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# CANADA'S NUCLEAR REGULATOR – UPDATE

**Rumina Velshi**

President and CEO, Canadian Nuclear Safety Commission

Presentation to OPG's Generation Oversight Committee

November 14, 2018 Toronto, Canada

[nuclearsafety.gc.ca](http://nuclearsafety.gc.ca)



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada



- Canadian Nuclear Safety Commission (CNSC) overview
- Status of OPG-related nuclear regulatory activities
- Update on key files and regulatory activities
- My priorities as the new CNSC President
- Closing remarks

# CANADIAN NUCLEAR SAFETY COMMISSION



## OUR MANDATE

Regulate the use of nuclear energy and materials to protect **health, safety, 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

**MORE THAN 70 YEARS OF REGULATORY EXPERIENCE**

# INDEPENDENT COMMISSION



Ms. Rumina  
Velshi



Dr. Sandor  
Demeter



Ms. Kathy  
Penney



Dr. Marcel  
Lacroix



Mr. Timothy  
Berube

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**



# STATUS OF OPG-RELATED NUCLEAR REGULATORY ACTIVITIES

# PICKERING NGS



- Licence expires August 2028
- 6 operating reactors, 3100 MWe capacity
- Permanent shutdown in 2024

## MAJOR RELICENSING HEARING IN 2018

- 156 interventions received
- \$97,633 in participant funding made available to 9 recipients
- Highlighted communities' concerns relating to:
  - emergency preparedness
  - safety of aging plant
  - environmental concerns
  - decommissioning and management of waste
  - inadequate access to documentation
  - certainty regarding permanent shutdown

# PICKERING NGS

## CNSC STAFF RATINGS PRESENTED TO THE COMMISSION ON NOVEMBER 8, 2018

- All safety ratings remain the same as in previous year
- Overall rating is “fully satisfactory”

IEMP RESULTS INDICATE THAT THE PUBLIC AND THE ENVIRONMENT ARE PROTECTED AND THAT THERE ARE NO HEALTH IMPACTS

Safety and control areas (SCA)	2016	2017
Management system	SA	SA
Human performance management	SA	SA
Operating performance	FS	FS
Safety analysis	FS	FS
Physical design	SA	SA
Fitness for service	SA	SA
Radiation protection	SA	SA
Conventional health and safety	FS	FS
Environmental protection	SA	SA
Emergency management and fire protection	SA	SA
Waste management	FS	FS
Security	SA	SA
Safeguards and non-proliferation	SA	SA
Packaging and transport	SA	SA
<b>Overall rating</b>	<b>FS</b>	<b>FS</b>

# DARLINGTON NGS



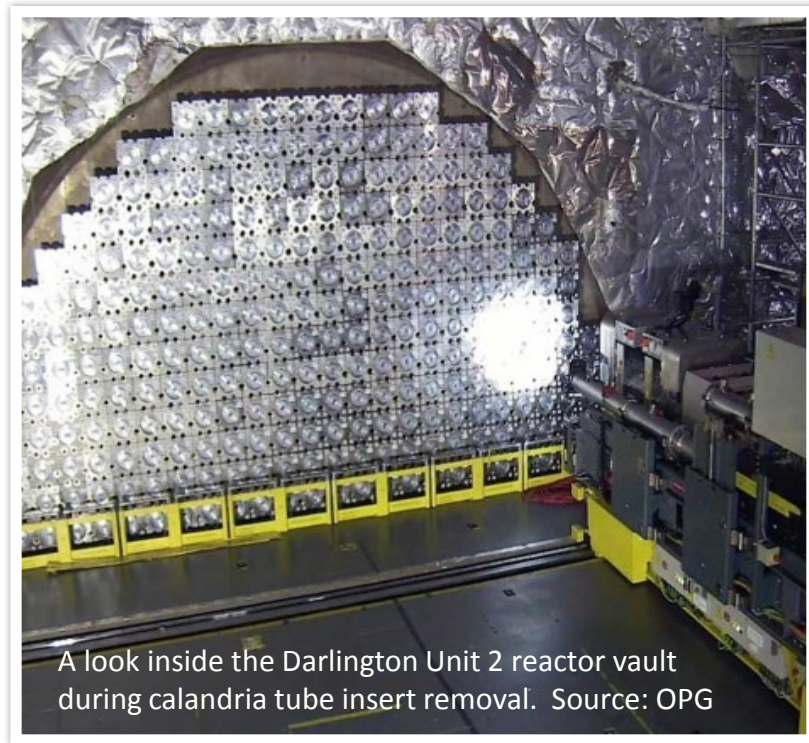
- Licence expires November 2025
- 3 operating reactors + 1 refurbishment, 3512 MWe capacity
- All 4 reactors expected to be refurbished by 2026
- New-build licence to prepare site expires 2022

## ISOTOPE PRODUCTION

- In May 2018, OPG formally notified the CNSC of its intent to produce molybdenum-99
- The Conceptual Design Report for the irradiation system and schedule for the project are expected to be submitted to the CNSC in November 2018 for review
- Detailed design has started and will be submitted along with the safety case for CNSC review in 2019



# DARLINGTON NGS



A look inside the Darlington Unit 2 reactor vault during calandria tube insert removal. Source: OPG

## DARLINGTON REFURBISHMENT

- The CNSC continues to monitor the refurbishment of Unit 2 while the 3 other reactors continue operations
- Safety should never be compromised to meet economic and scheduling pressures
- Any changes to the Integrated Implementation Plan will need Commission approval; the process is currently being developed by the CNSC

# DARLINGTON NGS

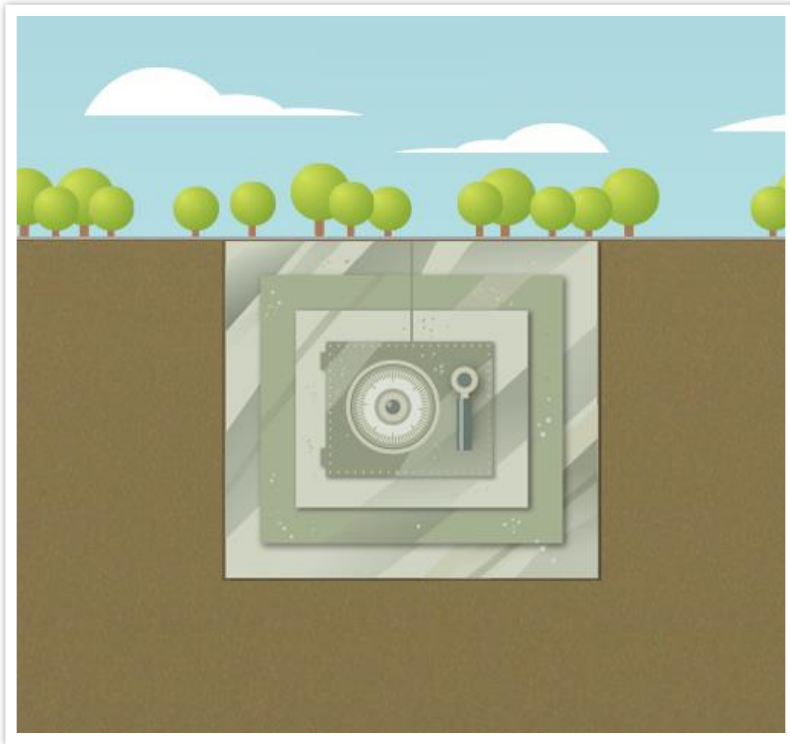
## CNSC STAFF RATINGS PRESENTED TO THE COMMISSION ON NOVEMBER 8, 2018

- Radiation protection SCA rating has shifted from “fully satisfactory” to “satisfactory”
- Conventional health and safety SCA rating has returned to “fully satisfactory”
- Overall rating remains “fully satisfactory”

**IEMP RESULTS INDICATE THAT THE PUBLIC AND THE ENVIRONMENT ARE PROTECTED AND THAT THERE ARE NO HEALTH IMPACTS**

Safety and control areas (SCA)	2016	2017
Management system	SA	SA
Human performance management	SA	SA
Operating performance	FS	FS
Safety analysis	FS	FS
Physical design	SA	SA
Fitness for service	SA	SA
Radiation protection	FS	SA↓
Conventional health and safety	SA	FS↑
Environmental protection	SA	SA
Emergency management and fire protection	SA	SA
Waste management	FS	FS
Security	SA	SA
Safeguards and non-proliferation	SA	SA
Packaging and transport	SA	SA
<b>Overall rating</b>	<b>FS</b>	<b>FS</b>

# DEEP GEOLOGIC REPOSITORY



- Proposal for a low- and intermediate-level facility on Bruce nuclear site
- EA was completed in 2015
- Decision from Minister of Environment and Climate Change Canada pending additional information from OPG on undertakings with the Saugeen Ojibway Nation (SON)



# UPDATE ON KEY FILES AND REGULATORY ACTIVITIES

# CANADIAN NUCLEAR LABORATORIES EAs



## THREE ENVIRONMENTAL ASSESSMENTS UNDERWAY FOR DECOMMISSIONING PURPOSES

1. Near Surface Disposal Facility (NSDF) Project (Chalk River)
2. Nuclear Power Demonstration (NPD) Closure Project (Rolphton)
3. Decommissioning of Whiteshell Reactor #1 (Pinawa)

## EA PROCESS DELAYED

Proponent to respond to consolidated federal and provincial information requests

Main issues: characterization of waste, Indigenous consultation

## IMPLICATIONS FOR OPG

Do not take local communities and Indigenous groups for granted  
Meaningful engagement and communication early on is key

OPG should focus engagement activities for Pickering in advance of end of operations and decommissioning  
Maintain open dialogue with local community about Pickering waste and decommissioning

# SMALL MODULAR REACTORS (SMRs)



## SIGNIFICANT INTEREST IN CANADA

- Growing interest from utility and federal/provincial governments for SMR applications
- SMR Roadmap being led by Natural Resources Canada to identify and align opportunities for Canada
  - the CNSC was an observer providing regulatory clarity in the SMR Roadmap process
  - Roadmap report was made public on November 7 at Canada's 1st International Conference on Generation IV and Small Reactors (G4SR)
  - numerous recommendations were made for government, regulators and industry

## REGULATORY READINESS

- CNSC pre-licensing Vendor Design Review (VDR) service
- **REGDOC-1.1.5**, *Licence Application Guide: Small Modular Reactor Facilities* – consultation closed September 2018

# SMALL MODULAR REACTORS (SMRs)

## CNSC IS READY TO LICENSE

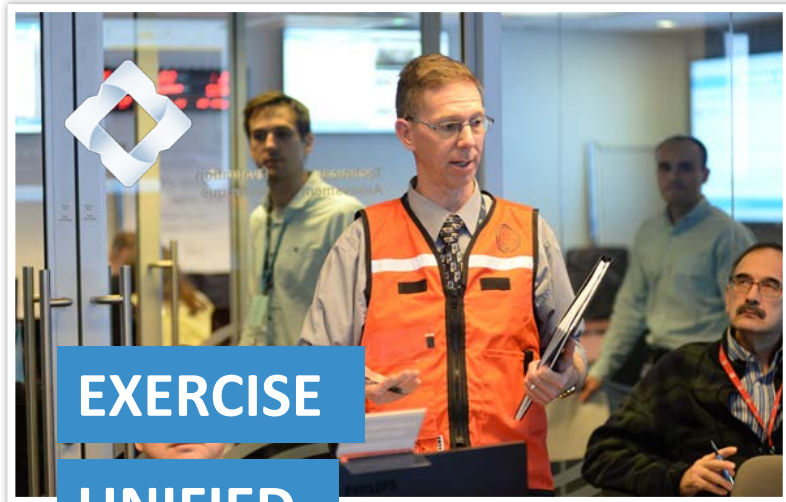
- Currently 10 VDR applications submitted to the CNSC by potential SMR vendors
- All VDRs are at different stages of the review
- The best VDR applications have identified an operating partner

## CURRENT OPERATOR INTEREST

- Canadian Nuclear Laboratories (CNL) – Request for expression of interest (RFEOI) for SMR demonstration project, proposes to host an SMR by 2026
- New Brunswick government investing in nuclear research cluster; NB Power has identified two potential SMR vendors

**OPG HAS ANNOUNCED IT IS PARTNERING WITH NUSCALE  
TO SUPPORT SMRs IN CANADA**

# EMERGENCY PREPAREDNESS



**EXERCISE**

**UNIFIED**

**CONTROL**

**MORE WORK IS NEEDED  
TO INCREASE THE PUBLIC'S  
KNOWLEDGE AND UNDERSTANDING  
OF EMERGENCY MANAGEMENT**

## EMERGENCY EXERCISES

- Exercise Unified Control took place December 6–7, 2017 at Pickering NGS
- Exercise Synergy Challenge took place October 3–4, 2018 at Point Lepreau NGS

## EMERGENCY PREPAREDNESS

- PNERP approved in December 2017
  - Implementing plans for Pickering approved
  - Darlington Implementing Plan should be approved in fall 2018
- Potassium iodide (KI) pill redistribution being examined



# MODERNIZING OUR REGULATORY FRAMEWORK

## IMPLEMENTATION OF REGDOC-2.2.4, *FITNESS FOR DUTY, VOLUME II: MANAGING ALCOHOL AND DRUG USE*

- Licensees indicated that they will implement all measures except random testing by July 1, 2019; random testing is to be implemented by December 1, 2019
- Unions are opposed to alcohol and drug testing, and in particular, random testing

## REGULATORY MODERNIZATION – UPCOMING REGULATIONS OF INTEREST

- ***Radiation Protection Regulations*** – targeted for pre-publication in the Canada Gazette, Part I in fall 2019
- **Regulatory proposal to amend the *General Nuclear Safety and Control Regulations (GNSCR)* and the *Nuclear Non-proliferation Import and Export Control Regulations (NNIECR)*** – targeted for pre-publication in the Canada Gazette, Part I in late fall 2019

## UPCOMING CNSC REGULATORY DOCUMENTS

- **REGDOC-3.3.1, *Financial Guarantees*** – planned consultation end of 2018
- **REGDOC-2.11.2, *Decommissioning Planning*** – planned consultation in 2019

CLARITY OF REQUIREMENTS IS IMPORTANT

# INTERNATIONAL ENGAGEMENT

## **IAEA Emergency Preparedness Mission (EPREV) – Spring 2019**

- The mission will assess operators' and all levels of governments' nuclear emergency preparedness plans and procedures for Canadian nuclear facilities
- Visit to Darlington will take place

## **Integrated Regulatory Review Service (IRRS) mission to be hosted in Canada – 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

## **Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management**

- Sixth review meeting was held in spring 2018
- Industry involvement was appreciated, especially on issues related to waste

## **IAEA 62nd General Conference – September 2018**

- Ambassador Heidi Hulan led Canadian delegation

**INDUSTRY SUPPORT IS A KEY COMPONENT**

# GOVERNMENT LEGISLATIVE REFORMS

## RESTORING TRUST IN ENVIRONMENTAL ASSESSMENTS

- Bill C-69: *To enact the Impact Assessment Act and the Canadian Energy Regulator Act, to amend the Navigation Protection Act* – Second Reading in Senate, September 2018
  - Minister of Environment and new Impact Assessment Agency of Canada will be accountable for impact assessments; will conduct integrated reviews with lifecycle regulators
  - Important consultations yet to come: Project List, Timelines, Developing A Strategic Assessment of Climate Change
- Bill C-68: *To amend the Fisheries Act* – First Reading in Senate, June 2018

## IMPORTANT FOR OPG TO PARTICIPATE

# INDIGENOUS RECONCILIATION

## PRIORITY OF THE GOVERNMENT OF CANADA

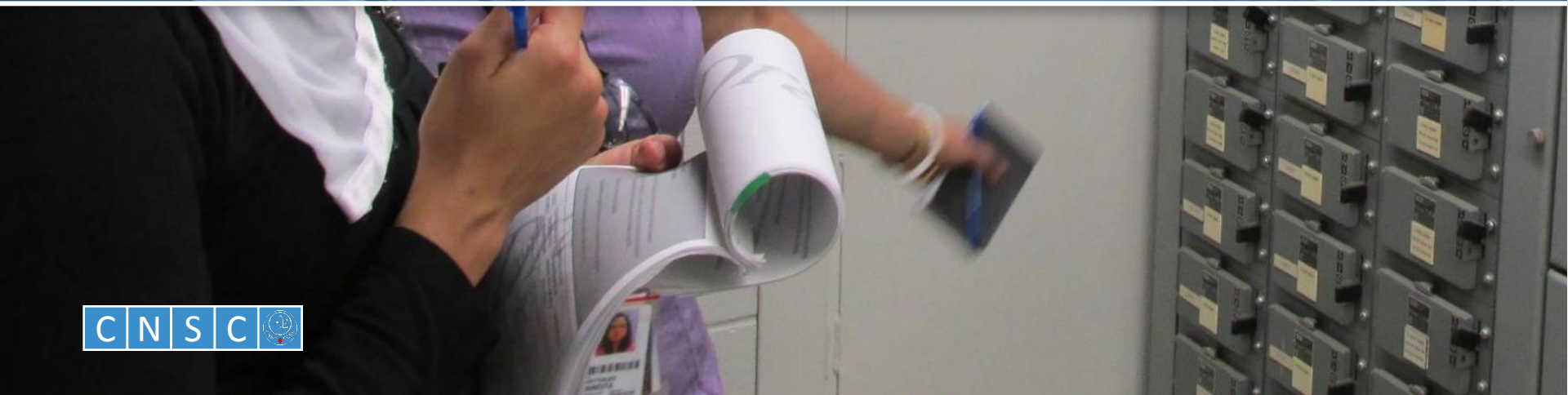
- **Prime Minister's speech** on February 14, 2018 – Recognition and implementation of Indigenous Rights Framework
- **Commitment to support Bill C-262**, *An Act to ensure that the laws of Canada are in harmony with the United Nations Declaration on the Rights of Indigenous Peoples* (includes principle of free, prior and informed consent – First Reading in the Senate, May 2018)
- **Cabinet Committee on Reconciliation** formed on August 28, 2018 looks at initiatives to strengthen relationships with Indigenous peoples in Canada
- **Change in government machinery** – Indigenous and Northern Affairs Canada divided into two departments, Crown-Indigenous Relations and Indigenous Services, with two new ministers

## PRIORITY FOR THE CNSC

- **REGDOC-3.2.2**, *Aboriginal Engagement* published by the CNSC in 2016
- **Strategy for strengthening long-term relationship** – Implementing a more formal and structured engagement approach throughout the licence period will help to strengthen relationships with Indigenous peoples



# MY PRIORITIES AS THE NEW CNSC PRESIDENT



# CNSC ASPIRES TO BE A WORLD-CLASS REGULATOR

## SAFETY IS OUR HIGHEST PRIORITY

- Independent
- Flexible, robust regulatory framework
- Well-resourced with the capacity, expertise and agility to regulate effectively
- Forward-looking to stay ahead of the technological curve – ready for emerging technologies



### SMART GLASS

Nuclear industry experimenting with smart glasses that display real-time radiation levels



### DRONES

OPG first used unmanned aerial vehicles to inspect Darlington's vacuum building

# STRENGTHENING PUBLIC TRUST

## TRANSPARENCY

- Open/responsive and understandable information

## ACTIVE LISTENING

- Sincere two-way dialogue

## ENGAGEMENT

- Public
- Civil society
- NGOs
- Indigenous groups
- Domestic and international counterparts



# EMPLOYER OF CHOICE



## EARNING THE COMMITMENT OF CNSC EMPLOYEES

- Safe work environment
- Respect and support
- Enriching, energizing and meaningful careers
- Opportunities for growth
- Competitive compensation and benefits





# STRENGTHENING SAFETY CULTURE

- Strong safety culture in licensees' nuclear operations
- CNSC strengthening its regulatory safety oversight culture
- Need to ensure strong safety culture at licensees' senior executive/Board levels



# PROMOTING WOMEN IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH (STEM) CAREERS





**Thank you!**  
Questions?

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