



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada

Meeting with the UN Special Rapporteur

# Nuclear Safety Requirements



June 4, 2019



# Nuclear Safety Requirements

## Canadian Nuclear Safety Commission

- Established in May 2000 under the ***Nuclear Safety and Control Act***
  - regulates the use of nuclear energy and materials
  - implements Canada's international commitments
  - disseminates information to the public
- Reports to Parliament through the Minister of Natural Resources
- Is responsible for environmental assessments of nuclear projects under the *Canadian Environmental Assessment Act, 2012*

***Over 70 years of nuclear safety***



# Nuclear Safety Requirements

## The CNSC's top 4 priorities

1. Have a modern approach to nuclear regulation
2. Be a trusted regulator
3. Maintain our global nuclear influence
4. Improve our management effectiveness

***Preparing for the future***



# Nuclear Safety Requirements



## INDEPENDENT COMMISSION

Quasi-judicial administrative tribunal

Agent of the Crown (duty to consult)

Commission members are independent and part time

Commission hearings are public and webcast

Any member of the public may intervene

Public Participant Funding Program

Decisions are reviewable by the Federal Court

***Public hearings throughout the lifecycle of a facility***

# Nuclear Safety Requirements

The CNSC regulates all nuclear-related facilities and activities throughout their full lifecycle



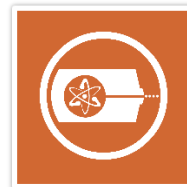
Uranium mines and mills



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

# Nuclear Safety Requirements

## CNSC regulatory framework and philosophy

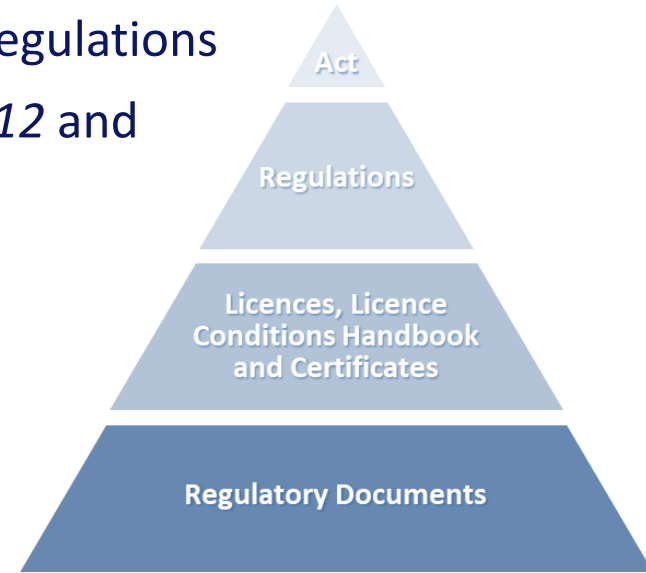
- The *Nuclear Safety and Control Act* is the enabling legislation
- The Commission makes regulations through a transparent process
- Regulatory requirements are continuously updated based on a systematic and transparent process
  - Adoption of national and international standards in regulatory framework
  - Alignment with IAEA safety standards
  - Regular hosting of IAEA peer review missions
- Extensive consultation is held with all stakeholders and Indigenous groups
- Regulatory philosophy is risk informed



# Nuclear Safety Requirements

## Regulatory oversight and compliance

- *Nuclear Safety and Control Act (NSCA)* and Regulations
- *Canadian Environmental Assessment Act, 2012* and other environmental legislation
- Commission licensing requirements
  - licence conditions
  - regulatory documents (REGDOCs) and standards
- CNSC staff compliance activities
  - verification, assessments, inspections and enforcement



***Clear and robust regulatory framework***



# Nuclear Safety Requirements

## Waste-related regulatory documents

- Recently published
  - REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada* (published December 2018)
  - REGDOC-2.11.1, *Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Tailings* (published November 2018)
- Under development
  - guidance on deep geological repository site characterization
  - REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*
  - REGDOC-2.11.1, *Waste Management, Volume III: Safety Case for Long-Term Radioactive Waste Management, Version 2*
  - decommissioning planning (revision)





# Nuclear Safety Requirements

## Nuclear waste-related CSA standards

- The Canadian Standards Association (CSA Group) is a not-for-profit organization composed of representatives from government, industry and consumer groups
- Recent radioactive waste-related CSA standards published
  - CSA N292.0-14 - General principles for the management of radioactive waste and irradiated fuel
  - CSA N292.1-16 - Wet storage of irradiated fuel and other radioactive materials
  - CSA N292.2-13 - Interim dry storage of irradiated fuel
  - CSA N292.3-14 - Management of low- and intermediate-level radioactive waste
  - CSA N292.5-11 - Guideline for Exemption from Regulatory Control of Materials that Contain Nuclear Substances
  - CSA N294-09 - Decommissioning of facilities containing nuclear substances
  - CSA N292.6-18 - Long-term management of radioactive waste and irradiated fuel
- Under development
  - CSA N292.7 - Disposal of radioactive waste and irradiated Fuel (proposed title)



# Nuclear Safety Requirements

## Outcomes from the 6th Review Meeting – good practices

- Canada was credited with a good practice identified at the Review Meeting
- No more than six good practices were recognized among all Contracting Parties
- Canada's good practice was its openness and transparency, more specifically, its public involvement in the CNSC regulatory oversight process through annual reporting, independent of any licensing process

*\* Sixth Review Meeting of the Joint Convention of the Contracting Parties on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*



# Nuclear Safety Requirements

## The 6th Review Meeting also identified the following areas of good performance for Canada

- Openness and transparency through public Commission hearings; the CNSC's Participant Funding Program; regular opportunities for public participation throughout the licensing period; and the CNSC's regulatory requirement for licensees to establish and implement public information programs and proactive public disclosure
- The CNSC's Independent Environmental Monitoring Program (IEMP)
  - independently verifies that the environment surrounding its regulated nuclear facilities is safe
  - integrates Indigenous input into the sampling plan and establishes or updates baseline results of environmental data; the reports and interactive map of results are available on the CNSC's public website
- Integration of Indigenous knowledge and science in site selection process for deep geological repository for spent fuel
  - commitment of the Nuclear Waste Management Organization (NWMO) in its Indigenous Knowledge Policy whereby Indigenous knowledge will inform all of the NWMO's work activities
  - recognition of the importance of ceremony and its incorporation into the planning and conduct of field investigations, with special emphasis on the involvement of local Indigenous guides and knowledge holders
  - strong Indigenous representation within the NWMO and regular cultural awareness training for the NWMO, staff, contractors and siting community members



# Nuclear Safety Requirements

## Open and transparent regulator

- Holds community outreach activities
- Responsible for fulfilling the **Crown's duty to consult** with Indigenous peoples and upholding the honour of the Crown
- Committed to building long-term, positive relationships with Indigenous communities
- Public and Indigenous groups invited to participate in Commission proceedings, environmental assessments and licensing reviews (many hearings are held in the local communities when possible)
- Regulatory, environmental and nuclear safety information is published on the website and shared on social media
- Licensees are required to maintain a public communication program

***The CNSC is committed to building trust***



# Nuclear Safety Requirements

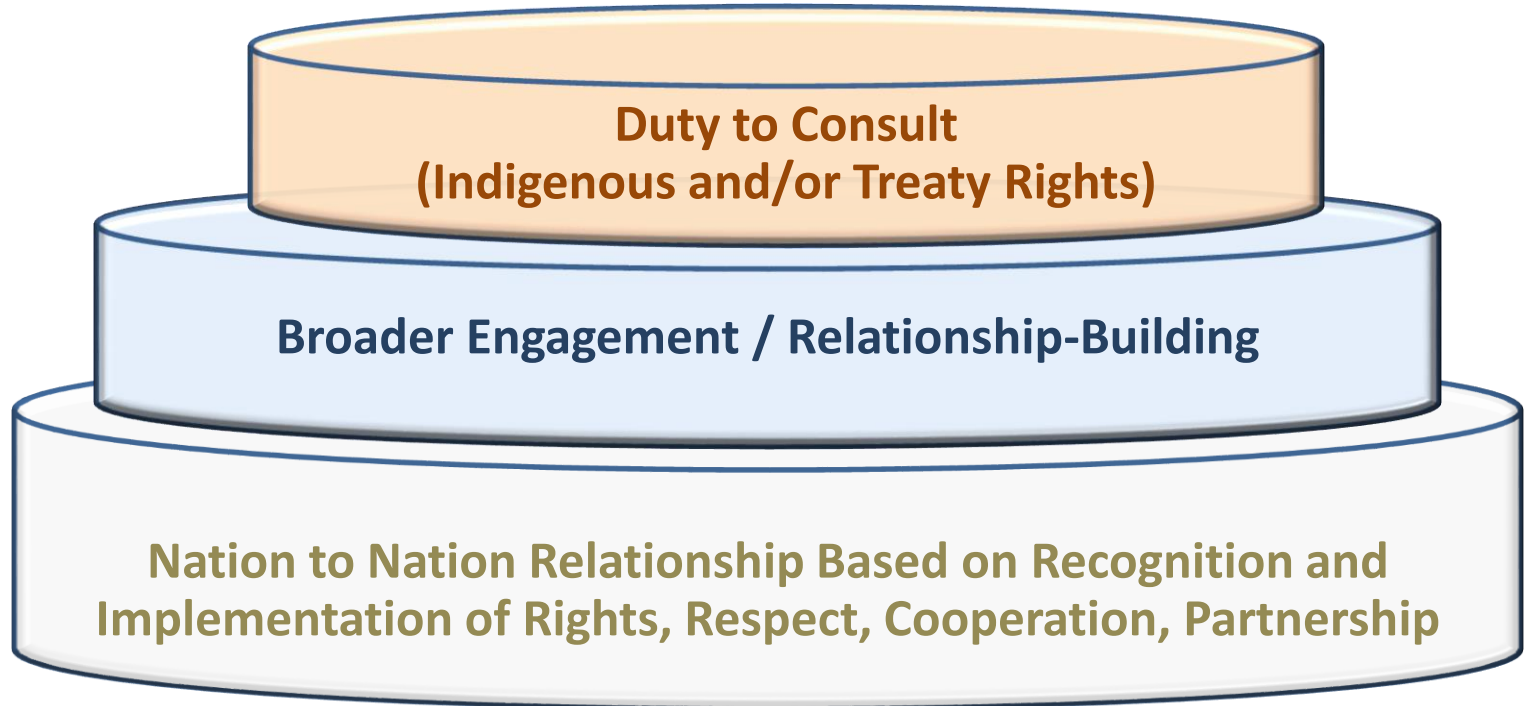
## Environmental process

- Under the CEAA 2012, the CNSC is the responsible authority for environmental assessments (EAs) of nuclear projects
- Under the NSCA, the CNSC is required to assess the environmental impact of a project in every licensing decision
- If the proposed project is of sufficient scope to warrant an EA, a thorough process is conducted and includes
  - a public review and comments or questions about the proponent's draft environmental impact statement (EIS)
  - a full public hearing is held if the final EIS answers the questions raised during the public review
  - the Commission renders its decision after the hearing is completed; if the project is allowed to proceed, it issues a set of licence conditions that must be fulfilled during the life of the project in order to protect the environment



# Nuclear Safety Requirements

## Indigenous Engagement and Consultation



# Nuclear Safety Requirements

## The CNSC's Indigenous consultation and engagement best practices



# Nuclear Safety Requirements

## Indigenous engagement initiatives

- CNSC staff travel to communities to work through regulatory issues before hearings and to support relationship building
- The CNSC is developing terms of reference for ongoing engagement with many Indigenous groups and has signed with two groups near the Bruce Nuclear site
- The Independent Environmental Monitoring Program (IEMP) involves taking and analyzing samples from public areas around the facilities, and measuring the amount of radiological and hazardous substances they contain. Local Indigenous groups are encouraged to participate, observe and ask questions first hand
- The CNSC is working to understand traditional Indigenous knowledge and to incorporate it into its evidence base





# Nuclear Safety Requirements

## Participant Funding Program

- Established in 2011 to enhance the participation of the public, Indigenous groups and not-for-profit organizations in CNSC regulatory processes in order to bring valuable information to the Commission through informed and topic-specific interventions
- Helps support the CNSC's mission to be a trusted, independent, open and transparent regulator



# Nuclear Safety Requirements

## PFP facts at a glance

- Required under NSCA and CEAA 2012
- PFP program budget is **\$925,000/year** and is a **cost-recovered program**
- **Independent Funding Review Committee** makes funding recommendations to the CNSC
- Funding opportunities are **advertised widely** and translated into local Indigenous languages where appropriate (e.g., Cree and Dene radio ads in northern Saskatchewan)
- Program has been expanded to help provide funding support for meetings and workshops with Indigenous groups, participation in the CNSC's IEMP, Indigenous knowledge studies, regulatory oversight reports (annual)
- The PFP is an international best practice (unique among nuclear regulators internationally)



# Nuclear Safety Requirements

## PFP funding amounts by recipient category, from 2015 to present



Recipient category	Amount awarded from 2015 to present	Examples of funding recipients
<b>Indigenous groups</b>	\$2,162,028 (75%)	<ul style="list-style-type: none"><li>• Algonquins of Ontario</li><li>• Métis Nation of Ontario</li><li>• Sagkeeng First Nation</li><li>• Manitoba Métis Federation</li><li>• Ya'thi Néné Land and Resource Office (Athabasca Déné First Nations)</li></ul>
<b>Civil society orgs</b>	\$591,688 (21%)	<ul style="list-style-type: none"><li>• Northwatch</li><li>• Lake Ontario Waterkeeper</li><li>• Canadian Environmental Law Association</li></ul>
<b>Academic</b>	\$37,359 (1%)	
<b>Individual</b>	\$89,720 (3%)	
<b>Total</b>	<b>\$2,880,795</b>	

# Nuclear Safety Requirements

## Nuclear sector impact on clean air

Vanessa Foran, President of Asthma Canada, presented to the Commission on May 30, 2018 during Bruce Power relicensing hearings

- 3.8 million Canadians live with asthma, including 600,000 children
- A 2005 study by the Ontario Ministry of Energy estimated that air pollution from Ontario's coal plants was responsible for over 600 premature deaths, 900 hospital admissions and 1,000 emergency room visits each year, with a financial impact of \$3 billion per year
- Closing Ontario's coal-fired power plants represents one of the largest GHG reduction initiatives in North America
- A 2013 study by the Ontario Ministry of the Environment found that annual levels of particulates in the air declined by about 25%, and GHG emissions from the electricity sector dropped by 87% from 2005 to 2012
- In 2005, Toronto experienced 53 smog days – in 2017 it had zero
- Ontario's air quality improvements would not have been possible without Ontario's nuclear facilities



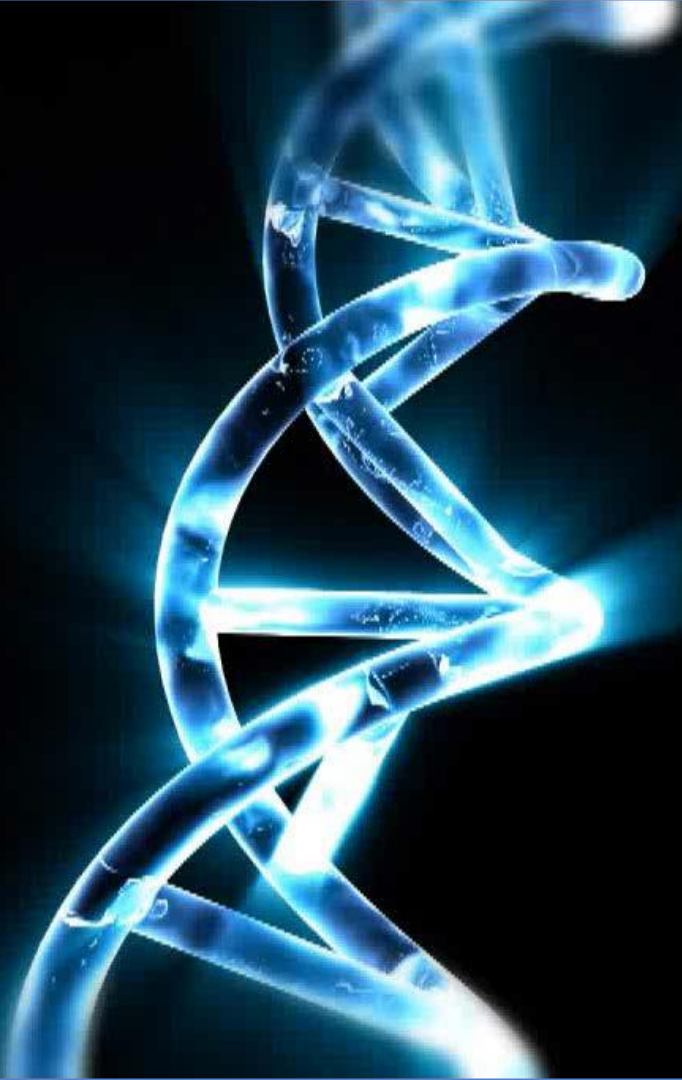
# Nuclear Safety Requirements

## References

- Canada's presentation to the 6th Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management:  
<http://www.nuclearsafety.gc.ca/eng/pdfs/Presentations/VP/2018/20180522-Ramzi-Jammal-Sixth-Review-Meeting-Joint-Convention-eng.pdf>
- Compendium of Indigenous Consultation and Engagement Best Practices:  
<http://www.nuclearsafety.gc.ca/eng/pdfs/reports/compendium-of-indigenous-consultation-and-engagement-eng.pdf>
- REGDOC-3.2.2, *Aboriginal Engagement*: <http://www.nuclearsafety.gc.ca/eng/acts-and-regulations/regulatory-documents/published/html/regdoc3-2-2/index.cfm>
- Participant Funding Program webpage: <https://www.cnsccsn.gc.ca/eng/the-commission/participant-funding-program/index.cfm>
- Regulatory framework: <http://www.nuclearsafety.gc.ca/eng/acts-and-regulations/regulatory-framework/index.cfm>
- Waste management framework: <http://www.nuclearsafety.gc.ca/eng/waste/index.cfm#Oversight>
- Health studies: <http://www.nuclearsafety.gc.ca/eng/resources/health/index.cfm>



Safety:  
It's in  
our  
DNA





Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada

# Connect With Us

Join the conversation



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

