Session 1A: Where Are We Today?

Modal Structure: Rail, Road, Sea and Air

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Background

• Transport: very complex issue requiring harmonization
  • Problems were increasingly being encountered at seaports, airports and rail yards where dangerous goods were trans-shipped
  • International transport has to deal with at least (if transshipment) 2 regulatory systems (instruments)
  • Several modes of transport (with dedicated regulations)
  • Responsibility is with the consignor (for safety) when it is within the State (each) for security
  • Large array of Stakeholders (customs, regulatory bodies, operators, shippers for all modes, …)
• Transport: very complex issue requiring harmonization
  • Nuclear security of transport of nuclear material to prevent the unauthorized removal of such material and to prevent theft and sabotage leading to potential unacceptable radiological consequences
  • Specific Transport regulations for safety and for security issues, for nuclear and for other radioactive material, for each mode of transport

• How has the international community organized itself to face this complexity and the challenge of harmonization?
General Scheme

Safety issues

Level 1 (Global)
- Radioactive Material Transport Requirements

Level 2 (Global)
- Dangerous Goods Transport Requirements

Level 3 (Global / Regional)
- Modal DG Transport Provisions

Level 4 (National)
- National DG Transport Provisions

Security issues

Nuclear Material Transport Recommendations

Convention
Level 1: Class 7 transport – Safety issues

• Legitimacy of the IAEA
  • IAEA Statute (III.A.6: establish or adopt safety standards)
  • Entrusted by ECOSOC

• TS-R-1 “IAEA Regulations for the Safe Transport of Radioactive Material”
  • Elaborated by IAEA and MSs and approved by BoG
  • Incorporated in UN Model Regulations (completely since 1999)
  • 6 guides (TS-G-1.X) complete TS-R-1 (2005 & 2009 edition)

• Transport principles
  • Prevent accidents to persons or property and damage to the environment
  • Make transport feasible by reducing risks to a minimum
Level 1: Class 7 transport – Security issues

- **Legitimacy and Role of the IAEA**
  - IAEA Statute (Articles II, III.A.6 and XII),
  - BoG and GC resolutions (Nuclear Security Plans),

→ Facilitate adherence to and implementation of the legal framework

- **Transport of Nuclear Material**


  - **Binding instrument** (1987) for international transport
  - Scope: physical protection of NM used for peaceful purposes
  - Considering *Theft* and *Unauthorized Removal* for building IND
  - Deal with criminalization of certain offences and international cooperation
Level 1: Class 7 transport – Security issues (cont’d)

- **Transport of Nuclear Material**
  
  2005 Amendment to CPPNM
  
  - Extension to nuclear facilities and to **domestic transport**
  - Expanded cooperation between and among States
    - rapid measures to **locate and recover** stolen or smuggled nuclear material,
    - **mitigate any radiological consequences** of sabotage and
    - prevent and combat related offences
  - Considering **sabotage and radiological consequences**

**NSS-13 (INFICIRC/225, Rev.5 (2011))**

- “Nuclear Security Recommendations on Physical Protection on Nuclear Material” - For international and national transport
- To achieve effective physical protection against the theft or unauthorized removal of nuclear material and against the sabotage by individuals or groups
Transport of Other Radioactive Material

**NSS-14 (2011)**

- “Nuclear Security Recommendations on Radioactive Material”
- Complementary to NSS-13
- Related to Code of Conduct for Safety and Security of Radioactive Sources
- Two related implementing guides:
  - NSS-09 with definition of security levels (basic and enhanced) and high consequence radioactive material (with dedicated security plans) and
  - NSS-11 (Radioactive Sources, 2009)
Level 1: Class 7 transport
Safety/Security issues

Three sets of Requirements/Recommendations:

• Safety - TS-R-1;
• Security of Nuclear Material (NSS-13); and
• Security of other Radioactive Material (NSS-14)

➡ Challenges:

• Consistency between sets of Requirements and Recommendations
• Harmonization
Level 2: All Classes transport

- **ECOSOC as integrator**
  - Legitimacy of SCETDG (ECOSOC Resol.), with UNECE Secretariat

- **UN Model Regulations**
  
  Need for consistency
  
  - Basis for Model Regulations
  - TS-R-1 consistent with the framework and general principles of UN Orange Book (UNOB)

Differences between UN Model Regulations and TS-R-1

- 2 sets of recommendations mainly evolving independently

→ How should the interface IAEA-SCETDG (TS-R-1 /UNOB) work?
→ Consistency between Safety Requirements for Class 7 and other classes?
→ Does it work for Security Recommendations?
Level 3: Modal transport of all Classes

**Global Scheme – through binding instruments**

**At global level** (for air and sea transport)
- Technical Instructions of ICAO through Chicago Convention
- IMDG Code through SOLAS Convention

**At regional level** (for land transport)
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
- European Agreement for the International Carriage of Dangerous Goods on Inland Waterways (ADN)
- International Carriage of Dangerous Goods by Rail (RID) through COTIF
- MERCOSUR/MERCOSUL Agreement (road and rail transport)
Level 3: Modal transport of all Classes (Cont’d)

• Sea Transport


Safety Of Life At Sea Convention (SOLAS)

• SOLAS Convention 1974, entered into force on 25 May 1980
• Carriage of Dangerous Goods in packaged form (by sea) shall be in compliance the relevant provisions of the IMDG Code (Reg. 3 of Part A of Chapter VII of SOLAS Convention)

International Maritime Dangerous Goods (IMDG) Code

• Mandatory for the 159 contracting parties to SOLAS Convention
• Amendment 34-08 includes the requirements of TS-R-1 (2005 edition) and security provisions (and the recommendations) of 15th edition of UN Model Regulations.
Level 3: Modal transport of all Classes (Cont’d)

- **Sea Transport**
  
  **Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on board Ships (INF Code)**
  
  - Mandatory since 2001 through *Reg. 15 in Part D of Chapter VII of SOLAS Convention*
  
  - Ship carrying INF cargo complies with the INF Code requirements

- **International Ship and Port Facility Security (ISPS) Code**

  - Chapter XI-2 of SOLAS Convention
  
  - Security provisions, not specifically on security of dangerous goods

- **Convention for the Suppression of Unlawful Acts against the Safety of Marine Navigation (SUA)**

  - The 2005 Protocol to the 1988 SUA Convention expanded the scope to include provisions on nuclear material.
  
Level 3: Modal transport of all Classes

• **Air Transport**

  **Chicago Convention**
  • On International Civil Aviation, **Binding instrument** (1947)
  • Annex 18 = international standards and recommended practices for the safe transport of dangerous goods by air

**Technical Instructions of ICAO**
  • Mandatory for the **190 contracting parties** to Chicago Convention
  • 2011-2012 edition of the Technical Instructions of ICAO include TS-R-1 (2009 edition) and security provisions (and the recommendations) of 16th edition of UN Model Regulations

**Dangerous Goods Regulations of IATA**
  • Not mandatory
  • In practice, airlines continue to require compliance with IATA’s current DGR (Updated every two years)
Level 3: Modal transport of all Classes

**Land Transport** (for Europe, Central Asia, Middle East and North Africa)

2011 edition of ADR, RID and ADN = include TS-R-1 (2009 edition) and security provisions of 16th ed. of UNOB.

ADR, RID and ADN = applicable for international transport and national transport (in EU countries)

1. **Road transport (ADR)**
   - ADR, **Binding instrument** (1968), under the auspices of UNECE
   - 47 ADR contracting Parties:

2. **Inland waterways transport (ADN)**
   - ADN, **Binding instrument** (2008), under the auspices of UNECE
   - 17 ADN contracting Parties in Europe

3. **Rail transport (RID)**
   - RID, **Binding instrument** (1980), under the auspices of OTIF
   - 45 Contracting States to COTIF
Level 3: Modal transport of all Classes

• **Land Transport** (Outside Europe, Central Asia, Middle East and North Africa)

**MERCOSUR/MERCOSUL Agreement of Partial Reach to Facilitate the Transport of Dangerous Goods**

  • signed by Brazil, Argentina, Paraguay and Uruguay
  • regulates road and rail transport of dangerous goods, including radioactive material, between these States.
  • includes the requirements of ST-1 (1996 edition) and the recommendations of 12th edition of UN Model Regulations (security provisions appeared only in the 13th edition, 2003).
  • Revised edition under preparation with the requirements of TS-R-1 (2009 edition) and the security provisions (and the recommendations) of 17th edition of UN Model Regulations.

**Other agreements under preparation (South America, Africa, Asia)**
Level 4: Implementation in National Law

• **Regulatory framework**
  • First responsibility of each and every State
  • Directly depending on the adherence to and ratification of legal instruments

Large array of Conventions and agreements, in connection with:
- The transport of dangerous goods
- All modes of transport
- Physical protection of nuclear material
Comprehensive Regulatory framework for Transport Safety

The implementation of IAEA Regs into the Model and Modal Regulations

Class 7
All modes

All 9 Classes
All modes

IAEA Safety Standards
for protecting people and the environment

Regulations for the Safe Transport of Radioactive Material
2009 Edition

Safety Requirements
No. TS-R-1

IAEA
International Atomic Energy Agency

Regional: MERCOSUR/MERCOSUL (4)
ADR (47), RID (45), ADN (17)

Regional: MERCOSUR/MERCOSUL

Mail

(190)

UPU
UNIVERSAL POSTAL UNION

(192)

(159)

IMDG CODE

International Maritime Dangerous Goods Code
Volume 1

Land transport
Road, Rail and Inland Waterway

Air

Sea
A Regulatory framework for Transport Safety and Security

Class 7
Radioactive Material

Mode specific

All 9 Classes
All modes

All 9 Classes
One mode

Nuclear Material
All modes

NSS-14
(NSS-09, NSS-11)

NSS-13
(through CPPNM)

IAEA Safety Standards
for protecting people and the environment

Regulations for the Safe Transport of Radioactive Material
2009 Edition

Safety Requirements
No. TS-R-1

IAEA Nuclear Security Series No. 10
Implementing Guide

Nuclear Security Recommendations on Radioactive Material

Security of Radioactive Sources

Security in the Transport of Radioactive Material

Conventions on the Physical Protection of Nuclear Material

International Maritime Dangerous Goods Code

National Law

Universal Declaration of Human Rights

International Maritime Dangerous Goods Code
Transposition of Safety and Security in National Legislation and Regulations

- **National Law**
- **Modal Regs**
- **UNOB**
- **TS-R-1**

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**Safety**

- **Radioactive Material**
  - **NSS-14** (NSS-09, NSS-11)
  - **UNOB**

- **Nuclear Material**
  - **CPPNM**
  - **NSS-13**

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**Security**

- **Cat III material** (with potential radiological consequences) or below Cat III

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Conclusions

It is crucial that:

- **Member States** fully participate in the elaboration of Requirements/Recommendations;
- **Member States commit to ratify** international instruments;
- **The Agency** continues strengthening interface / synergy between safety and security, and then
- The Agency, the UN and other specialized Agencies further strengthen their interface and cooperation.
Efforts to ensure harmonization of requirements and recommendations in transport safety and security should continue:

- Among the Modes of Transport;
- Among the different Classes of Hazards;
- Between Safety and Security; and
- Between Nuclear Material and Other Radioactive Material.
Thank you - Q&A
Level 3: Modal transport of all Classes

- Postal Transport

Universal Postal Union Convention

- Universal Postal Convention signed in Vienna on 10 July 1964.
- The Universal Postal Union (UPU) regulates the international postal services of its 192 member States.
- The Convention requires that the activity of the radioactive contents does not exceed 1/10 of the activity limits prescribed for excepted packages, as defined by and in compliance with IAEA Transport Safety Regulations (TS-R-1, edition 2009).