

Protection of Nuclear Materials and Prevention of Their Illicit Trafficking

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2012 Seoul Nuclear Security Summit

- **2009 Prague:** President Obama in his speech called the possession of nuclear weapons by terrorists the most immediate and extreme threat to global security
- **2010 1st Nuclear Security Summit in Washington** discussed strengthening of nuclear security and developed a **global work plan** to secure all vulnerable nuclear materials within 4 years
- **2012 2nd Nuclear Security Summit in Seoul** will discuss:
 - cooperative measures to combat the threat of nuclear terrorism
 - protection of nuclear material and related facilities
 - prevention of illicit trafficking of nuclear materials

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Washington Nuclear Security Summit Communiqué and Work Plan

Nuclear materials security improvements as a result of becoming a signatory to the Washington Nuclear Security Summit Communiqué and Work Plan in CR:

- **effective national legislation** - regularly updated in accordance with the international standards and best practice
- **SSAC** on the SONS (National Regulatory Authority)
- **compliance inspections** of licence holders on a regular basis
- regular contributions to the IAEA **Nuclear Security Fund**

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International Agreements and Conventions

- CR has ratified the amendment of the CPPNM on 21 May 2008
- Physical protection is fully covered for domestic use, storage and domestic or international transport of nuclear material
- CR regularly organizes regional training courses on physical protection of nuclear material and facilities
- IAEA Implementing Guide on the Development, Use and Maintenance of the Design Basis Threat was implemented into the legislation in 2005
- INFCIRC/225/Rev.5
CR was content with all three nuclear security recommendations

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National legislation

- Decree No. 144/1997 Coll. of the SONS on Physical Protection of Nuclear Material and Nuclear Facilities and Their Classification, amended in Decree of the SONS No. 500/2005 Coll.
 - implementing basic principles of CPPNM, INFCIRC/225
 - categorization of nuclear materials and nuclear facilities or parts of nuclear facilities
 - designation of guarded, protected and inner area
 - system and scope of physical protection of nuclear material in transport

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National legislation

- Decree of the SONS No. 500/2005 Coll.
 - incorporating DBT for nuclear facilities into national legislation
 - new requirements for technical systems of physical protection
- Law No. 413/2005 Coll.
 - incorporating into the Atomic Act new article which specifies sensitive activities
 - stipulating who can perform these activities

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UN and other bilateral, regional and multilateral activities

- 1995 training courses concerning physical protection are regularly held
- 1995 CR is a contributor to the IAEA **Illicit Trafficking Database**
- 2002 Czech experts' participation on **IPPAS missions** upon request of the IAEA
- 2005 **International Workshops** on Global Best Practices in Nuclear Materials Accountancy, Control and Physical Protection
- 2009 Regional System for Combating Illicit Trafficking of Nuclear Materials in Murmansk region

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Nuclear material accountancy

- IAEA safeguards system
 - Safeguards Agreements (Additional Protocols)
 - States undertake to accept safeguards for the exclusive purpose of verifying that nuclear materials in all peaceful nuclear activities are not diverted to nuclear weapons or other nuclear explosive devices
- Euratom
 - Euratom Treaty
 - nuclear materials are not diverted from their intended uses and EU international commitments are complied with



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Czech legislation and safeguards

ACT No. 18/1997 Coll.
on Peaceful Utilisation of Nuclear Energy and Ionising Radiation
(the Atomic Act)
and on Amendments and Alterations to Some Acts

CHAPTER TWO

Section 4

- (1) Nuclear energy and nuclear items may be utilised in accordance with international commitments of the Czech Republic solely for peaceful purposes.

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Czech legislation and safeguards

Atomic Act Section 3

Competence of the State Office for Nuclear Safety (1/2)

- (2) The Office
- b) shall monitor non-proliferation of nuclear weapons and carry out **State supervision of nuclear items and physical protection of nuclear materials and nuclear installations**;
 - n) shall maintain a **State system of accounting for and control of nuclear materials** and data and information in accordance with international agreements binding on the Czech Republic, and shall set out requirements for accounting methods and inspection thereof in an implementing legal regulation;

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Czech legislation and export control

■ Competence of the State Office for Nuclear Safety (2/2)

- (2) The Office
- o) shall maintain a national system for registration of licensees, registrants, imported and exported Trigger List items, ...
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- **Two competent authorities in nuclear domain**
 - Ministry of Industry and Trade
 - State Office for Nuclear Safety
 - **Cooperation with the Ministry of Finance**
 - General Directorate of Customs
 - Customs Offices

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Czech legislation and export control

■ Ministry of Industry and Trade – Licensing Office

- Nuclear Suppliers Group
- Australia Group
- Chemical Weapons Convention
- Wassenaar Arrangement
- Missile Technology Control Regime

■ Legal framework

- Act No. 594/2004 Coll., implementing the regime of the European Communities for the control of exports of dual-use items and technology
- **Council Regulation (EC) No. 428/2009** setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items

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Illicit Trafficking Database

Objective and Scope

- established in 1995, following the decision by the IAEA Board of Governors
- to help strengthen **nuclear security** worldwide and prevent **nuclear and radiological terrorism**
- to facilitate exchange of authoritative information on **incidents** of illicit trafficking and other related unauthorized activities involving nuclear and other radioactive materials among States
- Czech Republic joined the ITDB programme on **December 4, 1995**

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Illicit Nuclear Trafficking

Threats assessment – terrorist nuclear attack

- various **unauthorized or illicit activities** (transportation, attempted sale, possession, disposal)
- using various forms of radiological dispersal devices (**Dirty Bomb**)
- **sabotage** at nuclear facility
- using a weapon manufactured from stolen fissile material (**Improvised Nuclear Device**)
- using a **stolen nuclear weapon**

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Illicit Nuclear Trafficking

Threats assessment – potential adversaries

- unsophisticated opportunistic adversaries
 - motivated primarily by money (may be more likely)
- highly sophisticated and determined adversaries
 - may have strong ideological motivations (may be more dangerous)
 - ability to avoid detection and cause greater consequences

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Illicit Nuclear Trafficking

Threats assessment – defense

- **Prevention** of the diversion of the material
 - Physical Protection
 - Safeguards
- **Detection** of the illicit movement of the material
 - Technical means
 - Intelligence
 - Accountancy and Control
- **Response** of the competent authorities

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Prevention

- **cooperation** among the IAEA and Member States
- **inspection activities** – modern equipments and detection techniques
- **cooperation** with the Police of the Czech Republic and the Security Information Service
- **permanent working group of experts were established** - representatives of SONS, Ministry of Interior, Police of the Czech Republic, Ministry of Foreign Affairs, Intelligence Agencies and Directorate of Customs cooperate to combat Illicit Trafficking

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Prevention

- prevention of illicit trafficking should be established by:
 - improving of the **state system of accountancy for and control of the nuclear and radioactive materials**
 - strengthening of the **state system of physical protection of the nuclear and radioactive materials**
 - strengthening of **export controls applied to nuclear transfers** to any non-nuclear-weapon State and, in the case of controls on retransfers, to transfers to any State
 - ensuring **cooperation in the development of technology** to combat nuclear terrorism and to deny safe haven to terrorists seeking to acquire nuclear materials

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Legislative framework

- **National legal instrument** – Atomic Act, issuing of licence for handling with nuclear materials, issuing of licence for export and import of nuclear items or transit of nuclear materials, state system of accounting for and control of **nuclear** and **radioactive** materials
- **International Treaties and conventions** – Treaty on the Non-Proliferation of Nuclear Weapons (with Comprehensive Safeguards Agreement and Additional Protocol in force), Convention on the Physical Protection of Nuclear Material
- **Control regimes** – Nuclear Suppliers Group; Zangger Committee, CTBTO, GICNT,...
- **Information exchange systems** – Illicit Trafficking Database (ITDB)

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Strengthening - Technical Means

Hand – held MCA spectrometers



Strengthening - Technical Means

Radiation Portal Monitors



Illicit Trafficking Database

ITDB requirements in the Czech Republic

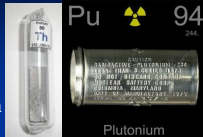
- **cooperation** with the IAEA and ITDB Member States, clarification of the **alleged incidents** to the IAEA
- **encrypted emails** (PGP) for exchange of incidents reports between the IAEA and Member State
- **SONS** plays the main role in the coordination of the activities performed in this field.

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Illicit Trafficking Database

Materials Category

- **Nuclear materials** – uranium, plutonium and thorium
- **Other radioactive materials** – sealed radioactive sources or bulk radioactive materials
- **Other materials** – radioactively contaminated materials in form of contaminated equipments, scrap, agricultural products and other...



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Types of incident

Database includes various type of **incidents** - unauthorized acquisition, provision, possession, use, transfer or disposal of nuclear materials and other radioactive materials.

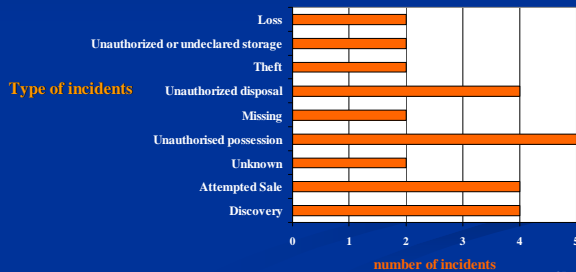
The ITDB also includes inadvertent loss and discovery uncontrolled materials, e.g. **orphan sources**.

- **Group 1 (Unauthorized possession and related criminal activities)** – unauthorized possession, attempted sale, unauthorized (attempted) movement, unauthorized (attempted) transaction
- **Group 2 (Theft or loss)** – thefts, losses, missing, misrouting
- **Group 3 (Other unauthorized activities)** – discovery, unauthorized disposal, unauthorized /undeclared shipment, storage

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Illicit Trafficking Database

Summary of incidents in the Czech Republic

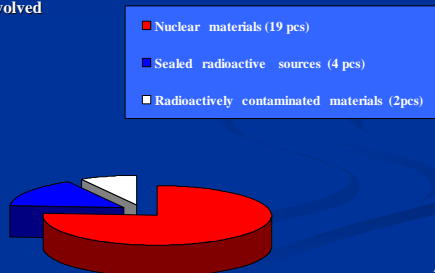


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Illicit Trafficking Database

Summary of incidents in the Czech Republic

Materials involved



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Illicit Trafficking Incidents in CR

Conclusions

- **prevention** of illicit trafficking should be established by:
 - **improving** of the state system of accountancy for and control of nuclear and radioactive materials
 - **strengthening** of the state system of physical protection of nuclear and radioactive materials
- **combating** is ensured through extensive cooperation of the state authorities focusing on investigation of the illegal activities concerning illicit trafficking - **Police of the Czech Republic** and the **Security Information Service** play a principal role in this matter
- **SONS** plays the main role in the coordination of the activities performed in this field

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Illicit Trafficking Database

Thank you for your attention