# CANADIAN UPDATE

**Ms. Rumina Velshi**
President and CEO, Canadian Nuclear Safety Commission

## Presentation to the 44th International Nuclear Regulators Association (INRA) Meeting

**Bath, UK**
May 21, 2019 – 2:00 p.m.

e-Doc 5867817

# CANADIAN NUCLEAR SAFETY COMMISSION (CNSC)

## OUR MANDATE

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

# THE CNSC REGULATES ALL NUCLEAR FACILITIES AND ACTIVITIES IN CANADA

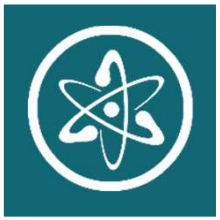
Uranium mines and mills

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

## OVER THEIR FULL LIFECYCLE

# ORG STRUCTURE AND LEGISLATED RELATIONSHIPS

**CANADIAN NUCLEAR SAFETY COMMISSION**

Rumina Velshi

CEO | President

**Staff Organization**

Legal Services
Regulatory Operations Branch
Technical Support Branch
Regulatory Affairs Branch
Corporate Services Branch

**The Commission**

Dr. Sandor Demeter
Mr. Timothy Berube
Ms. Kathy Penney
Dr. Marcel Lacroix

**Minister**

**NATURAL RESOURCES CANADA**
Leads development and implementation of federal nuclear energy policy

**PARLIAMENT**
Nuclear energy is under federal jurisdiction

# INDEPENDENT COMMISSION

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

Decisions are reviewable by Federal Court

## TRANSPARENT, SCIENCE-BASED DECISION MAKING

# CNSC STAFF LOCATED ACROSS CANADA

**LICENSEES:** 1,700
**LICENCES:** 2,500

Headquarters (HQ) in Ottawa

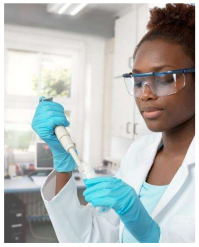
4 site offices at power plants

1 site office at Chalk River

4 regional offices

# CNSC PRIORITIES

- **A MODERN APPROACH TO NUCLEAR REGULATION**
- **BE A TRUSTED REGULATOR**
- **MAINTAIN OUR GLOBAL NUCLEAR INFLUENCE**
- **IMPROVE MANAGEMENT EFFECTIVENESS**

Increase women and girls' participation in STEM

# STATUS OF CANADA'S NUCLEAR GENERATING STATIONS

## BRUCE NGS A & B (ONTARIO)

- Licence expires on September 30, 2028
- Eight operating reactors, **6,232 MWe** capacity
- Refurbishment plan: two completed; six to be carried out by 2033

## PICKERING NGS (ONTARIO)

- Licence expires on August 31, 2028
- Six operating reactors, **3100 MWe** capacity
- Permanent shutdown in 2024

## DARLINGTON NGS (ONTARIO)

- Licence expires on November 30, 2025
- Three operating reactors + one refurbishment, **3,512 MWe** capacity
- Refurbishment project began in October 2016: scheduled for completion by 2026
- Licence to prepare site (for new build): expires in 2022

## POINT LEPREAU NGS (NEW BRUNSWICK)

- Licence expires on June 30, 2022
- One operating reactor, **705 MWe** capacity
- Refurbishment completed: returned to service in November 2012

# STATUS OF SMALL MODULAR REACTORS (SMRs) IN CANADA

- Expression of interest from 11 vendors for vendor design reviews
- The CNSC participated as an observer in the pan-Canadian SMR Roadmap and associated workshops; Roadmap was released in November 2018
- A draft licence application guide for SMR facilities will be published in spring 2019

## CURRENT OPERATOR INTEREST

- Canadian Nuclear Laboratories (CNL) has invited potential vendors to advance to the Due Diligence stage for an SMR demonstration project
- Government of New Brunswick investing in nuclear research cluster; NB Power has identified two potential SMR vendors

Example of an SMR technology: Terrestrial Energy Integral Molten Salt Reactor (Courtesy of Terrestrial Energy)

**THE CNSC RECEIVED THE FIRST APPLICATION FOR A LICENCE TO PREPARE A SITE ON MARCH 20, 2019**

# STATUS OF CANADA'S URANIUM MINES AND MILLS

## ACTIVE URANIUM MINING OPERATIONS (SASKATCHEWAN)

- Cigar Lake Mine (Cameco)
  - licence expires on June 20, 2021
- McClean Lake Mine/Mill (Orano)
  - licence renewed until June 30, 2027
- Key Lake Mill (Cameco)
- McArthur River Mine (Cameco)
- Rabbit Lake Mine/Mill (Cameco)

} Operations indefinitely suspended

## Two new applications received

NexGen Energy and Denison Mines

Key Lake Mill

McArthur River Mine

# STATUS OF CANADIAN NUCLEAR LABORATORIES' PROJECTS

## 10-YEAR SITE LICENCE ISSUED JANUARY 2018

Chalk River Laboratories
Chalk River, Ontario

## ONGOING ENVIRONMENTAL ASSESSMENTS

Near Surface Disposal Facility (NSDF) Project
Chalk River, ON

Decommissioning of the Whiteshell Reactor #1
Pinawa, MB

Nuclear Power Demonstration (NPD) Closure Project
Rolphton, ON

Chalk River Laboratories

Proposed Near Surface Disposal Facility, CRL

# STATUS OF WASTE MANAGEMENT FACILITIES / INITIATIVES IN CANADA

## ONTARIO POWER GENERATION (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

## PORT HOPE AREA INITIATIVE

**Port Hope and Port Granby** – Implementation phase by CNL (remediation ongoing)

- Port Hope waste nuclear substance licence – Valid until December 31, 2022
- Port Granby waste nuclear substance licence – Valid until December 31, 2021


OPG used fuel dry storage containers at the Western Waste Management Facility

# STATUS OF DEEP GEOLOGIC REPOSITORIES (DGRs) IN CANADA

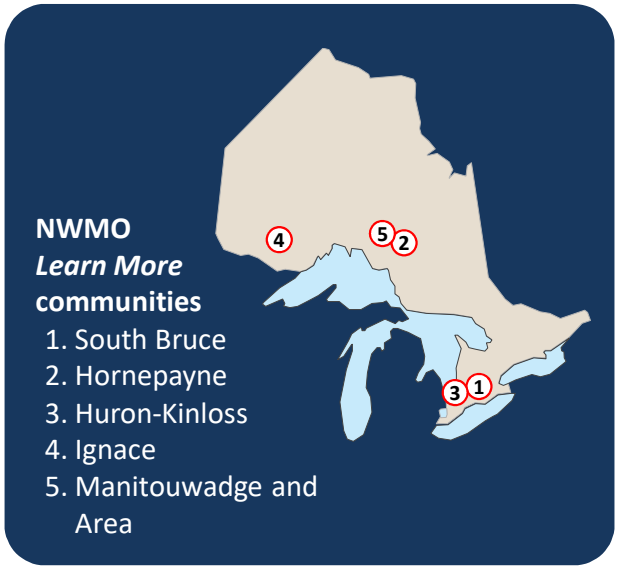
## OPG'S DGR FOR LOW-LEVEL AND INTERMEDIATE-LEVEL WASTE

- Joint review panel environmental assessment (EA) report submitted – May 2015
- EA decision by Minister of Environment and Climate Change pending additional information from OPG on the potential cumulative effects of the project on Indigenous rights and interests

## SITE SELECTION OF DGR FOR USED NUCLEAR FUEL

Five communities remain in the Nuclear Waste Management Organization's *Learn More Program*
(22 communities originally under consideration – 19 in Ontario, 3 in Saskatchewan)

- 2023 – A single preferred site is identified
- 2028 – Licence application submitted
- 2040 to 2045 – Operations begin



# OTHER LICENSED FACILITIES AND ACTIVITIES IN CANADA

## ISOTOPE PRODUCTION

- In May 2018, OPG formally notified the CNSC of its intent to irradiate molybdenum-99 targets at Darlington NGS
- Detailed design has started and will be submitted along with the safety case for CNSC review in 2019–20

## NUCLEAR FACILITIES / PRESCRIBED EQUIPMENT

Hospitals, cancer clinics, particle accelerators

## NUCLEAR SUBSTANCE LICENCES

Industrial, research, radiography, etc.

## UNIVERSITY AND RESEARCH LABORATORIES

**OVER 2,000 LICENCES ACROSS CANADA — MEDICAL, INDUSTRIAL, RESEARCH**

# INTERNATIONAL COLLABORATION – PEER REVIEW MISSIONS

## IAEA EMERGENCY PREPAREDNESS REVIEW SERVICE MISSION (EPREV) – JUNE 2019

- Canada is the first G7 country to request an EPREV mission
- The mission will assess operators' and all levels of governments' nuclear emergency preparedness plans and procedures for Canadian nuclear facilities
- Visit to OPG in Durham Region, Toronto provincial emergency operations and locations in New Brunswick will be included

## IAEA INTEGRATED REGULATORY REVIEW SERVICE (IRRS) MISSION IN CANADA – SEPTEMBER 2019

- The CNSC has requested this mission, and some modules of the IRRS review are expected to focus on Canada's approach to waste management
- Tours to Pickering and Darlington will likely take place – review will impact Government of Canada more than OPG

# REGULATORY INITIATIVES

**New environmental / impact assessment process**
In the legislative review process; would change the CNSC's role in assessments

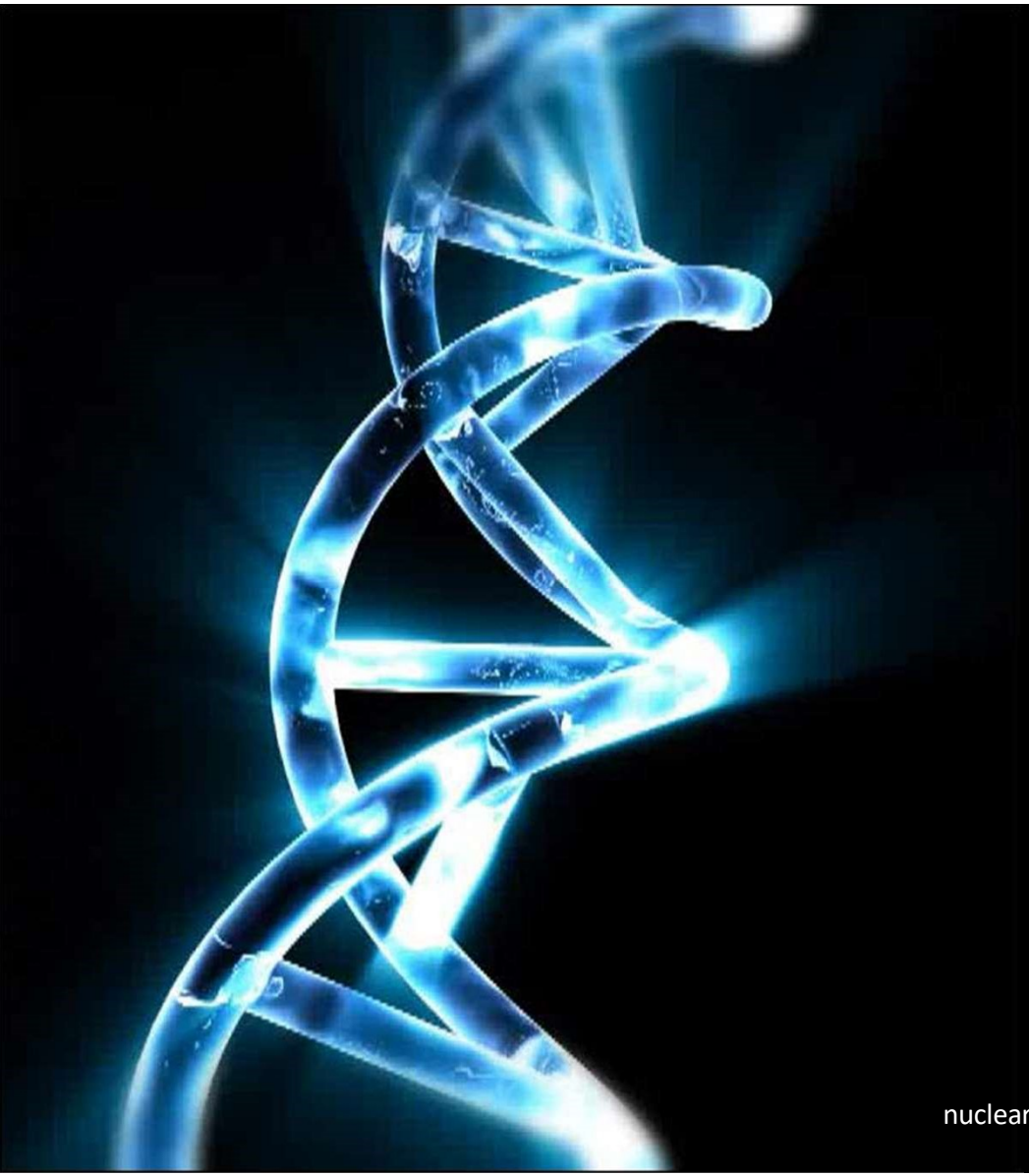
**Random drug and alcohol testing**
Implementing regulatory document: *Fitness for Duty, Volume II: Managing Alcohol and Drug Use*

**Indigenous engagement**
Establish ongoing, strong relationships

**Regulatory safety culture**
Sharing and implementing the lessons from our journey

**Innovation and collaboration**
Readiness to respond to technological advancements

**Civil society engagement**
Create forum for exchanging information, perspectives, ideas …



# “Safety: It’s in our DNA”

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