



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

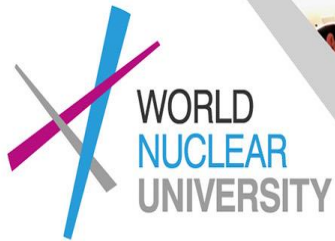


Introduction to Nuclear Law

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What We Will Cover



- What is nuclear law and why do we need it?
- Essential components and principles
- International nuclear law – overview
- National nuclear law – basic elements
- Role of regulatory body – the Canadian example
- Some concluding thoughts and references

What Is Nuclear Law?



... the set of **special legal rules** created to **regulate** the conduct of those who engage in activities related to **fissionable materials**, and other activities involving **ionizing radiation**

- public law – law which governs
 - relations between the State and its population in matters of public order
 - relations between States; relations between States and international bodies
- both international and national in its scope
 - reflects the international law instruments to which State has committed
 - reflects the national view on nuclear

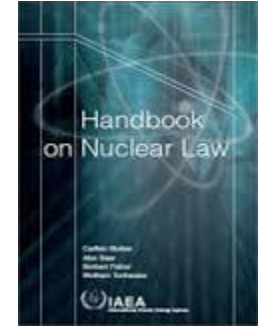
What's So Special About Nuclear?



- Nuclear energy **brings significant benefits** (clean electricity, medical diagnosis and treatment, industrial and agricultural uses) and **poses special risks** (environment, health and safety, proliferation)
 - Nuclear law is regulatory – if risks outweighed benefits, the law would prohibit the activity
 - The focus is on balancing risks and benefits: society is protected, such that benefits are realized
- Example: Canada's ***Nuclear Safety and Control Act*** mandates the CNSC to “regulate to prevent unreasonable risk ...” and to implement Canada's international obligations



Handbook on Nuclear Law - Principles



Safety – the primary requisite for the use of nuclear energy

Security – legal measures to protect against diversion from legitimate uses

Responsibility – the primary responsibility for safety rests with the licensee

Permission – prior authorization required for activities

Continuous control – regulator must always be able to monitor compliance

Compensation – States must adopt measures to compensate for damage in case of accident

Sustainable development – one should not foreclose future options or rely unduly on forecasts

Compliance – States adhering to international laws must reflect this in national nuclear law

Independence – the regulator must be able to exercise independent expert judgment on safety

Transparency – relevant risk/benefit information must be available to stakeholders

International cooperation – national law should allow for cooperation, learning, harmonization

Sources of International Nuclear Law



- Treaties/conventions, bilateral and multilateral agreements
- International custom
- Guidance from international bodies (IAEA, OECD/NEA)

The focus of international nuclear law has evolved over time, and in reaction to events:

- 1950s – focus on development – establishment of international bodies
- 1960s – focus on non-proliferation, safety and liability
- 1970s – focus on trade, physical protection, non-proliferation
- 1980s–90s – post TMI/Chernobyl – focus on safety, emergency response
- 2000s – focus on security, terrorism
- Today – focus on safety, liability

Scope – What Does International Nuclear Law Cover?



- Nuclear safety
 - Radiation protection
 - Emergency preparedness and response
 - Waste management/decommissioning
 - Environmental protection
- Nuclear security – physical protection, terrorism
- Safeguards and non-proliferation
- International trade, nuclear cooperation
- Third-party liability, compensation and insurance



Nuclear Safety



*Protecting people and the environment from the potential for negative effects of ionizing radiation – **hard and soft law***

- International standards – IAEA basic safety standards, codes of conduct
- *Convention on Nuclear Safety (CNS) (1994)*
 - Regulatory framework obligations and safety culture
 - Safety requirements for siting, design, construction and operation of NPPs
 - Peer review – national reports and review meetings
- Radiation protection
 - Implementing ICRP, international standards - ALARA
 - Emergency preparedness – early notification and assistance conventions



Nuclear Safety (cont.)

- *Joint Convention on the Safety of Spent Fuel Management and the Safety of RWM:*
 - “sister” incentive convention to the CNS, for radioactive waste
 - requirements for waste facilities, safe transboundary movement of RW/SF
- *IAEA Regulations for the Safe Transport of Radioactive Material:*
 - Packaging requirements, competent authority controls
 - Incorporated into national law to be binding
- Environmental protection
 - Environmental impact assessment processes
 - *Aarhus Convention* – access to environmental information
 - *Espoo Convention, Kiev Protocol* – cross-border impacts of projects



Nuclear Security

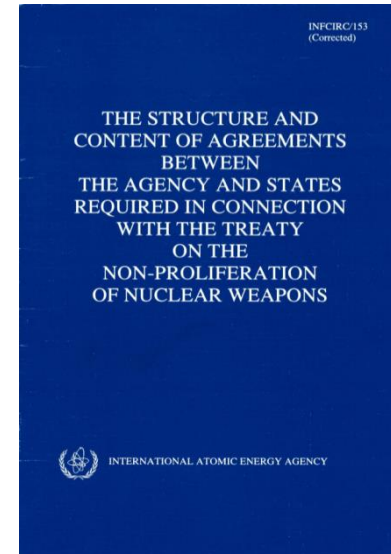
*Protecting nuclear material from bad actors – **hard and soft law***

- Preventing, detecting, responding to acquisition of nuclear material for malevolent use:
 - *1979 Convention on the Physical Protection of Nuclear Material; 2005 Amendment to extend scope to domestic facilities, expand coverage (in force May 2016)*
 - *International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT)*
 - Threat and risk assessments – physical security requirements
 - UN Security Council resolutions
 - *Code of Conduct on the Safety and Security of Radioactive Sources*

Non-Proliferation and Safeguards



- *Treaty on the Non-proliferation of Nuclear Weapons (1970)*
 - Non-proliferation, disarmament, peaceful uses
 - IAEA comprehensive Safeguards Agreements
 - Model Additional Protocol
 - Accountancy, containment, inspections
- *Comprehensive Nuclear Test Ban Treaty*
- *Nuclear Weapon-Free Zone Treaties (e.g. Tlateloco)*



International Trade



- *Generally, trade laws promote wide, barrier-free trade*
- Nuclear is different – trade is exceptional, subject to authorization, sometimes prohibited:
 - NPT and non-proliferation policies
 - Rules for competition among nuclear suppliers
 - Fight against terrorism
- States may have bilateral nuclear cooperation agreements
- Nuclear Suppliers' Group (NSG) Guidelines
- Export controls



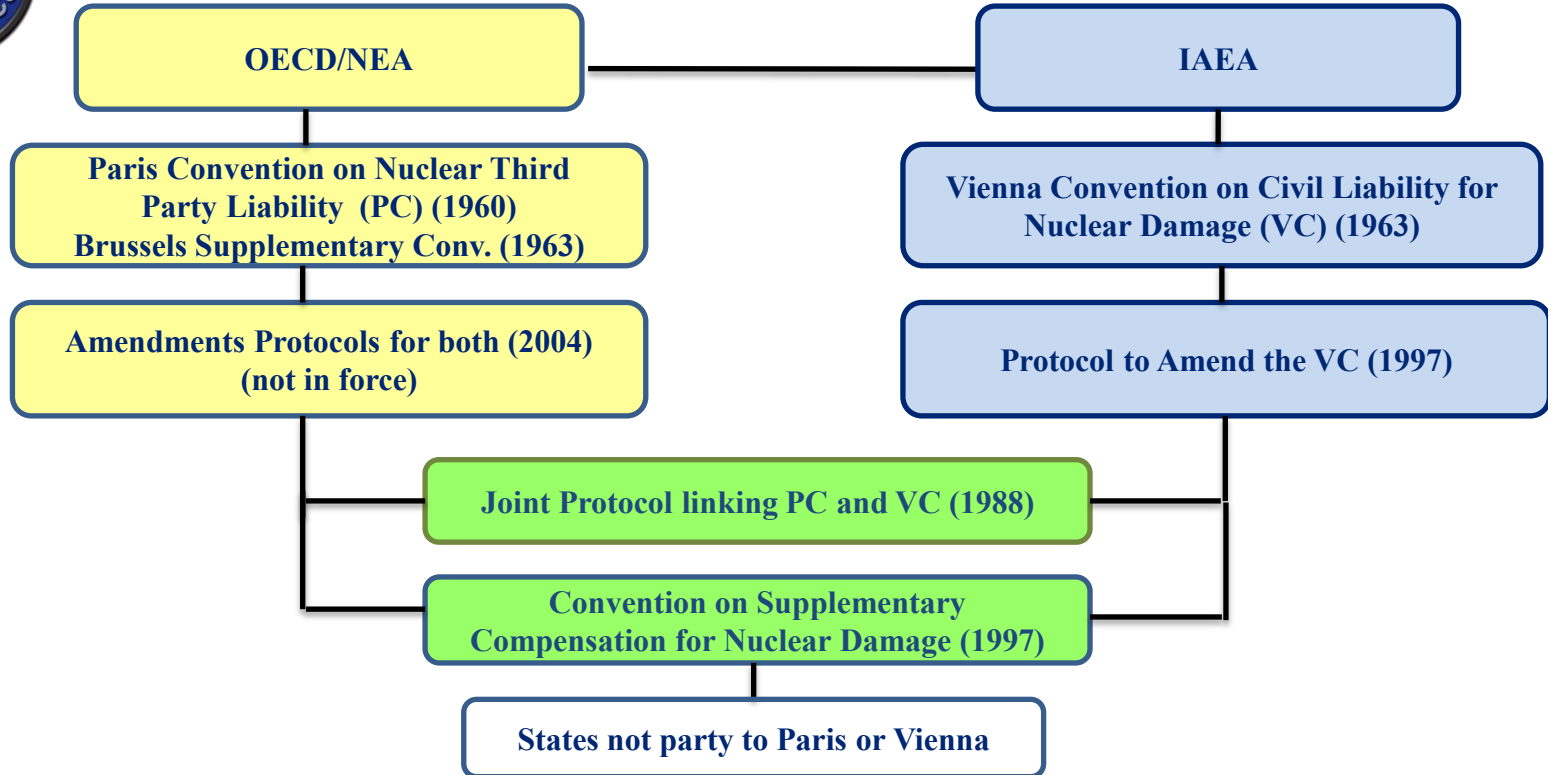


Third-Party Liability – The Principles

- Exclusive liability of nuclear operator
- Liability without fault (strict liability)
- Minimum/maximum amount of liability
- Mandatory financial coverage (insurance)
- Operator's liability is limited in amount and time
- Non-discrimination
- Exclusive jurisdictional competence

Example: Canada's ***Nuclear Liability and Compensation Act***

Nuclear Liability – International Instruments





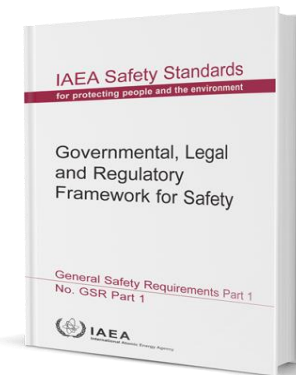
International Framework for National Regulator

➤ **Convention on Nuclear Safety**, article 8:

Each Contracting Party shall establish or designate a regulatory body ... provided with adequate authority, competence and financial and human resources to fulfill its assigned responsibilities.

Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy.

➤ **IAEA's Governmental, Legal and Regulatory Framework for Safety** (GSR Part 1)



National Nuclear Law



- Purpose
 - generally, to provide for the protection of workers and the public, to preserve the environment and maintain security
- Scope – depends on the State’s nuclear activities
- Reflects the 11 principles, as well as:
 - the implementation of the State’s international treaty commitments
 - key international instruments standards
- Responsibility for safety
 - regulatory body sets standards, enforces them
 - operator is primarily responsible for safety

Regulator - Important Characteristics



- Independent of operators, promoters
- Technical competence and statutory authority:
 - licensing, setting standards, inspection, enforcement
- Financial resources to do its job
- Safety decisions are adequately insulated
- Role to coordinate with other bodies
- Role to involve public in decision-making, disseminate public information



Different Regulatory Approaches



- Many different forms/structures for regulatory bodies – commission/board, single administrator, etc.
- Different funding models – government budget or recovery of fees from regulated entities
- Different decision-making structures
- Different licensing – short- or long-term, life-cycle considerations
- Prescriptive or performance-based regulation
- Technical support – either within regulator or separately accessible

Basic Regulatory Functions



- To develop appropriate regulations
- To authorize activities – licensing regime
- To verify compliance with law, regulations, authorization
- To enforce requirements with legal powers
- To act transparently and inclusively – public involvement, dissemination of information

Canadian Nuclear Safety Commission



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



Canada's nuclear regulator

How the CNSC Works



➤ **Commission:**

- up to seven permanent members, appointed for fixed term, removable only for cause
- One permanent member named as President/CEO; members are experts in their fields

➤ **Commission decision making:**

- Regulation-making authority – implementing international and national standards
- licensing of major facilities (NPPs, fuel cycle facilities, mines) – public hearing process
- enforcement – licensing, emergency orders
- review/appeal of licensing matters, compliance/enforcement decisions
- decisions subject to judicial review only by Federal Court



CNSC: Our Organization

The CNSC has a staff organization of over 850 employees:

- HQ in Ottawa, 4 site offices at power reactor sites, 1 site office at Chalk River Laboratories, 4 regional offices
- Roughly 2,500 licences to administer
- Compliance verification, inspection, enforcement activities
- Maintenance of Commission's regulatory framework (11 sets of regulations, regulatory documents, guides, etc.)



The CNSC's Regulatory Philosophy...



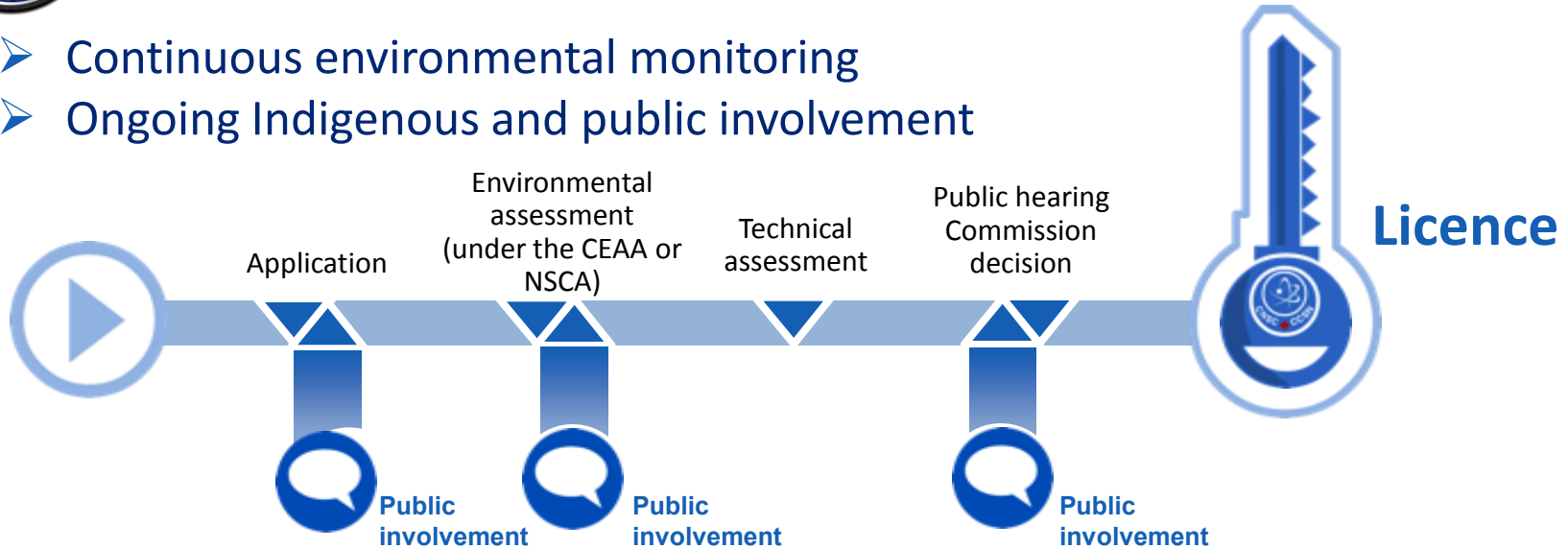
- Some performance-based, some prescriptive regulations
- Post Fukushima, increased emphasis on prevention and mitigation, taking into account defence in depth – knowing what to do in case of accident
- Licensees are responsible for safe operation
- The CNSC and licensees are responsible for regular, clear communications and information to stakeholders and the public

...continuous regulatory oversight to ensure licensees comply with CNSC regulatory requirements

The CNSC's Licensing Process ...



- Continuous environmental monitoring
- Ongoing Indigenous and public involvement



...ensures only qualified applicants are licensed

Safety and Control Areas



- Safety and control areas are the technical topics CNSC staff use across all regulated facilities and activities to assess, evaluate, review, verify and report on regulatory requirements and performance
- This framework is used throughout our core processes

Ensuring safe operation of Canada's nuclear facilities



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



Enforcing Compliance

The CNSC authorities are exercised on a graded approach:

- Recommendation – based on best practices
- Request – regulations require a response
- Order – any measure to serve the purposes of the statute
- Licensing action – amendment, suspension, revocation
- Administrative monetary penalties
- Prosecution for regulatory offence – includes whistleblower protection

Many tools are at the CNSC's disposal

Some Current Topics in Nuclear Law



- Effectiveness of international nuclear law instruments post Fukushima – improving accountability and transparency
- Progress toward a global nuclear liability regime
- The role of social acceptability
- Regulatory bodies and their oversight – peer review, transparency

Some Nuclear Law Resources



- IAEA *Handbook on Nuclear Law*, volumes I and II <http://www-pub.iaea.org/books/IAEABooks/6807/Handbook-on-Nuclear-Law>
- IAEA Safety Standard Series – *Governmental, Legal and Regulatory Framework for Safety*, General Safety Requirements Part 1 (GSR Part 1) <http://www-pub.iaea.org/books/IAEABooks/10883/Governmental-Legal-and-Regulatory-Framework-for-Safety>
- OECD/NEA *Nuclear Law Bulletin* <https://www.oecd-nea.org/law/nlb/>
- OECD/NEA *Nuclear Legislation in OECD & NEA Countries* <https://www.oecd-nea.org/law/legislation/>
- *Summary Report – 7th Review Meeting of the Contracting Parties to the CNS* https://www-ns.iaea.org/downloads/ni/safety_convention/7th-review-meeting/17-08671e_cns7rm2017_08.pdf



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Questions?

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