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Canadian Nuclear Safety Commission

Ms. Rumina Velshi

President and CEO, Canadian Nuclear Safety Commission

Presentation to the Board of Management of TRIUMF

April 26, 2019



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada

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



INDEPENDENT COMMISSION

Quasi-judicial administrative tribunal

Agent of the Crown (duty to consult)

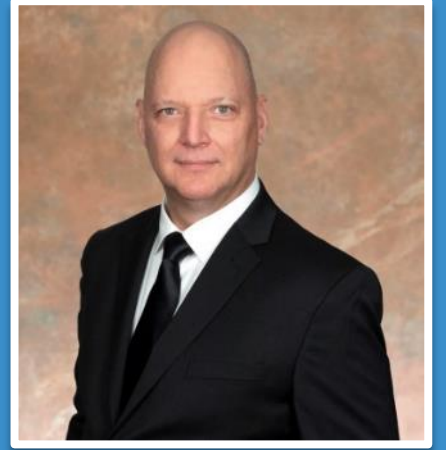
Reports to Parliament through Minister of Natural Resources

Commission members are independent and part-time

Commission hearings are public and webcast

Decisions are reviewable by Federal Court

TRANSPARENT, SCIENCE-BASED DECISION MAKING



Ms. Rumina Velshi

**Reappointed and
named President
and CEO for a
five-year term
effective
August 22, 2018**

Dr. Sandor Demeter

**Reappointed
March 12, 2018
Five-year term**

Dr. Marcel Lacroix

**Appointed
March 12, 2018
Four-year term**

Ms. Kathy Penney

**Appointed
March 12, 2018
Four-year term**

Mr. Timothy Berube

**Appointed
March 12, 2018
Four-year term**

THE CNSC REGULATES ALL NUCLEAR FACILITIES AND ACTIVITIES IN CANADA



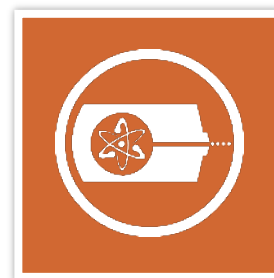
Uranium mines and mills



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

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

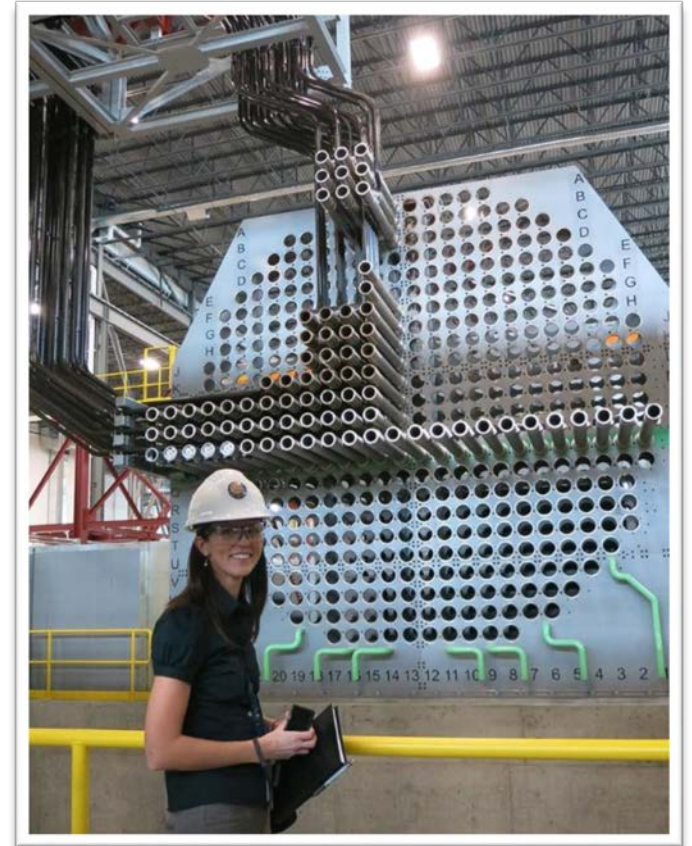
4 regional offices



CNSC PRIORITIES

1. A MODERN APPROACH TO NUCLEAR REGULATION

- Employ science-based, risk-informed and technically sound regulatory practices
- Evaluate the regulatory implications of new and innovative nuclear technologies
- Ensure there is a culture that encourages openness, professionalism and respect



CNSC PRIORITIES

2. BE A TRUSTED REGULATOR

- Be recognized by the public, Indigenous peoples and industry as independent, competent and transparent
- Be seen as a credible source of scientific, technical and regulatory information



CNSC PRIORITIES

3. MAINTAIN OUR GLOBAL NUCLEAR INFLUENCE

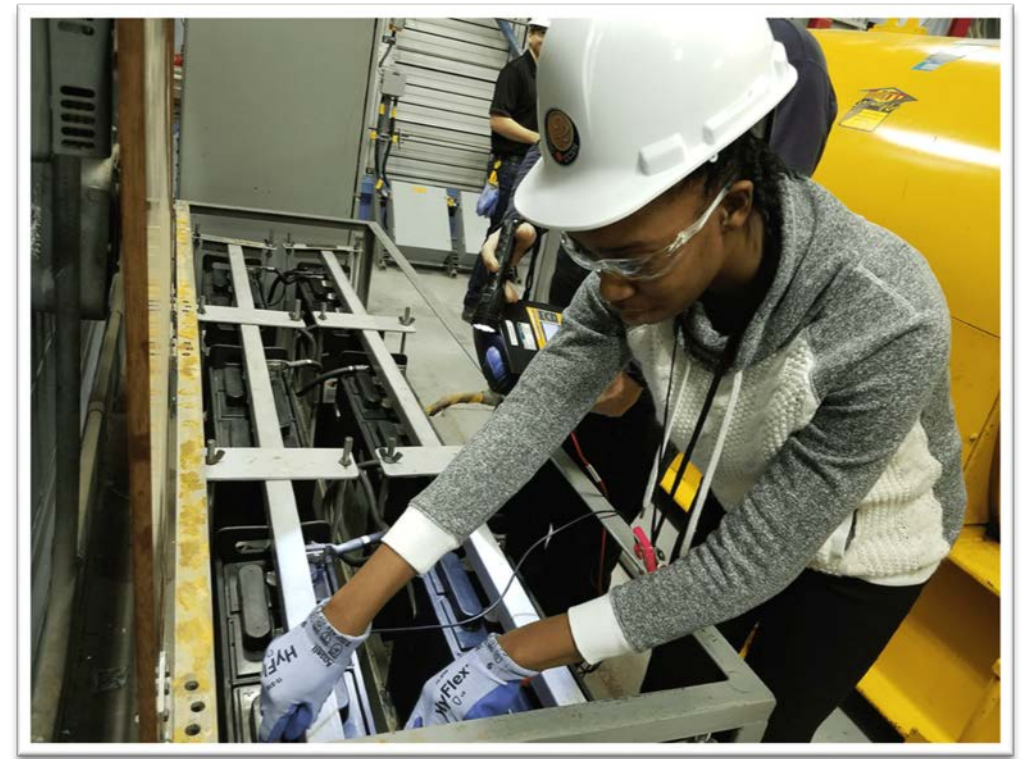
- Continue our efforts to enhance international nuclear safety
- Cooperation and experience – sharing and compliance with international agreements
- IAEA peer review missions in 2019
 - Emergency Preparedness Mission (EPREV)
 - Integrated Regulatory Review Service (IRRS) Mission



CNSC PRIORITIES

4. IMPROVE MANAGEMENT EFFECTIVENESS

- Ensure our organization is agile, highly skilled and representative of Canada's diverse population
- Be supported by modern management practices and tools
- Be able to respond to an evolving workforce and industry



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



KEY FILES AT THE CNSC

REFURBISHMENTS

BRUCE NUCLEAR GENERATING STATIONS A & B (ONTARIO)

- 8 operating reactors
- Refurbishment plan: 2 completed, 6 to be carried out by 2033, \$13B projected cost

DARLINGTON NUCLEAR GENERATING STATION (ONTARIO)

- 3 operating reactors + 1 refurbishment
- Refurbishment project began in October 2016 and is scheduled for completion by 2026, \$12.8B projected cost



KEY FILES AT CNSC

BILL C-69 – proposed impact assessment legislation

- A shift from environmental assessments to impact assessments with a broader scope to include:
 - economic factors
 - health impacts
 - social impacts including gender based+ considerations
 - positive and negative aspects of the project
- Impact Assessment Agency of Canada (IAAC)
- Bill C-69 is being studied by the Standing Senate Committee on Energy, the Environment and Natural Resources
- Appeared before the Committee on February 7

KEY FILES AT CNSC

SMALL MODULAR REACTORS (SMRs)



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

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

CURRENT OPERATOR INTEREST

- Canadian Nuclear Laboratories (CNL) has invited two vendors to advance to the due diligence stage for an SMR demonstration project
- New Brunswick government investing in nuclear research cluster; NB Power has identified two potential SMR vendors
- The CNSC received the first application for a licence to prepare a site for an SMR on March 20, 2019

KEY FILES AT CNSC

THREE ENVIRONMENTAL ASSESSMENTS UNDER WAY FOR DECOMMISSIONING PURPOSES

- Near Surface Disposal Facility (NSDF) Project (Chalk River, Ontario)
- Nuclear Power Demonstration (NPD) Closure Project (Rolphton, Ontario)
- Decommissioning of the Whiteshell Reactor #1 (Pinawa, Manitoba)



Proposed Near Surface Disposal Facility, Chalk River Laboratories

FUTURE OF MEDICAL ISOTOPE PRODUCTION

- Canada is a leader in medical isotopes production
- New trends, including theranostics
- The CNSC will ensure that facilities for new applications of isotopes are built and operated safely



TRIUMF REPORT CARD

Safety and control area	2016	2017
Management system	SA	SA
Human performance management	SA	SA
Operating performance	SA	SA
Safety analysis	SA	SA
Physical design	SA	SA
Fitness for service	SA	SA
Radiation protection	SA	SA
Conventional health and safety	SA	SA
Environmental protection	SA	SA
Emergency management and fire protection	SA	SA
Waste management	BE	SA
Security	SA	SA
Safeguards and non-proliferation	FS	FS
Packaging and transport	SA	SA

SCA RATINGS 2016–17

- Rating for waste management have improved since 2016 after corrective actions were implemented
- In 2017, overall performance was “satisfactory” or better

INSPECTIONS AND IEMP

- Two to three inspections per year
- Independent Environmental Monitoring Program (IEMP) sampling in 2016 – results within acceptable limits
- Second IEMP sampling is scheduled for September 2019

TRIUMF'S COMMITMENT TO SAFETY

CNSC SAFETY CULTURE WORKSHOP

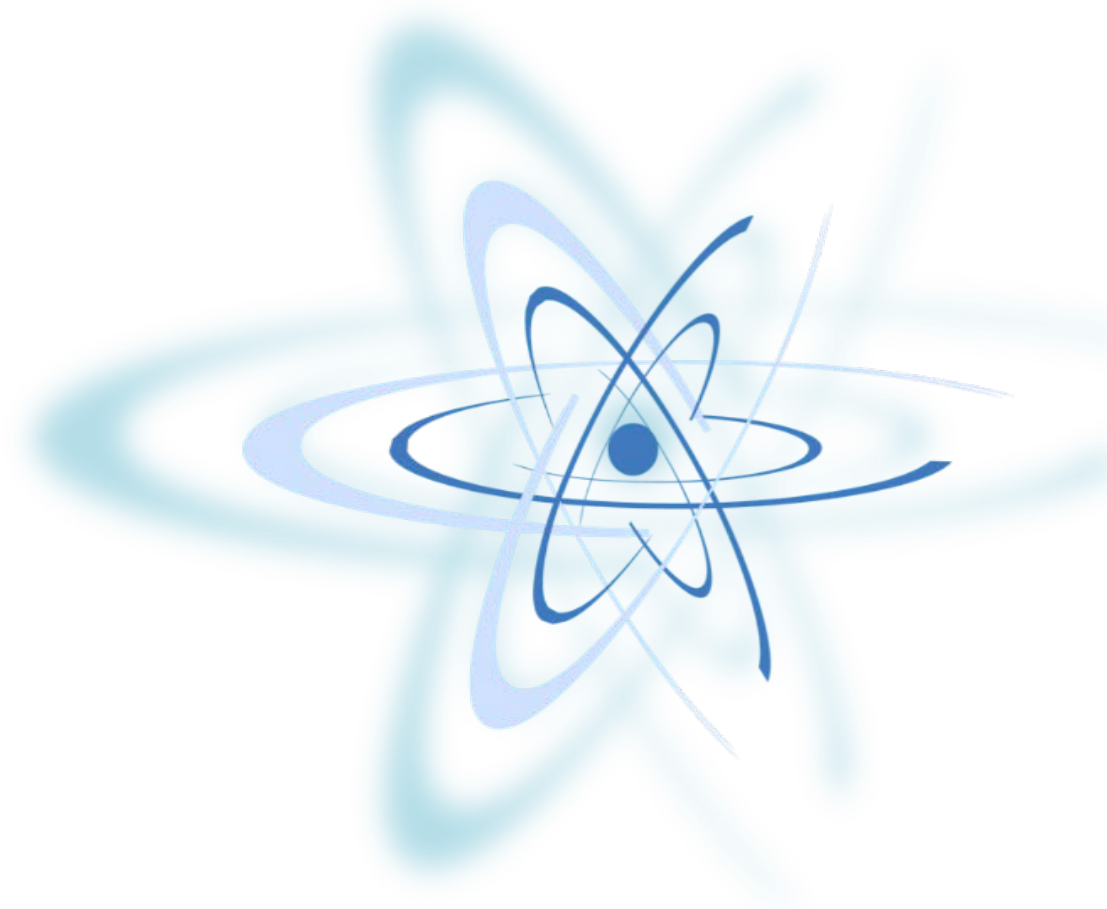
- Positive feedback for TRIUMF
- Safety culture assessment 2018

INTERNATIONAL COOPERATION

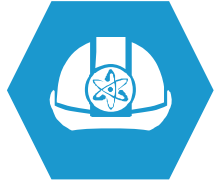
- Hosted the 2017 International Technical Safety Forum

PUBLIC ENGAGEMENT

- Public tours
- Saturday morning lectures



KEY MESSAGES



The CNSC acknowledges TRIUMF's commitment to safety culture



The CSNC recognizes TRIUMF's role as an innovation hub and international leader in the field of medical isotopes



Public trust is essential



Women in STEM



No surprises

A glowing blue DNA double helix structure is shown on the left side of the image. The helix is composed of two intertwined strands connected by horizontal rungs, all emitting a bright blue light. The background is black, making the glowing structure stand out prominently.

“ We will never
compromise safety...

... it's in our DNA ”

Connect With Us

Join the conversation



nuclearsafety.gc.ca



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada