



International Atomic Energy Agency

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

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**“Appropriate Effective” Material Control and Accounting and Physical Protection
A Joint Global Initiative and UNSCR1540 Workshop
Nashville, USA, 18 July 2008**

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

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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

- **CPPNM – Convention on Physical Protection Of Nuclear Material (1980) 136 Parties**
- **2005 Amendments to CPPNM – 16 ratifications**
- **International Convention for the Suppression of Acts of Nuclear Terrorism (2005) – 40 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**



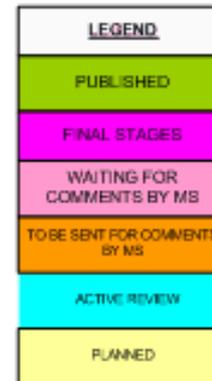
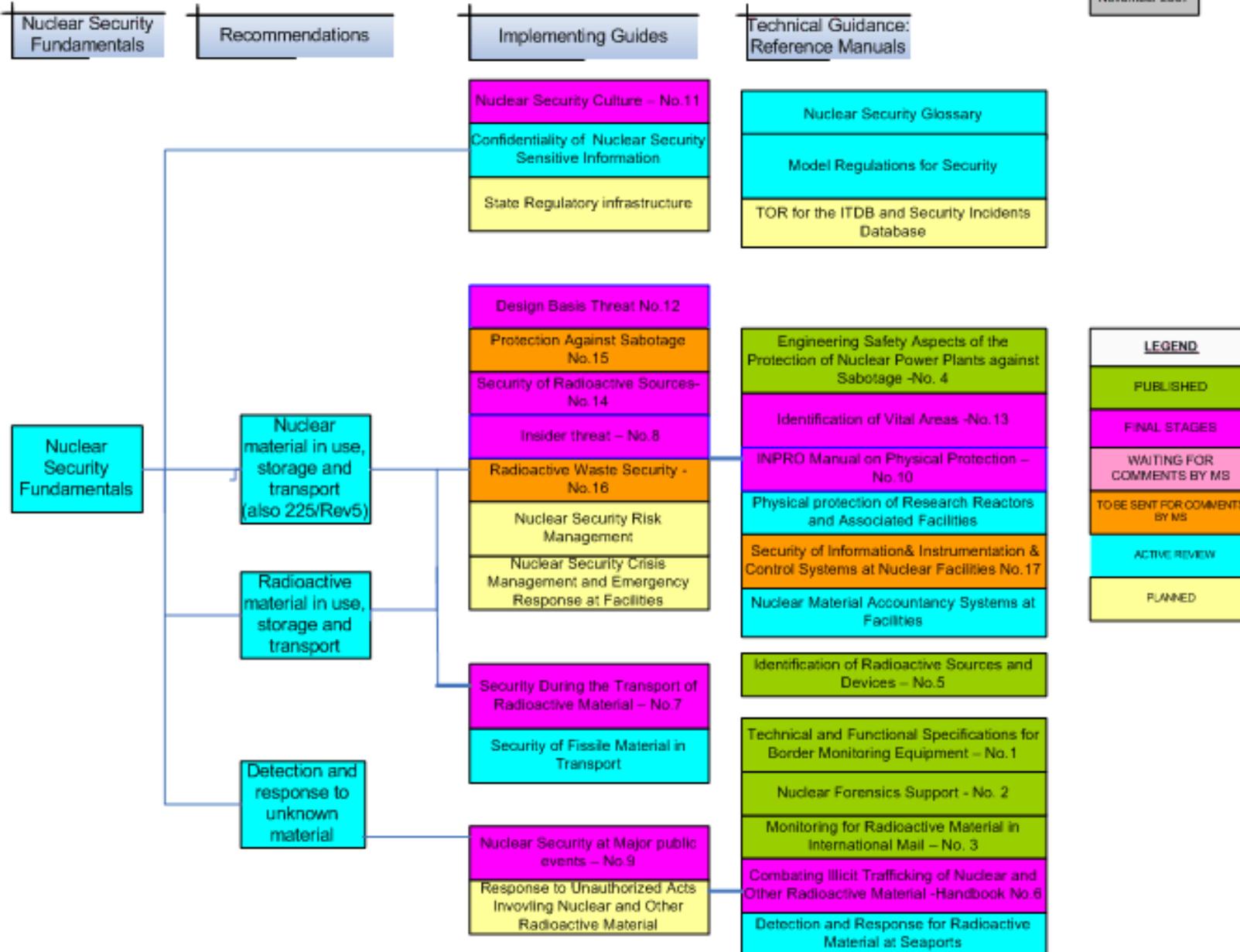
IAEA - Improving Nuclear Security

- **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

November 2007



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



Information services

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

The image displays two screenshots related to the IAEA Illicit Trafficking Data Base. The top screenshot is a paper form titled 'IAEA Illicit Trafficking Incident Notification Form'. It includes fields for 'Restricted Distribution', 'Means of detection', 'Intended use', 'Countries/facilities associated with the Materials', 'Individuals or Organizations involved in the Incident', 'Description of Containers, Packaging and Labelling', 'Radiation Measurements/Laboratory Analysis of Materials', 'Name of Laboratory Performing', and 'Follow-up Activities (Legal Action)'. It also features a signature line for 'Atsach Arvidas S.' and a section for 'Additional information and Comments'. The bottom screenshot is a software interface showing an incident report for 'State / 2000-05-04'. The report details the seizure of 920 grams of highly enriched (about 30% U-235) UO₂ fuel pellets in Batumi, Georgia, on 04/19/2000. The report includes fields for 'Report Date', 'Material Origin State', 'Report Source', 'Chemical Description', 'Physical Description', and 'Agency Comments'. The interface also shows a 'Report' button and a 'Counted' checkbox.



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**

