Canadian Nuclear Safety Commission

CANADIAN NUCLEAR SAFETY COMMISSION

Ramzi Jammal
Executive Vice-President and Chief Regulatory Operations Officer
Canadian Update to the International Nuclear Regulators Association
May 17, 2018 – Gyeongju, Republic of Korea
Regulate the use of nuclear energy and materials to protect health, safety, and security and the environment

Implement Canada's international commitments on the peaceful use of nuclear energy

Disseminate objective scientific, technical and regulatory information to the public
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

Canadian Nuclear Safety Commission - nuclearsafety.gc.ca
CNSC STAFF LOCATED ACROSS CANADA

Headquarters (HQ) in Ottawa
Four site offices at power plants
One site office at Chalk River
Four regional offices

Fiscal year 2017–18
- Human resources: 857 full-time equivalents
- Financial resources: $148 million
  (~70% cost recovery; ~30% appropriation)
- Licensees: 1,700
- Licences: 2,500
INDEPENDENT COMMISSION

TRANSPARENT, SCIENCE-BASED DECISION MAKING

- Quasi-judicial administrative tribunal
- Agent of the Crown (duty to consult)
- 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 by Federal Court
COMMISSION MEMBERS

MR. TIMOTHY BERUBE
Appointed
Mar 12, 2018
Four-year Term

DR. SANDOR DEMETER
Reappointed
Mar 12, 2018
Five-year Term

DR. MARCEL LACROIX
Appointed
Mar 12, 2018
Four-year Term

MS. KATHY PENNEY
Appointed
Mar 12, 2018
Four-year Term

MS. RUMINA VELSHI
Reappointed
Mar 12, 2018
Five-year Term
CANADA’S MINES AND MILLS
MINING OPERATIONS

ACTIVE MINING OPERATIONS (SASKATCHEWAN):

- Key Lake Mill (Cameco)
- McArthur River Mine (Cameco)
- Rabbit Lake Mine/Mill (Cameco)
  - announced suspension – April 2016
- Cigar Lake Mine (Cameco)
- McClean Lake Mine/Mill (Orano)
  - licence renewed until June 30, 2027

On 10-month suspension starting Feb 1, 2018

Increased interest in exports to China and India
Global price not supportive of production – Low demand and oversupply

Above: Key Lake Mill, below: McArthur River Mine
MINING PROJECTS (NORTHERN SASKATCHEWAN):

Environmental assessment review complete:
- Midwest (northern Saskatchewan) (Orano)
  - awaiting application

Projects under review
- Millennium (northern Saskatchewan)
  - on hold for economic reasons
  - tailings management inspections ongoing

Above: Midwest Project, below: Millennium Project
CANADA’S NUCLEAR POWER PLANTS
CANADA’S NUCLEAR POWER PLANTS

BRUCE NUCLEAR GENERATING STATION (ONTARIO)


Bruce Nuclear Generation Station, Bruce A (top), Bruce B (bottom)
DARLINGTON NUCLEAR GENERATING STATION (ONTARIO)

- Licence expires on November 30, 2025
- Refurbishment project began in October 2016 and is scheduled for completion by 2026

Aerial view Darlington Nuclear Generating Station
CANADA’S NUCLEAR POWER PLANTS

PICKERING NUCLEAR GENERATING STATION (ONTARIO)

- Licence expires on August 31, 2018
- Application for a 10-year licence renewal during which time Pickering will undergo permanent shutdown. Public Commission Hearing (Part 2) scheduled for June 26-28, 2018

Aerial view Pickering Nuclear Generating Station
CANADA’S NUCLEAR POWER PLANTS

POINT LEPREAU NUCLEAR GENERATING STATION (NEW BRUNSWICK)

- Licence expires on June 30, 2022
- Refurbishment completed – Returned to service November 2012
CANADIAN NUCLEAR LABORATORIES

CHALK RIVER LABORATORIES (ONTARIO)

- Licence expires on March 31, 2028
- Commission hearing for renewal of Chalk River Laboratories’ operating licence took place in January 2018
THREE ENVIRONMENTAL ASSESSMENTS UNDER WAY FOR DECOMMISSIONING PURPOSES

• Near Surface Disposal Facility Project (Chalk River)
• Decommissioning of the Whiteshell Reactor #1 (Pinawa)
• Nuclear Power Demonstration Closure Project (Rolphton)
WASTE MANAGEMENT
WASTE MANAGEMENT

OPG WASTE MANAGEMENT FACILITIES

• **Western** – Licence valid until May 31, 2027
• **Pickering** – Licence valid until August 31, 2027
• **Darlington** – Licence valid until April 30, 2023

OPG Used Fuel DSC’s stored at the Western Waste Management Facility
PORT HOPE AREA INITIATIVE (PHAI)

Port Hope and Port Granby – Implementation phase (facility construction ongoing)

- Port Hope waste nuclear substance licence – Valid until December 31, 2022
- Port Granby waste nuclear substance licence – Valid until December 31, 2021
• Joint Review Panel environmental assessment report – May 2015
• In November 2015, Minister of Environment and Climate Change requested additional information and further studies on environmental assessment
• On August 21, 2017, the Minister requested additional information from OPG on the potential cumulative effects of the DGR project on physical and cultural heritage of the Saugeen Ojibway Nation (SON) – the SON considers this as reconciliation in action
There are 5 communities remaining in the NWMO’s learn more process (out of 22 original communities – 19 in Ontario, 3 in Saskatchewan)

- **2023** – A single preferred site is identified
- **2028** – Licence applications submitted
- **2040 to 2045** – Operations begin
MODERNIZING REGULATORY FRAMEWORK

Fukushima Action Plan — Regulations

- Regulations governing Class I facilities, uranium mines and mills, radiation protection Cabinet approved – published in the Canada Gazette, Part II on October 4, 2017

Regulatory modernization — Regulatory documents

- Discussion paper DIS-16-04, Small Modular Reactors – What We Heard Report published September 2017
- Discussion paper DIS-16-03, Radioactive Waste Management and Decommissioning – What We Heard Report published December 2017
- Discussion paper DIS-17-01, Framework for Recovery in the Event of a Nuclear or Radiological Emergency – Public comment period closed in January 2018
- REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Drug and Alcohol Use – Published December 2017
- REGDOC-2.1.2, Safety Culture – Published April 2018
- REGDOC-2.11.1, Waste Management, Volume II: Assessing the Long Term Safety of Radioactive Waste Management – Published May 2018
- REGDOC-1.1.5, Licence Application Guide for Licensing SMR Facilities – Publication forthcoming
New legislation tabled, covering Bill C-68: To amend the *Fisheries Act*

**Bill C-69:** To enact the *Impact Assessment Act and the Canadian Energy Regulator Act*, to amend the Navigation Protection Act – Important component yet to come: Project list

**Generation Energy led by Minister of Natural Resources**  
– Nuclear is part of the mix

14-member Generation Energy Council created in December 2017 to prepare report to inform the development of Canada’s energy policy and energy future
Cabinet Committee on Diversity and Inclusion looks at initiatives to strengthen relationships with Indigenous Canadians

Working group of six ministers to ensure that Canada’s laws, policies and programs protect Aboriginal and treaty rights

United Nations Declaration on the Rights of Indigenous Peoples
– Free, prior and informed consent Prime Minister’s speech on February 14, 2018 and commitment to support Bill C-262

CNSC’s Indigenous engagement forums – more formal, and structured approach
– will continue to strengthen relationships with Indigenous peoples in Canada
Small modular reactors (SMRs)

- Expression of interest from ten vendors for vendor design reviews
- The CNSC completed the Phase 1 review for Terrestrial Energy’s 400-thermal-megawatt integral molten salt reactor in late 2017
- The CNSC participating in the pan-Canadian SMR Roadmap and associated workshops
- A draft Licence Application Guide for Licensing SMR Facilities will be published soon for comment

Regulatory safety oversight culture assessment

- Report completed and shared with staff in February 2018
- Compared the CNSC against the NEA’s The Safety Culture of an Effective Nuclear Regulatory Body
- Includes five recommendations as well as management responses to each

Peer Review Missions

- Canada will host an IAEA Emergency Preparedness Review (EPREV) Service Mission in early 2019
- The CNSC to request an IAEA review mission for radioactive waste and spent fuel management, decommissioning and remediation programs (ARTEMIS) to review the safety cases for CNL’s proposed major projects

- May 20 – June 1, 2017 in Vienna
- Canada submitted and published its national report and questions & answers from other Contracting Parties

IAEA technical meeting to share experience on implementing safety improvements at existing NPPs

- June 11 – 14, 2018 in Vienna
- The CNSC’s Executive Vice-President and Chief Regulatory Operations Officer to chair the technical meeting

62nd General Conference of the International Atomic Energy Agency

- September 17 – 21, 2018 in Vienna

International Symposium on Communicating Nuclear and Radiological Emergencies to the Public

- October 1–5, 2018 in Vienna
- Chaired by CNSC Vice-President Jason Cameron

Organizational Meeting of the 8th Review Meeting of the Convention on Nuclear Safety

- October 17, 2018 in Vienna
- Election of Officers and identification of topics for the next Review Meeting
ITEMS FOR INRA DISCUSSION

*In situ* decommissioning

Regulatory OPEX
“We will never compromise safety…

…it’s in our DNA”