Panel discussion: “Appropriate Effective” Nuclear Material and Nuclear Facility Security and the Nuclear Security Regime

Miroslav Gregorič
Office of Nuclear Security
Department of Nuclear Safety and Security

“Appropriate Effective” Material Control and Accounting and Physical Protection
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# Interrelations in nuclear security

## Nuclear Security Regime

- Conventions
- Laws/Penal codes
- Regulations
- Regulatory bodies
- Inspection/Enforcement
- Export/Import
- Threat assessment
- Trustworthiness
- Confidentiality
- Accounting and control
- Physical Protection
- Detection/response
- Deterrence
- Coordination
- Security culture

## Targets for Consequences

- Nuclear weapons
- Nuclear material
- Radioactive material
- Facilities
- Transports
- Transits
- Technology
- Cyberspace
- Sensitive information
- -
- -

## Threat Indicators

- Terrorist organizations
- Criminal organizations
- Terrorist and criminal acts (murders, robberies, thefts, arson, kidnappings, past nuclear facilities incidents, airplane hijackings, drug production, smuggling of drugs and weapons)
- ITDB reports
- Political and economic instability, unemployment, social insecurity, corruption
- Civil wars - UN and other peacekeeping
- Religious tensions
- Extremes wealth-poverty
Platform for global nuclear security regime

• 2005 Amendments to CPPNM – 16 ratifications
• UNSCR1540 and 1673, UNSCR1373
• Code of Conduct on Safety and Security of Radioactive Sources (2003) - 90 States committed
• NPT (1970) 193 Parties, Safeguards 162, Additional protocols 82, NWFZs 5A
Platform for global nuclear security regime

Also related:

• Early Notification Convention (1986) 102 Parties
• Assistance in Case of Accident (1986) 100 Parties
• Convention on Nuclear Safety (1994) 60 Parties
• Joint Convention on Safety of SF and of RW (1996) (45 Parties)
• Code of Conduct on Safety of Research Reactors (90)

Related international guidance:

• Nuclear Security Fundamentals (GC(45)/INF/14)
• INFCIRC/225/Rev. 4 Recommendations on physical protection of nuclear material and facilities
• TECDOC-967 – Guidance and considerations for implementation of INFCIRC/225
• TECDOC-1276: Handbook on PPS
• New IAEA Nuclear Security Series
IAEA - Improving Nuclear Security

- Promoting international legal instruments and implementation
- Developing recommendations and guidelines
- Evaluation and advisory services
- Human resource development
- Information services
- Coordinated research programmes CRP
- Technical improvements and upgrades
Nuclear Security Series Framework

Nuclear Security Fundamentals

Recommendations

Implementing Guides

Technical Guidance: Reference Manuals

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Nuclear Security Culture - No.11
Confidentiality of Nuclear Security Sensitive Information
State Regulatory infrastructure

Nuclear Security Glossary
Model Regulations for Security
TOR for the ITDB and Security Incidents Database

Design Basis Threat: No.12
Protection Against Sabotage - No.15
Security of Radioactive Sources - No.14
Insider threat - No.8
Radioactive Waste Security - No.16
Nuclear Security Risk Management
Nuclear Security Crisis Management and Emergency Response at Facilities

Engineering Safety Aspects of the Protection of Nuclear Power Plants against Sabotage - No. 4
Identification of Vital Areas - No.13
INPRO Manual on Physical Protection - No.10
Physical protection of Research Reactors and Associated Facilities
Security of Information & Instrumentation & Control Systems at Nuclear Facilities No.17
Nuclear Material Accountancy Systems at Facilities

Identification of Radioactive Sources and Devices - No.5
Technical and Functional Specifications for Border Monitoring Equipment - No.1
Nuclear Forensics Support - No.2
Monitoring for Radioactive Material in International Mail - No.3
Combating Illicit Trafficking of Nuclear and Other Radioactive Material - Handbook No.6
Detection and Response for Radioactive Material at Seaports

Radioactive material in use, storage and transport
(also 225/Rev5)

Detection and response to unknown material
Nuclear Security Series –
Published as Technical Guidance

#1: Technical and Functional Specifications for Border Monitoring Equipment

#2: Nuclear Forensic Support

#3: Monitoring for Radioactive Material in International Mail Transported by Public Postal Operators

#4: Engineering Safety Aspects of the Protection of Nuclear Power Plants against Sabotage

#5: Identification of Radioactive Sources and Devices

#6: Combating Illicit Trafficking of Nuclear and Other Radioactive Material - Handbook
Nuclear Security Services - Missions

IPPAS – International Physical Protection Advisory Service
Peer Review of State Physical Protection (40 to 29 States)

INSServ – International Nuclear Security Service (27 States)
Advisory Mission – Overview of nuclear security activities in a State

RaSSIA – Radiation Safety and Security Infrastructure
Appraisal (> 50 States)

ISSAS – SSAC Advisory Service
Advisory Mission – Overview of effectiveness of existing State System of Accounting and Control of nuclear material

ITE – International Team of (legal) Experts

IRRS – International Regulatory Review Services
Human Resource Development
Nuclear Security Education and Training
2002-2008

• Development of curriculum for Master of Science educational programme in nuclear security

• Promoting regional and national educational and training centers
  Russia, Ukraine, India, China, Ghana, Morocco, Pakistan,…

• Wide variety of training events offered:
  • >260 training events
  • >70 hosting States
  • >4500 trainees from >130 States
ITDB - Illicit Trafficking Data Base

- Program began in 1995
- 99 States participate
- Includes information reported by States and open sources
- Cooperation with Interpol
- Covers nuclear and other radioactive material
- 1340 confirmed cases since 1993
  - 845 confirmed cases radioactive sources
  - 258 confirmed cases nuclear material
  - 34 confirmed cases both material
  - 185 confirmed cases with radioactively contaminated material
  - 18 confirmed cases with unknown type of material
- ‘Incidents’ include
  - unauthorized acquisition, possession, provision, use, transfer or disposal
  - intentional or unintentional
  - with or without crossing international borders
  - Unsuccessful attempts to acquire
Nuclear Security Regime - Where to focus

• Promote Universal adherence and implementation of international nuclear security instruments

• Finalize IAEA Nuclear Security Series

• Continue Human Resource Development – Security culture

• Promote international exchange through Advisory services – missions and ITDB

• Rethink misuse of facilities, protection of technology, related materials

• Prepare for renaissance – regulatory infrastructure, stand-off attacks, insiders, transport

• Promote integrated approach - Safeguards (SSAC), Safety and Security