



Regulatory Activities

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The Canadian Nuclear Safety Commission



- Regulates the use of nuclear energy and materials to protect health, safety, security and the environment
- Implements Canada's international commitments on the peaceful use of nuclear energy
- Disseminates objective scientific, technical and regulatory information to the public



We will never compromise safety

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
- Import and export controls
- Waste management facilities



Over the entire lifecycle



Independent Commission



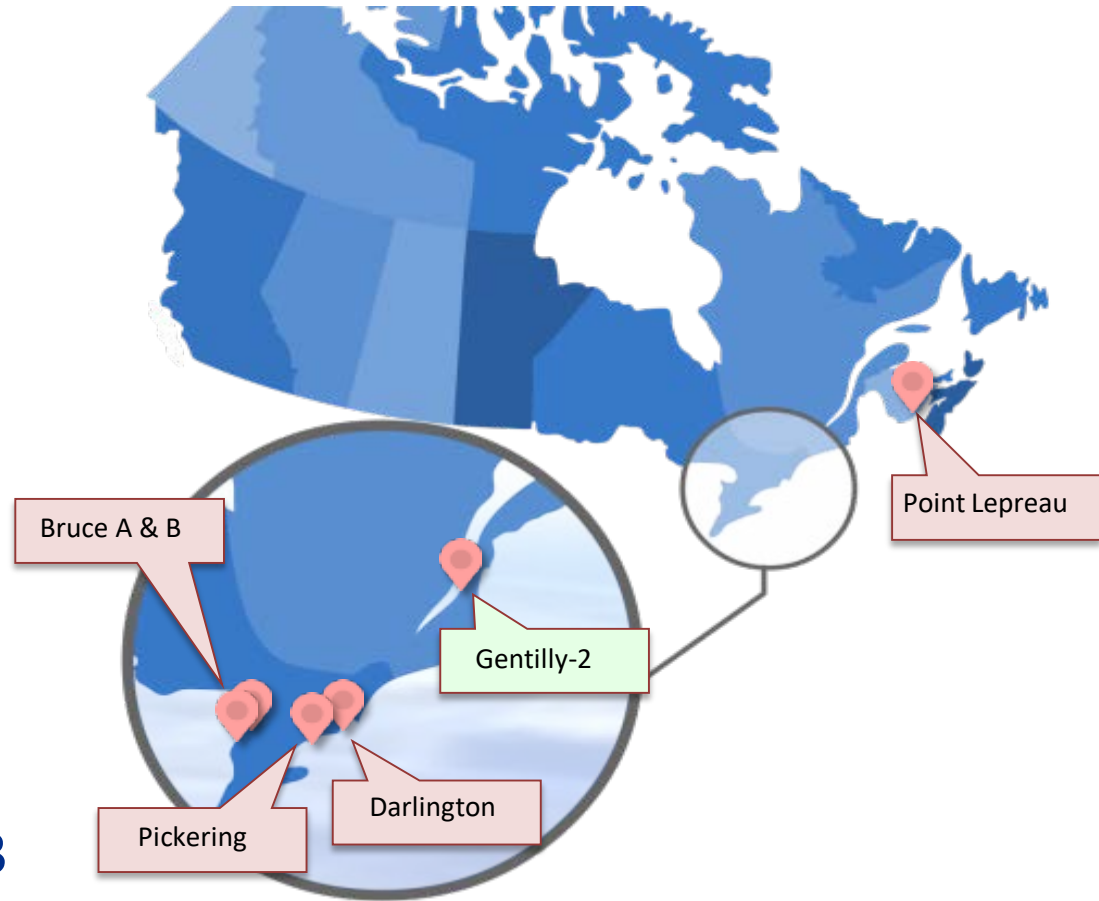
- Quasi-judicial administrative tribunal
- Agent of the Government of Canada (duty to consult)
- Reports to Parliament through the Minister of Natural Resources
- Commission members are independent and part time
- Commission hearings are public and webcast
- Staff presentations
- Decisions are reviewable by the Federal Court

Transparent, science-based decision making



Canada's Nuclear Power Plants

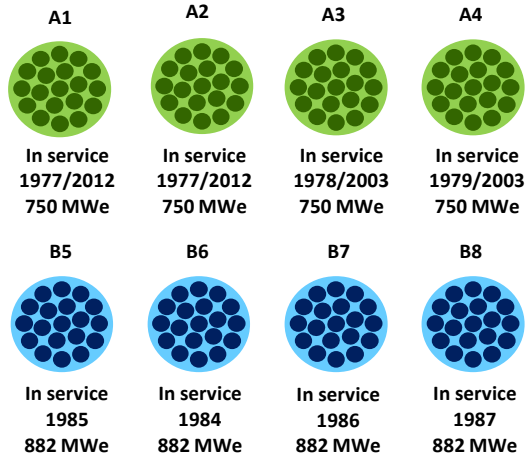
- Four nuclear power plants (NPPs) with operating licences
 - 18 reactor units were operational in 2017
 - Darlington Unit 2 started refurbishment in October 2016
- Three reactor units in safe storage
 - Gentilly-2
 - Pickering units 2 and 3



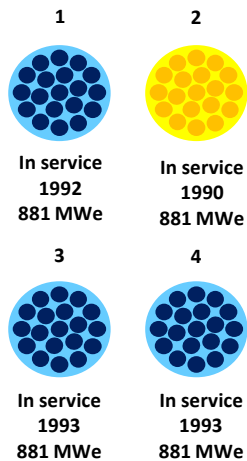
Status of Canadian NPPs



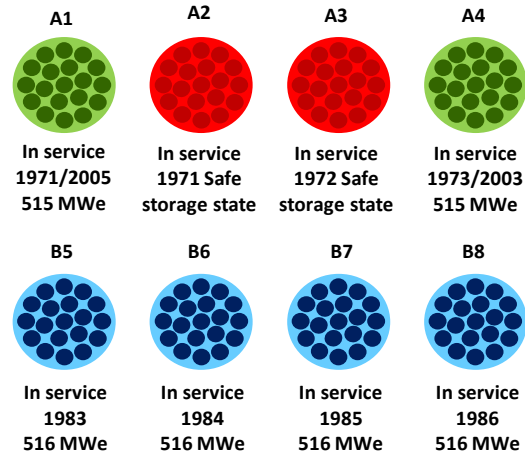
Bruce



Darlington



Pickering



Gentilly-2



Point Lepreau

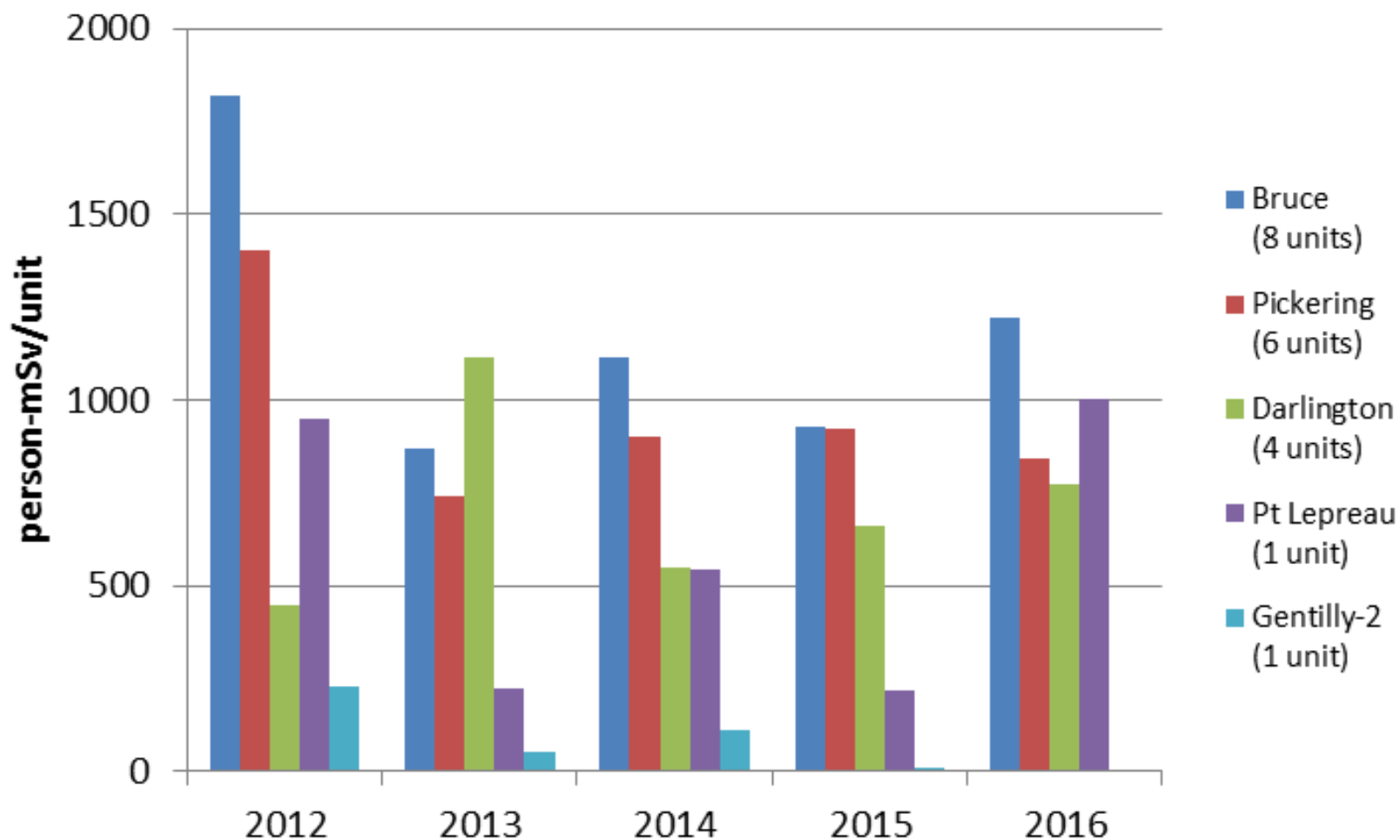


Operational status (average age – 25 years)

- In service within design life
- In service / Returned to service
- Safe storage state
- In refurbishment

Canadian NPPs

Collective Radiation Exposure



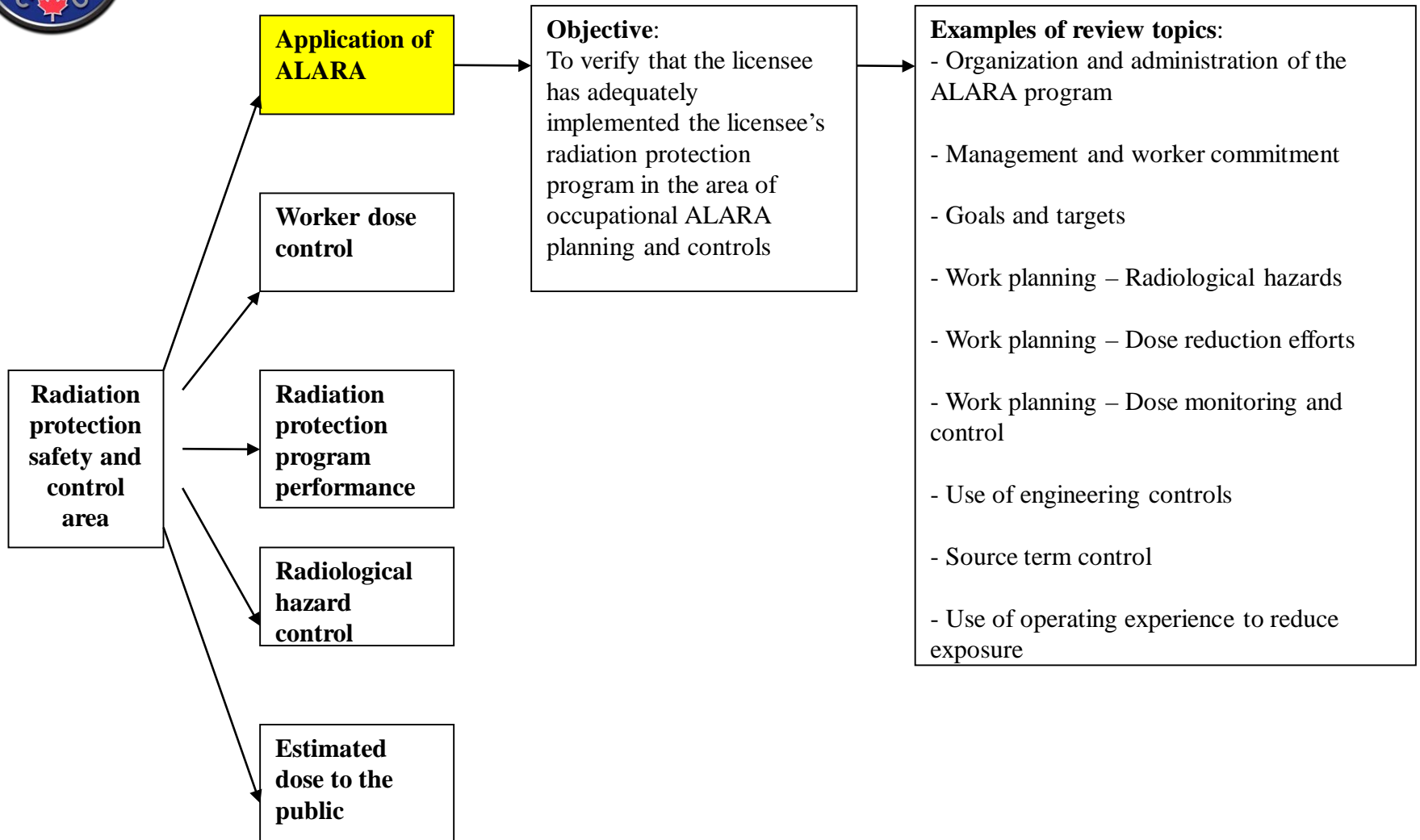
Regulatory Framework



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



Regulatory Compliance 2017



Industry Status 2017:



Application of ALARA (1)

- Implementation of new technologies to reduce dose
 - heat transport system dose-reducing resin (trial prior to outage)
 - use of real-time dose data
- Mock-up training for high-dose activities
 - first of a kind and first in a while
- Individual and work activity, dose monitoring
 - dose is tracked at the work activity level
 - dose is tracked at the personnel level

Industry Status 2017:



Application of ALARA (2)

- Timeliness of implementation
 - engineering change control process
- Conduct of self-assessments on all aspects of ALARA
- Improved documentation and review for post-work activities
 - use of operating experience (OPEX)
 - radiological history for specific activities



Regulatory Compliance – Future

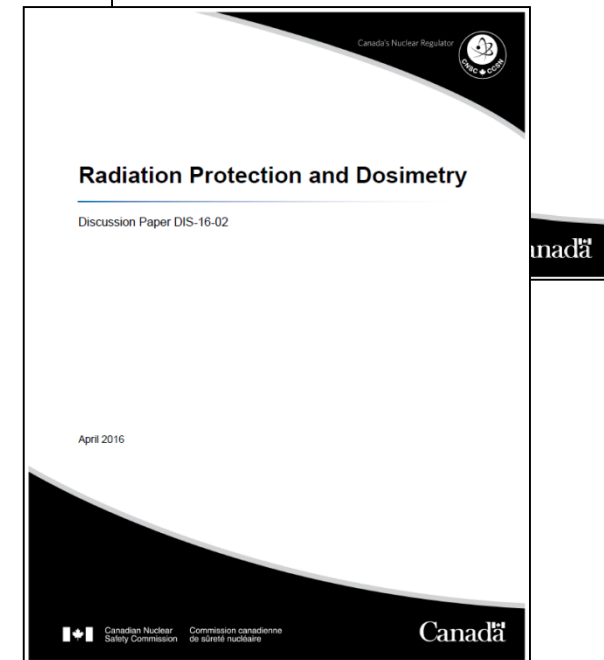
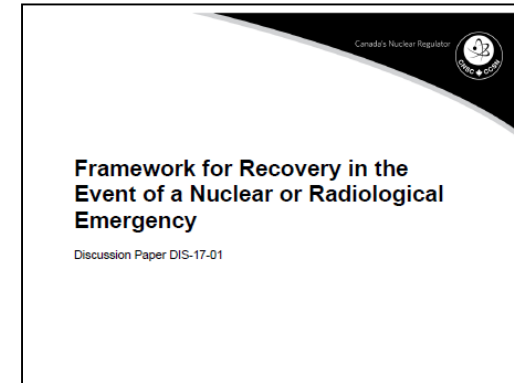
- Licensees have mature programs in place that follow CSA N286-12 – Management system requirements for nuclear facilities
- Inspections focus on the outputs of licensee's programs
- Focused field inspections
 - follow an approved guide
 - a reactive and flexible method for site inspectors to collect data points to gauge compliance

Regulatory Framework –

Discussion Papers



- DIS-17-01, *Framework for Recovery in the Event of a Nuclear or Radiological Emergency*
- DIS-16-02, *Radiation Protection and Dosimetry*
 - REGDOC-2.7.1
 - REGDOC-2.7.2, Volume I
 - REGDOC-2.7.2, Volume II



Regulatory Framework –



Radiation Protection Regulations, section 15

- Lower the effective dose limit to 50 mSv and the equivalent dose limit to the skin to 500 mSv
- Specify dose limits for persons taking specific emergency actions
- Specify dose limits for persons taking more than one of the emergency actions
- Require that the principle of keeping doses as low as reasonably achievable is followed
- Stipulate that pregnant women, including non-nuclear energy workers and offsite emergency personnel, are not to participate in the control of an emergency
- Specify reporting requirements for when emergency dose limits are exceeded

Canada Gazette, Part II, October 4, 2017

Regulatory Framework – *Radiation Protection Regulations*



➤ DIS-13-01

– consultation

- August 9 – December 9, 2013

– invitation for feedback

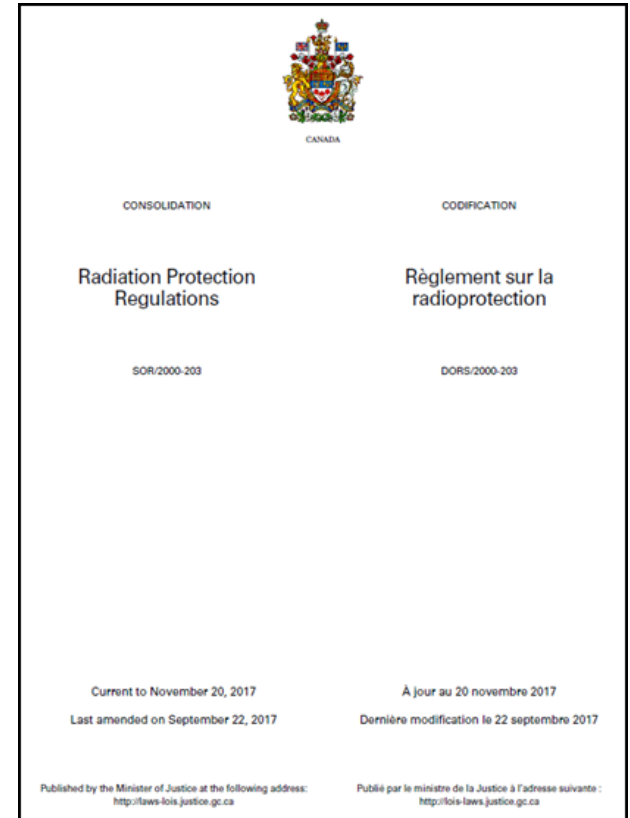
- January 27 – February 28, 2014

– What We Heard Report

- October 6, 2015

– *Canada Gazette, Part I*

- fall 2018





Canadian Nuclear
Safety Commission

Commission canadienne
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Questions?

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