



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada



***Canadian Update  
Presentation to the  
International Nuclear  
Regulators' Association***



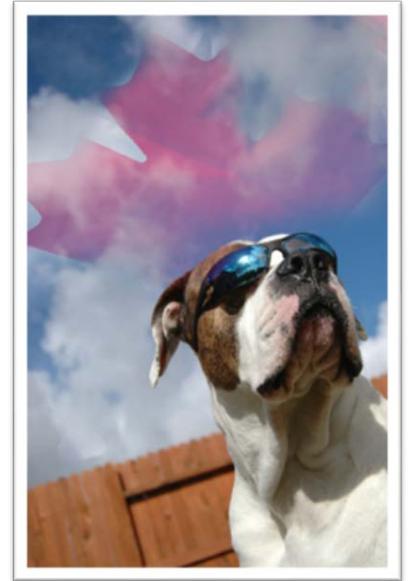
**Terry Jamieson, Vice-President, Technical Support Branch  
Canadian Nuclear Safety Commission  
May 9, 2016 – Madrid, Spain**

e-Doc 4974821



# *Canadian Nuclear Safety Commission*

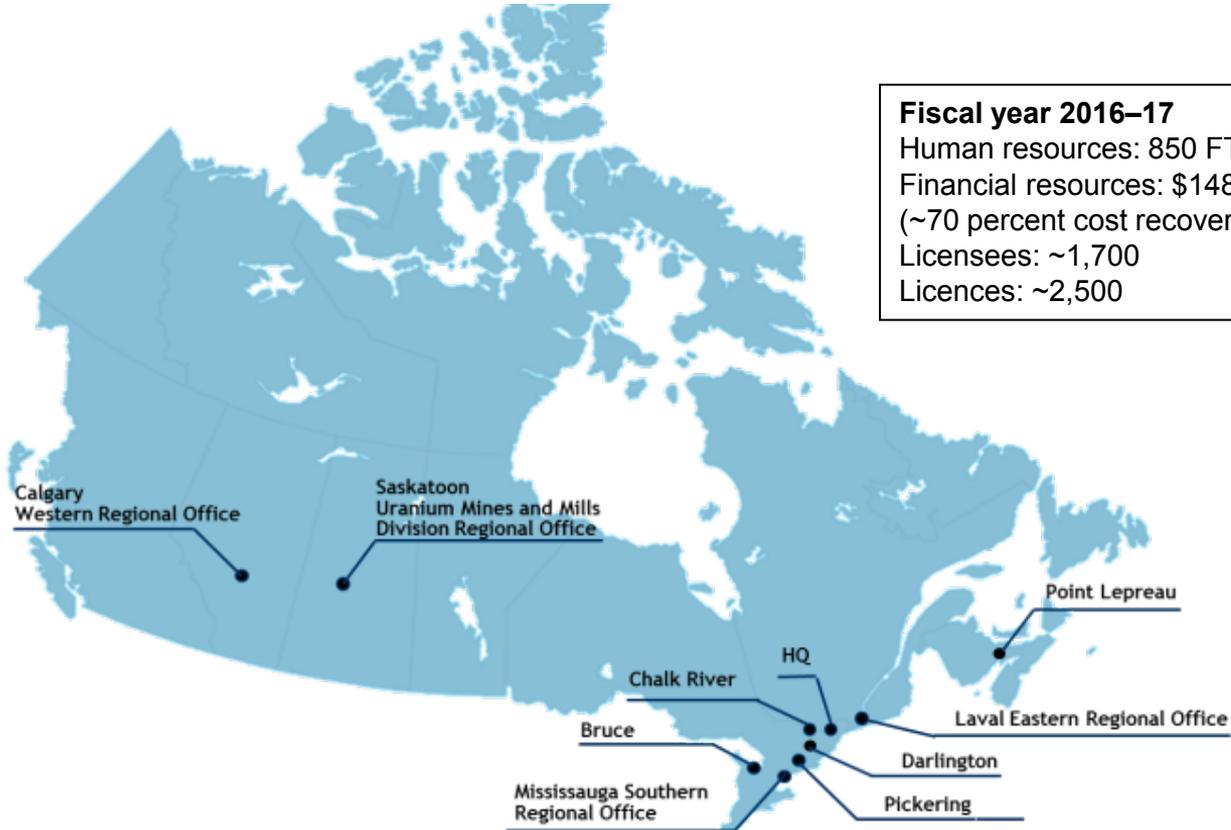
- Regulates the use of nuclear energy and materials to protect the **health, safety** and **security** of Canadians and the **environment**
- Implements Canada's **international commitments** on the peaceful use of nuclear energy
- **Disseminates objective scientific, technical and regulatory information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



*Canada's nuclear watchdog*



# *CNSC Staff Located Across Canada*



## **Fiscal year 2016–17**

Human resources: 850 FTEs

Financial resources: \$148 million

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

Licensees: ~1,700

Licences: ~2,500



# *A Year of Change in Canada ...*

The new government has brought in new areas of focus :

1. science-based decisions
2. indigenous relations
3. environmental reviews
4. *climate change*



*...altering course*

# Update: Nuclear Power Plants

## Gentilly 2 (Québec)

- Public hearing for 10-year decommissioning licence in May 2016

## Darlington (Ontario)

- Licence to operate – 2025
- Refurbishment planned for all 4 units (\$12.8-billion investment) – to be completed by 2026
- Federal Court of Appeal dismisses appeal of environmental assessment decision on Darlington refurbishment – April 2016
- Supreme Court of Canada dismisses appeal on environmental assessment and the site preparation licence for the proposed new nuclear power reactors at Darlington – April 2016

## Bruce (Ontario)

- Licence to operate – 2020
- \$13 billion refurbishment project – to begin 2020

## Pickering (Ontario)

- Licence to operate – 2018
- Ontario Power Generation pursuing continued operation until 2024 due to refurbishments

## Point Lepreau (New Brunswick)

- Licence to operate – 2017



*Required pre-distribution of KI pills within 10 km of a NPP*



# *Update: Canadian Nuclear Laboratories and Medical Isotopes*

## **Canadian Nuclear Laboratories – Chalk River**

- Transition to government owned / contractor operated – Government priority
- Licence expires October 31, 2016
- Medical isotope production continues to be available until 2018 if license is renewed

## **Cyclotron/Non-reactor medical isotope technologies**

- Government of Canada has committed \$60M since 2010 for research and development
- Goal is to produce technetium-99m using non-reactor medical isotope technologies
- Funded approaches use cyclotrons and linear accelerators



# *Update: Uranium Mining*

## **Operating mines and mills (All in Saskatchewan)**

- Cigar Lake Mine
- Key Lake Mine
- McArthur River Mine
- McClean Lake Mine and Mill
- Rabbit Lake Mine and Mill (production suspended – April 2016)

## **Proposed projects**

- Midwest Mine - On hold (Saskatchewan)
- Kiggavik Project - On hold (Nunavut)
- Matoush Project - Québec government review of BAPE report conclusions (Québec)
- Millenium Project - On hold (Saskatchewan)





# *Update: Long-Term Waste Management*

## **Certification of new container for liquid highly enriched uranium (HEU)**

- New liquid HEU container approved July 2015
- Last phase for repatriating used HEU fuel started August 2015 – will conclude in May 2019

## **Cleanup of legacy and historic low-level radioactive waste**

- Port Hope and Port Granby projects:
  - implementation in progress; completion expected 2021–22
- Gunnar Remediation Project:
  - Commission meeting on release of licence hold point on final remediation options – September 2016
  - remediation expected to be completed by 2022

## **NWMO – Finding a high-level radioactive waste site**

- Site selection studies continue in 9 of 21 communities that have expressed interest



# Update: Deep Geologic Repository

- Proposed low and intermediate waste storage facilities in Kincardine, Ontario
- Joint review panel environmental assessment report – May 2015
- In November 2015, new Minister of Environment and Climate Change requested additional information and further studies on environmental assessment:
  1. alternate locations for the project
  2. cumulative environmental effects of the project
  3. updated list of mitigation commitments for each identified adverse effect under the *Canadian Environmental Assessment Act, 2012*
- Ontario Power Generation announced in April 2016 that it will complete further Deep Geologic Repository (DGR) studies by December 31, 2016





# First Multinational DGR Workshop

- Held in Ottawa on March 14-16, 2016
- Attended by senior and technical representatives from the nuclear regulators of Canada, Finland, France, Sweden, Switzerland and the United States
- Discussed the need to establish multinational cooperation in the licensing, siting, safety assessment and construction of DGRs



# Small Modular Reactors

- Small modular reactor (SMR) discussion paper to be released for public consultation in June 2016
  - will discuss how the CNSC would address licensing (incl. technical assessment) should an application for an SMR be submitted
- Regulations under the *Nuclear Safety and Control Act* are already suitable for regulating activities involving new reactor technologies such as SMRs
  - however, the CNSC is analyzing how requirements and guidance are to be applied to SMRs
  - need to understand where further clarifications are required
- Currently interest expressed from a number of SMR vendors for pre-licensing vendor design reviews – including for high temperature gas-cooled reactors and lead-cooled reactors
  - CNSC engaged in vendor design review (VDR) of Terrestrial Energy's Integral Molten Salt Reactor and a second VDR service agreement is being put in place for another vendor



# *International Activities*

- ***Convention on Nuclear Safety (CNS)***
  - CNS President for 7th Review Meeting, CNSC Executive Vice-President Ramzi Jammal, committed to highest participation and submission of national reports and meaningful peer review process
- **G7 Nuclear Skills Strategy Group (NSSG) meetings in Japan**
  - NSSG emphasis on nuclear safety, including improved participation by states in the CNS and the Joint Convention
  - Inclusion and support of INRA letter to International Atomic Energy Agency (IAEA) on peer reviews
- **Recent incident at KAPS 1 in India**
  - CNSC and Atomic Energy Regulatory Board sharing operating experience and lessons learned



## *International Activities (continued)*

- **International Physical Protection Advisory Service (IPPAS) mission hosted in Canada – October 2015**
  - Report made publicly available in April 2016
- **Operational Safety Review Team (OSART) mission hosted at Bruce B – November 2015**
  - Report made publicly available in April 2016
- **IAEA Director General, Mr. Yukiya Amano, visited Canada – March 2016**
- **IAEA Deputy Director General and Head of the Department of Safeguards, Mr. Tero Varjoranta, visited Canada – May 2016**



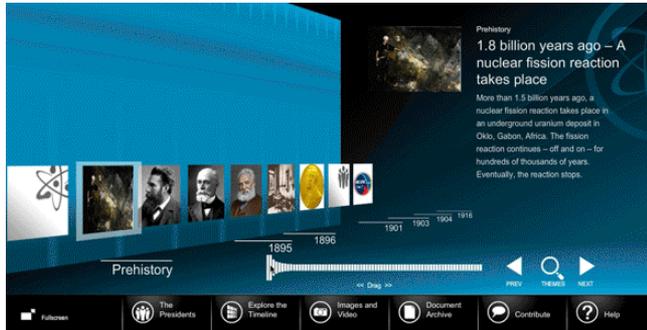
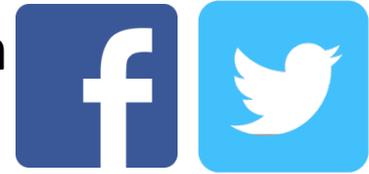
# *Upcoming activities*

- **Gentilly-2: first long-term decommissioning of a CANDU 6 power reactor**
  - Hearing took place May 5, 2016 – decision expected before June 30, 2016
- **World Nuclear University in Ottawa – June 2016**
- **OSART mission to be hosted at Pickering – September 2016**
- **Port Hope Cameco: remediation and relicensing – November 2016**



# Engaging with the public through...

70th anniversary social media campaign



The CNSC's historical timeline



*...our 70th anniversary campaign*



*Thank you*  
*Questions?*