organization
- Active in coordinated Government of Canada action plan
- Informing Canadians on CNSC public web site
- Directed licensees to review lessons learned, re-examine safety cases, and report findings



Swift action

Canadian Nuclear Safety Commission

Established May 2000, under the *Nuclear Safety and Control Act*

Replaced the AECB, **established in 1946**, *Atomic Energy Control Act*



**Canada's Independent Nuclear Regulator -
65 Years Of Experience**

Our Mission Is Clear

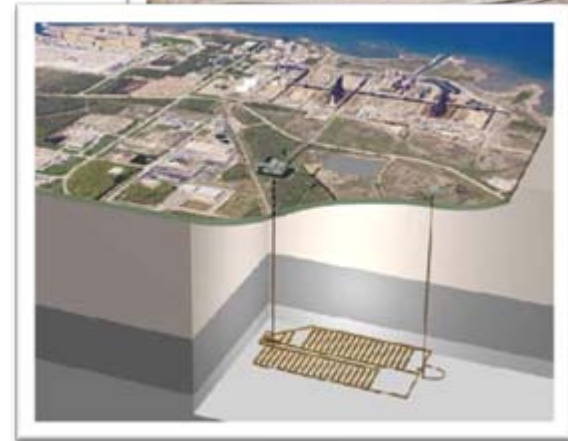
Protect the **health, safety** and **security** of persons and the **environment**; and to implement Canada's **international commitments** on the peaceful use of nuclear energy

Canada's Nuclear Watchdog



CNSC Regulates All Nuclear-Related Facilities and Activities

- Uranium mines and mills
- Uranium fuel fabricators and processing
- Nuclear power plants
- Waste management facilities
- Nuclear substance processing
- Industrial and medical applications
- Nuclear research and educational
- Export/import control



...From Cradle To Grave

Independent Commission

- Quasi-judicial administrative tribunal
- Commission members are independent
- Commission hearings are public and Webcast
- Decision can only be reviewed by Federal Court



Transparent, Science-based Decision-making

CNSC Designated Officers

Designated by the Commission to deal with the majority of routine issues

- Issue licences
- Provide opportunity to be heard, if necessary

Supported by CNSC inspectors to enforce compliance



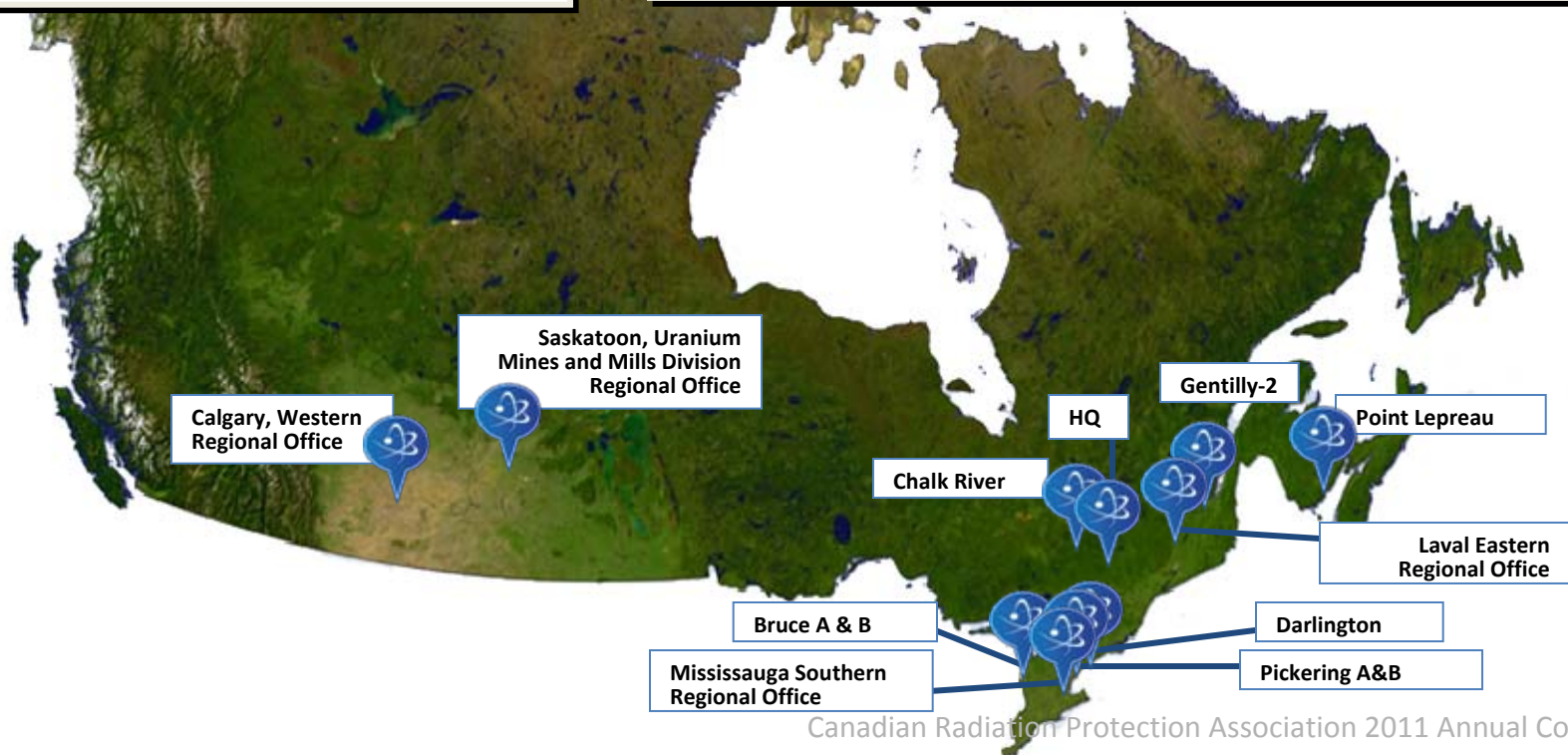
**Licensing interface for most of CRPA's
CNSC-licensees**

CNSC Staff Located Across Canada

HQ in Ottawa
5 site offices at power reactors
1 site office at Chalk River
4 regional offices
Staff: ~ 850
Resources: \$140 m (70% cost-recovered)

Licensees: 2050
Total Licences: 3300

- 220 *Class II Nuclear Facilities and Prescribed Equipment Regulations*
- 2430 *Nuclear Substances and Radiation Devices Regulations*



Radiation Protection in Canada

Cooperatively managed by the CNSC, Health Canada and the Provinces

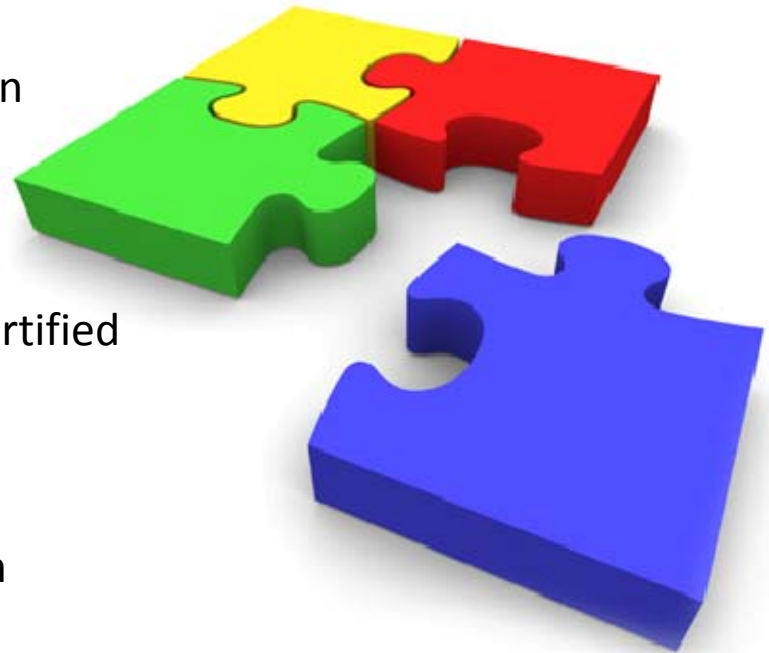
- Federal Provincial Territorial Radiation Protection Committee supports harmonization

Regulation of industrial, medical and research applications

- Radiation Safety Officers are key and must be certified

Strong environmental radiation protection

- First country to assess and regulate effects on non-human (e.g. animal and plant life)
- Assess actual discharges from NPPs and uranium mines and mills



Doses to the public and nuclear energy workers far below regulatory limits

Canadian Involvement in RP

Domestically

- CNSC staff are active CRPA members

Internationally

- International Commission on Radiological Protection (ICRP)
- United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)
- International Atomic Energy Agency (IAEA)
- Nuclear Energy Agency Committee on Radiation Protection and Public Health (NEA CRPPH)
- International Radiation Protection Association (IRPA)
- World Health Organization (WHO)

Valuable contributions at home and abroad

Recent CNSC Initiatives / Issues

Tritium Studies Synthesis Report, 2010

- Releases are currently ALARA
- Can we reach international consensus?

Port Hope Health Studies Synthesis Report

- No adverse health effects

Regulatory Strategy for Industrial Radiography

- CNSC a leader on reducing exposures to most exposed group in the world

Bruce Power alpha exposure event

- Lessons learned



Advancing safety and the facts

NRU Re-licensing

Important global source of medical isotopes

**Operating licence expires
October 31, 2011**

- Day 1 Public Hearing – June 8
- Application for Participant Funding available until May 21
- Day 2 Public Hearing – September 30



On the CNSC's radar

Also on the CNSC's radar

Non-reactor based isotope production

- \$30 million investment by Government of Canada for R&D
- 2 years to complete projects
- CNSC ready to licence

Radiation Protection Regulations

- Review and possible amendments
- Ample opportunity for public comment

Patient Safety in Radiotherapy

- Assessing the current state of affairs

Ongoing international studies on radiation and health

- EUROCAN Project



Science-based regulation

Still A Lot Of Misconceptions

- Radiation health effects
- “No safe level of radiation”
- Incidence of cancer around nuclear facilities
- Globally, who speaks for safety?



**Communication, Communication,
Communication!**

For More Information On CNSC



Annual Report 2009 -10



Visit our Web site nuclearsafety.gc.ca



**We Will Never
Compromise
Safety...**

...It's In Our DNA!



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