



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada



# Canadian Nuclear Safety Commission

*Ensuring the safety of Canada's nuclear sector*

**Michael Binder, President**

**Canadian Nuclear Safety Commission**

**March 9, 2017 – Gatineau, QC**



CANADA 150

Presentation to the Canadian Electricity Association

# The Canadian Nuclear Safety Commission

- Regulates the use of nuclear energy and materials to protect **health, safety,** and **security** and the **environment**
- Implements Canada's **international commitments** on the peaceful use of nuclear energy
- **Disseminates** objective scientific, technical and regulatory **information** to the public



*We will never compromise safety*

# The CNSC Regulates All Nuclear Facilities and Activities in Canada...

- Uranium mines and mills
- Uranium fuel fabrication and processing
- Nuclear power plants
- Nuclear substance processing
- Industrial and medical applications



- Nuclear research and educational activities
- Transportation of nuclear substances
- Nuclear security and safeguards
- Import and export controls
- Waste management facilities

*...From cradle to grave*

# CNSC Staff Located Across Canada



## Fiscal year 2016–17

Human resources: 850 full-time equivalents

Financial resources: \$148 million

(~70% cost recovery; ~30% appropriation)

Licenses: 1,700

Licences: 2,500

Headquarters (HQ) in Ottawa  
4 site offices at power plants  
1 site office at Chalk River  
4 regional offices



# Independent Commission

- Quasi-judicial administrative tribunal
- Agent of the Government of Canada (the Crown)
- Reports to Parliament through Minister of Natural Resources
- Commission members are independent and part-time
- Commission hearings are public and webcast
- Staff presentations in public
- Decisions are reviewable only by Federal Court

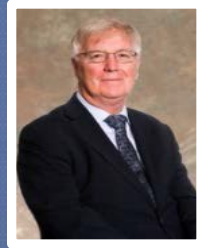


*Transparent, science-based decision making*

# Commission Members



**Dr. Michael Binder**  
President and Chief  
Executive Officer, CNSC  
(Term expires May 8, 2018)



**Dr. Alexander (Sandy) McEwan**  
Chair, Department of Oncology,  
University of Alberta  
Edmonton, Alberta  
(Term expires Mar. 6, 2018)

## New Interim Commission members (1-year term)

- Dr. Sandor Jean Demeter
- Mr. Rob Seeley
- Dr. Soliman A. Soliman



Vacant



Vacant

Commission members Tolgyesi and Velshi are authorized to complete files they were working on at the time their terms expired.

## Deep Geologic Repository Joint review panel



**Dr. Stella Swanson**  
Biologist and Environmental  
Consultant  
Rockglen, SK



**Dr. Gunter Muecke**  
Professor,  
Department of Geology,  
Dalhousie University  
Halifax, NS



**Dr. James F. Archibald**  
Professor,  
Department of Mining, Queen's  
University  
Kingston, ON

# Nuclear Power Plants – Status

## Bruce

- Licence renewed until May 31, 2020
- Refurbishment application not yet filed



## Point Lepreau

- Refurbishment completed — returned to service November 2012
- Licence expires June 2017; renewal hearings in January and May 2017

## Gentilly-2

- In safe shutdown since December 28, 2012
- Decommissioning licence valid until June 30, 2026



# Nuclear Power Plants – Status <sup>(2)</sup>

## Darlington

- Licence expires November 30, 2025
- Darlington refurbishment
  - Refurbishment began October 15, 2016
  - \$12.8 billion project to refurbish all four units (2016 to 2026)
  - CNSC to monitor and support with reviews and inspections
- Ontario has put new build on hold





# Nuclear Power Plants – Status <sup>(3)</sup>

## Pickering

- Licence expires August 31, 2018
- Ontario approved plans for continued operation from 2020 to 2024
- Licence application to be submitted — August 2017
- Public Commission hearing (Part 1) set for April 2018

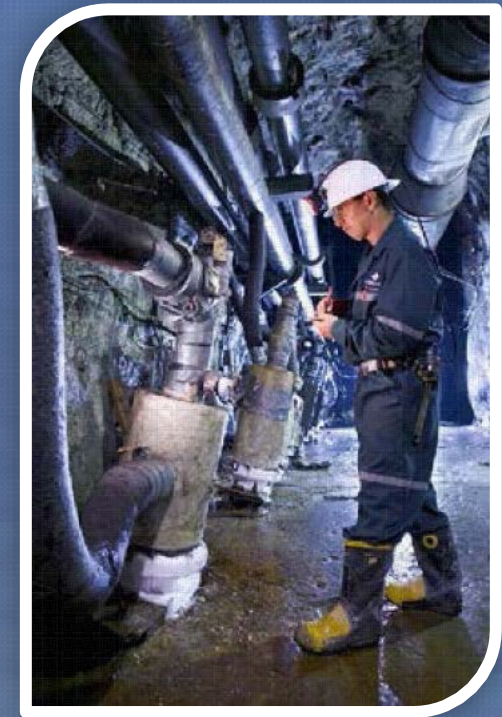


# Canadian Uranium Projects-Update

- **Active uranium mining projects (Saskatchewan)**

- Key Lake Mill (Cameco)
- McArthur River Mine (Cameco)
- Rabbit Lake Mine/Mill (Cameco)
  - announced suspension – April 2016
- Cigar Lake Mine (Cameco)
- McClean Lake Mines/Mills (Areva)
  - granted an eight-year licence – July 2009
  - upcoming hearing in June 2017

} Granted 10-year licences in 2013



- **Increased interest in exports to China and India**

- **Global price not supportive of production — low demand and oversupply**

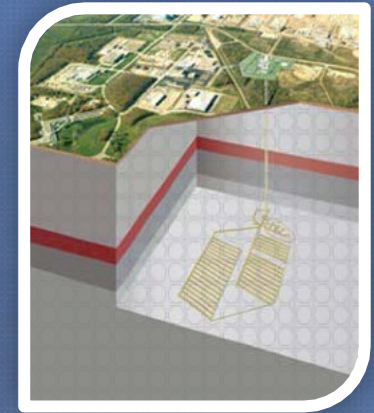
# Canadian Nuclear Laboratories

- Chalk River Laboratories licence renewed until March 31, 2018
- **3 Environmental Assessments for decommissioning underway:**
  - **Near Surface Disposal Facility Project (Deep River)**
    - public comment period on Environmental Impact Statements (EIR)  
(March 17 - May 17, 2017)
    - Commission hearing (January 2018)
  - **Decommissioning of the Whiteshell Reactor #1 (Pinawa)**
    - public comment period on EIS (September 2017)
    - Commission hearing (October 2018)
  - **Nuclear Power Demonstration Closure Project (Rolphton)**
    - Public comment period on EIS (September 30, 2017 - December 30, 2017)
    - Commission hearing (December 2018)



# Waste Management

- **Port Hope Area Initiative and Gunnar Remediation Project**—ongoing
- **OPG's Western Waste Management Facility (at Bruce site)**
  - relicensing hearing in April 2017
  - CNSC preparing EA for proposed site expansion
- **NWMO — Finding a high-level radioactive waste site**
  - site selection studies continue in 9 of 22 communities
  - CNSC involved early to explain regulatory role and meet communities/Indigenous groups
- **OPG Deep Geological Repository for low- and intermediate-level waste**
  - OPG submitted additional studies in 2016 to the Minister of Environment and Climate Change
  - Minister's decision pending the outcome of public comments



# Small Modular Reactors (SMRs)

- **Discussion Paper DIS-16-04 - *Small Modular Reactors* released for public consultation in June 2016 — over 430 comments received**
  - discussed how the CNSC will address licensing and technical assessment of SMRs
  - regulations under the *Nuclear Safety and Control Act* (NSCA) are **already suitable** for regulating SMRs
  - staff will make recommendations regarding changes, where needed, to regulatory framework documents per the Regulatory Framework Plan
- **A number of interested SMR vendors for pre-licensing vendor design reviews**
  - The CNSC is engaged in six vendor design reviews, with two more possible applications for 2017-18

*More discussion is needed with stakeholders*



# Regulatory Framework Modernization

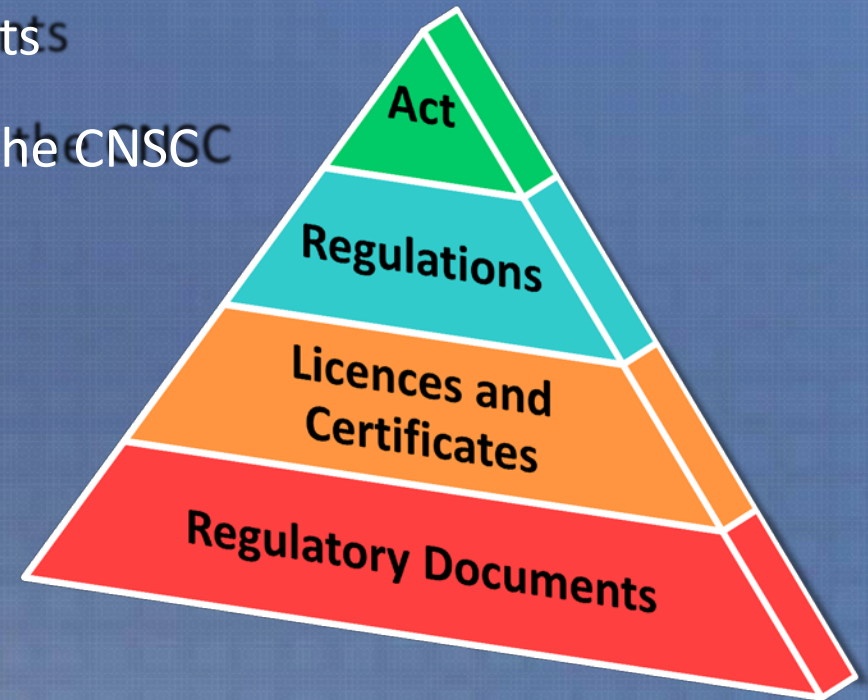
- Building clear regulatory expectations, supported by guidance
- Consolidate over 150 documents into 58 regulatory documents
- Total of 24 regulatory documents have been published since the CNSC regulatory framework structure was adopted in 2013

## Recent:

- REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* – Published in December 2016
- REGDOC-2.2.4, *Fitness for Duty: managing worker fatigue* – Commission approved in December 2016

## Upcoming:

- REGDOC-2.2.4, *Fitness for Duty (drug and alcohol testing)* – planned presentation to Commission in August 2017



# Security and Emergency Response

- Cyber security is a growing threat
- Continuing to build nuclear forensics capabilities
- Updating *Nuclear Security Regulations*
- Fukushima lessons – Enhanced emergency response systems
- Emergency response exercises at nuclear power plants (Darlington, Bruce, Pickering next)
- International Atomic Energy Agency emergency preparedness review in Canada — 2019



# Domestic and International Activities

## Domestic

- *Nuclear Liability and Compensation Act* – January 1, 2017
- Fukushima regulatory amendments (published in *Canada Gazette, Part I*)
- Continuing to clarify regulatory requirements

## International

- CNSC Presidency of The Seventh Review Meeting for the *Convention on Nuclear Safety*
- Continued participation in IAEA missions and other fora





# Government Reviews

## Review of federal EA processes

- Public consultation across Canada (Sep 2016 - Dec 2016)
- Expert panel report to Minister of Environment and Climate Change – March 31, 2017

## National Energy Board modernization

- Consultation ongoing – March 31, 2017
- Expert panel report to Minister of Natural Resources – May 15, 2017

## Review of *Fisheries Act*

- Committee on Fisheries and Oceans report and recommendations to Parliament – February 24, 2017

## Review of *Navigation Protection Act*

- Committee on Transport, Infrastructure, and Communities tables findings in Parliament - March 2017

*Consultation is at the core of all reviews*

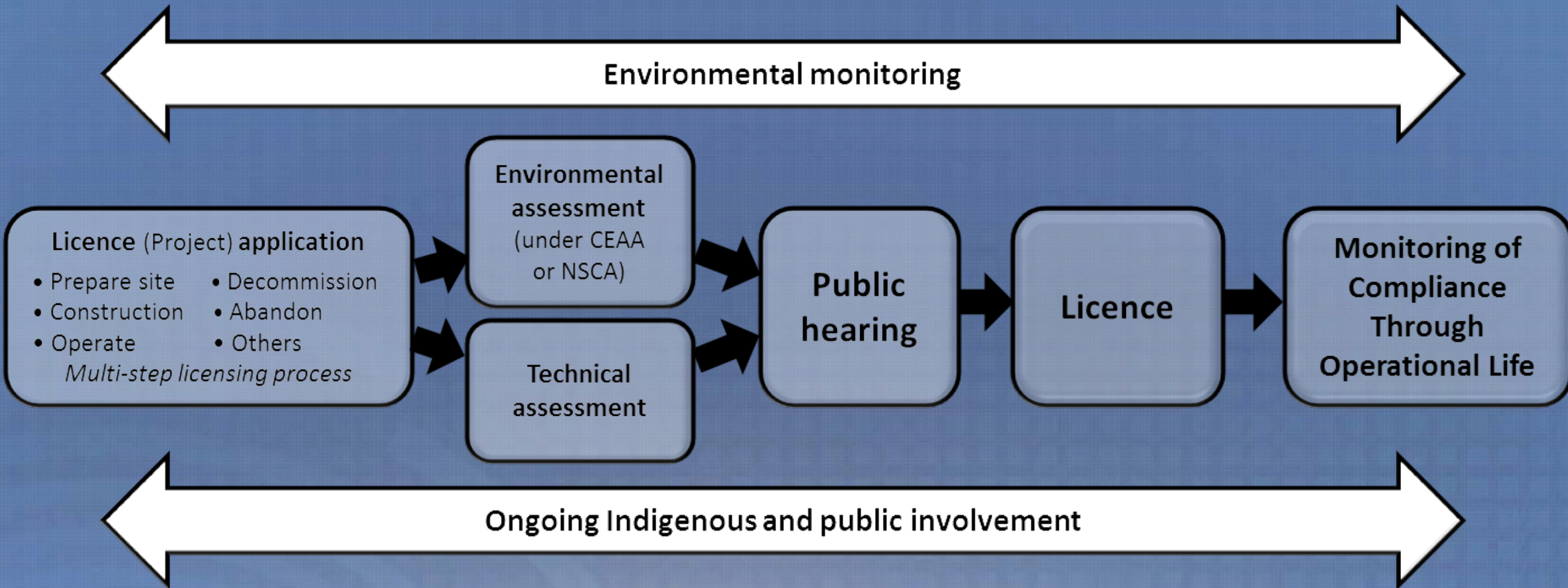


# EAs in the Nuclear Context

- The CNSC assesses the environmental effects of all nuclear facilities or activities at *every phase* of their lifecycle
- CNSC carries out EAs under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) or under the *Nuclear Safety and Control Act* (NSCA)
- EAs provide an opportunity for the participation of the public and Indigenous Peoples
  - Consideration of cultural and traditional rights, traditional knowledge, and land use
- An EA will assess impacts of nuclear activity on:
  - Biophysical aspects of the environment such as air, water, soil, plants, animals, and human health
  - Weather, seismic events and climate change



# CNSC EA Process



# Potential Impact of Environmental Assessment Review

- The CNSC has sole federal responsibility for EAs related to nuclear projects under CEAA 2012
  - REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* – published Dec 2016
- Over 30 years of experience conducting EAs
- Courts have upheld CNSC EA decisions and processes
- Revoking responsible authority status could lead to duplication of effort, consultation fatigue and delays in timelines – lack of nuclear expertise and capacity



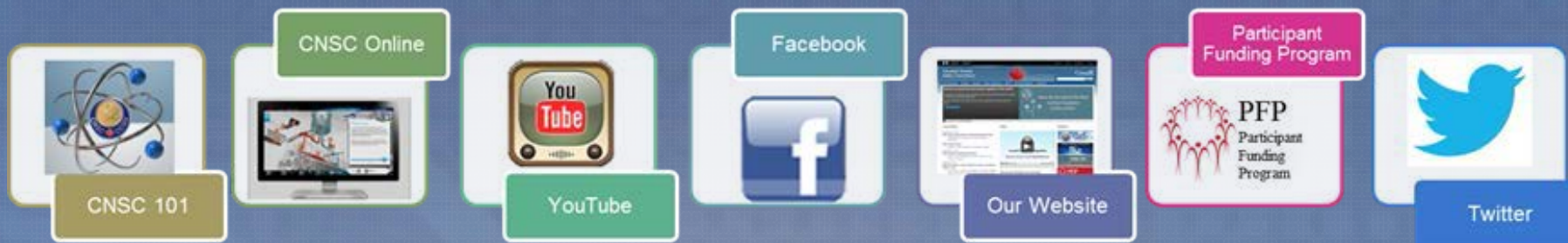
# Indigenous Relations

- Duty to consult (REGDOC-3.2.2, *Aboriginal Engagement* – February 2016)
- Truth and Reconciliation Commission
- United Nations Declaration on Rights of Indigenous Peoples
- Working Group of Ministers on the Review of Laws and Policies Related to Indigenous Peoples
  - The Hon. Carolyn Bennett, Minister of Indigenous and Northern Affairs
  - The Hon. Dominic LeBlanc, Minister of Fisheries, Oceans and the Canadian Coast Guard
  - The Hon. Jody Wilson-Raybould, Minister of Justice and Attorney General of Canada (Chair)
  - The Hon. Jane Philpott, Minister of Health
  - The Hon. Jean-Yves Duclos, Minister of Families, Children and Social Development
  - The Hon. James Gordon Carr, Minister of Natural Resources



# Public Engagement

- Ensuring the confidence of Canadians
- Participant Funding Program
- Indigenous and public consultations
- Extensive outreach and engagement program
- Requirement for licensees to communicate



*Building trust is a continuous process*

Thank You!  
Questions?





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