The TSB Role: An Integrated and Vital Function

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nuclearsafety.gc.ca

Canada

Canadian Nuclear Safety Commission (CNSC)

- Established in May 2000 under the *Nuclear Safety and Control Act* (NSCA)
- Reports to Parliament through the Minister of Natural Resources
- Exclusive jurisdiction over all nuclear-related matters in Canada

Canada's Nuclear Watchdog

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

Over 70 years of nuclear safety!

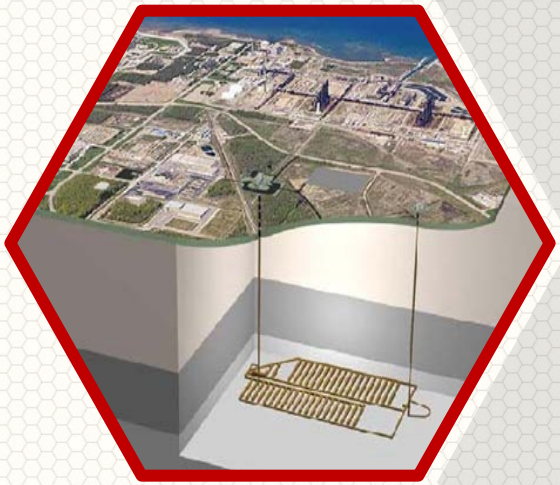
Legislation

- *Nuclear Safety and Control Act*
  - amended in 2012 to add administrative monetary penalties
- Sole authority for environmental assessments on nuclear projects under the *Canadian Environmental Assessment Act, 2012*
- Implements Canada's bilateral agreement with the International Atomic Energy Agency (IAEA) on nuclear safeguards verification

Modern framework in place

The CNSC Regulates All Nuclear-Related 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



…From cradle to grave

Policy vs. Regulation

- The CNSC is a regulatory body
- Safety is our mandate
- Little to no nuclear policy authority
- Other jurisdictions play an important role
- Federal nuclear policy – domain of Natural Resources Canada
- Provinces make decision on energy choice

CNSC public hearings – a platform for public policy dissent

The Commission

Science-based decision making

- Quasi-judicial administrative tribunal
- Commission members are independent and part-time
- Decisions can only be challenged through judicial review in Federal Court
- CNSC staff provide expertise and advice to Commission

Open and Transparent

- Commission proceedings are public and webcast
- Decisions, minutes and enforcement actions posted on CNSC website
- Public involvement encouraged / participant funding program
- Challenge everything – internally, domestically, internationally

Technical Support Branch (TSB)

The CNSC's Technical and Scientific Support Organization (TSO)

The CNSC's Technical Support Branch

- Headed by a vice-president and chief science officer who reports directly to the CNSC president
- Responsible for technical advice and recommendations, including contributions to international initiatives and regulatory framework
- Provides a challenge function to safety cases, given that licensees have the primary responsibility for safety
- Functions as a partner with the Regulatory Operations Branch, providing documented technical recommendations
- 280 staff in 17 specialized divisions carry out TSB's mandate

TSB Structure

VP and chief science officer

Provides direction, decision making and arbitration of technical issues at the highest level

DSS

Security, safeguards, nuclear non-proliferation (including import and export controls) and nuclear emergency management

DAA

Chemistry, fuel, physics and electrical, materials, mechanical, metallurgical, nuclear, civil/structural and systems engineering as well as robustness, vulnerability design and systems reliability engineering, to include deterministic safety analysis and probabilistic safety assessment

DSM

Human and organizational performance, management systems, training program evaluation, and personnel certification and examination

DERPA

Environmental assessment, geosciences, radiation protection, environmental protection and laboratory services

Oversight of dosimetry services

TSB Competence

- **TSB staff are flexible and highly skilled**
  - have multi-disciplinary expertise
  - able to respond to industry and technology changes
  - mobility between operations and technical positions
- **Focuses on continuous development and strategy for the long term**
  - supports staff self-improvement and learning opportunities, including post-graduate studies
  - management works with staff to anticipate and prepare for future regulatory challenges and needs

TSB Integrity

- **TSB supports CNSC policies**
  - Policy on Science in a Regulatory Environment
  - Scientific Integrity Working Group
  - Non-Concurrence Process and Open Door Policy

TSB Safety Leadership

- Strategic focus integrated with CNSC priorities
- Healthy internal safety culture
- Flexible organization that is able to respond to industry changes
- Management system to document all processes and procedures
- Departmental audit and evaluation

Supporting Research and a Modern Regulatory Framework

- **TSB staff engage extensively in regulatory framework activities**
  - propose new initiatives in documents and research
  - contribute to the internal and external drafting of documents
  - manage research initiatives
  - participate in national and international standards and guides
- **Adaptable to an evolving industry and changing regulatory expectations and conditions**
  - input sought from all stakeholders
  - expert panels engaged when necessary
- **Integrate IAEA, NEA and CSA guidance and requirements**
  - actively take part in national and international committees
- **Participate in original and collaborative research**
  - in all cases, there is independent analysis of results
  - data is available to all as part of the Open Government Initiative

Dissemination of Information

- **The CNSC is a source of credible information**
  - scientific, technical and regulatory
  - annual regulatory oversight reports
- **TSB experts**
  - are encouraged to publish in peer-reviewed journals
  - participate in public information sessions (e.g., radiation, biology)
  - contribute to public summaries of regulatory science on the CNSC's website

Part of our mandate

Continuous Improvement

- **Peer reviews**
  - Convention on Nuclear Safety (CNS), International Regulatory Review Service (IRRS), International Physical Protection Advisory Service (IPPAS), Joint Convention
- **Readiness for new technologies**
  - training on small modular reactor (SMR) technology
  - international cooperation (IAEA SMR Forum, NEA Multinational Design Evaluation Programme)
- **Prepared for future challenges**
  - networking and benchmarking within and outside nuclear and regulatory environments

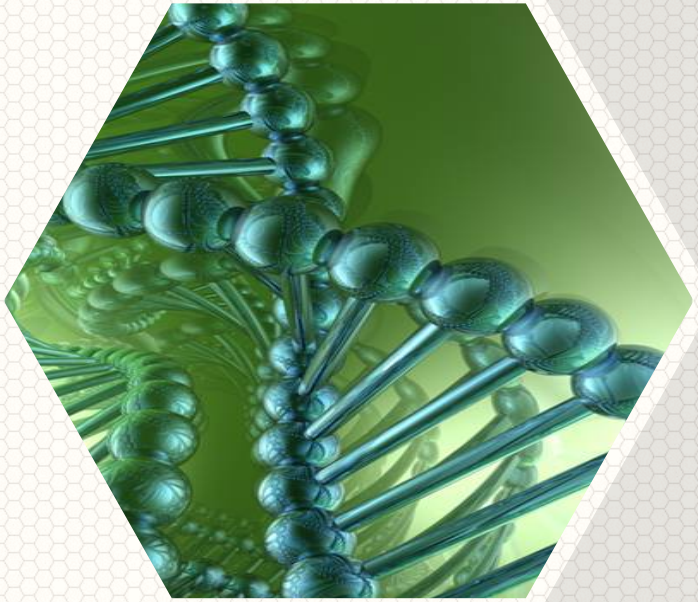
Always looking for opportunities to continuously improve safety, knowledge and technology

Conclusion

- Effective technical support organizations (TSOs) are competent, capable and unbiased
- They strive towards continuous improvement and have leadership that is focused on ensuring the regulator is achieving its fundamental purpose of ensuring public and environmental safety and stakeholder trust
- Effective TSOs have healthy safety cultures and recognize the importance of utilizing proportional approaches based on risk, while compromising neither safety nor the ability of licensees to safely operate their nuclear power plants
- The CNSC's Technical Support Branch provides an excellent example of an effective internal TSO

WE WILL NEVER COMPROMISE SAFETY

IT ’S IN OUR DNA!



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