International Atomic Energy Agency

59th General Conference

Senior Regulators' Meeting – Security Session

16 September 2015

IAEA Perspective: The Framework for the Security of Radioactive Material and Associated Facilities

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Presentation Outline

- Radioactive Material by the Numbers
- The Role of the IAEA
  - International instruments
  - Conceptual Framework
  - IAEA Support to Member States
    - Guidance Development
    - Physical Protection
    - Education & Training
    - Peer Review Missions
    - Coordination Mechanisms
- 2014-2017 Nuclear Security Plan

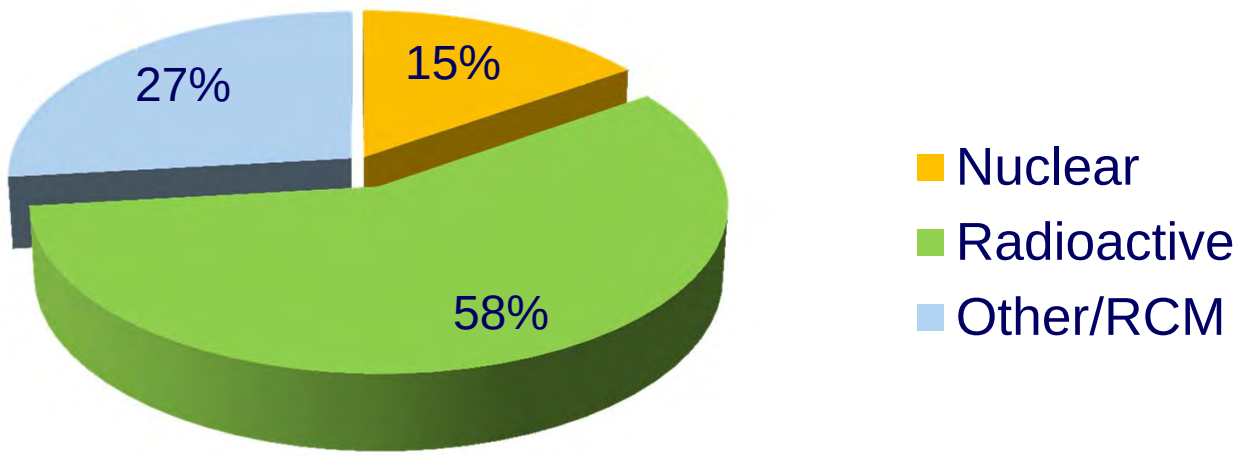
The Scope of the Problem: Sources by the Numbers

- **Nearly every country in the world has radioactive sources in medical or industrial use**
  - **More than 10,000 radiotherapy units for medical care are in use;**
  - **About 12,000 industrial sources for radiography are supplied annually;**
  - **300 irradiator facilities containing radioactive sources for industrial applications are in operation**

Incident and Trafficking Database

From January 1993 to June 2015, over 2800 incidents were reported to the ITDB by participating States and some non-participating States

Confirmed incidents by material type



The Role of the IAEA

Nuclear security is a national responsibility.

- Facilitates adherence to and implementation of international legal instruments related to nuclear security.

- Supports States, upon request, in their efforts to establish and maintain effective nuclear security through, guidance (standards), assistance in capacity building, human resource development, peer reviews and advisory services, R&D, information exchange, and risk reduction.

Legal Instruments for Radioactive Material

***(1) International Convention for the Suppression of Acts of Nuclear Terrorism* (ICSANT)**

- States Parties obliged... to make listed offences punishable under their domestic law, provide for extradition or prosecution of alleged offenders
- States Parties …to adopt appropriate measures to ensure the protection of radioactive material taking into account relevant IAEA recommendations and functions
- State Party …may request assistance and cooperation of other States Parties…and any relevant international organizations, in particular the IAEA
- States Parties involved in the disposition or retention of radioactive material…shall inform the Director General of the IAEA…

Legal Instruments for Radioactive Material

(2) United Nationals Security Council Resolution 1540

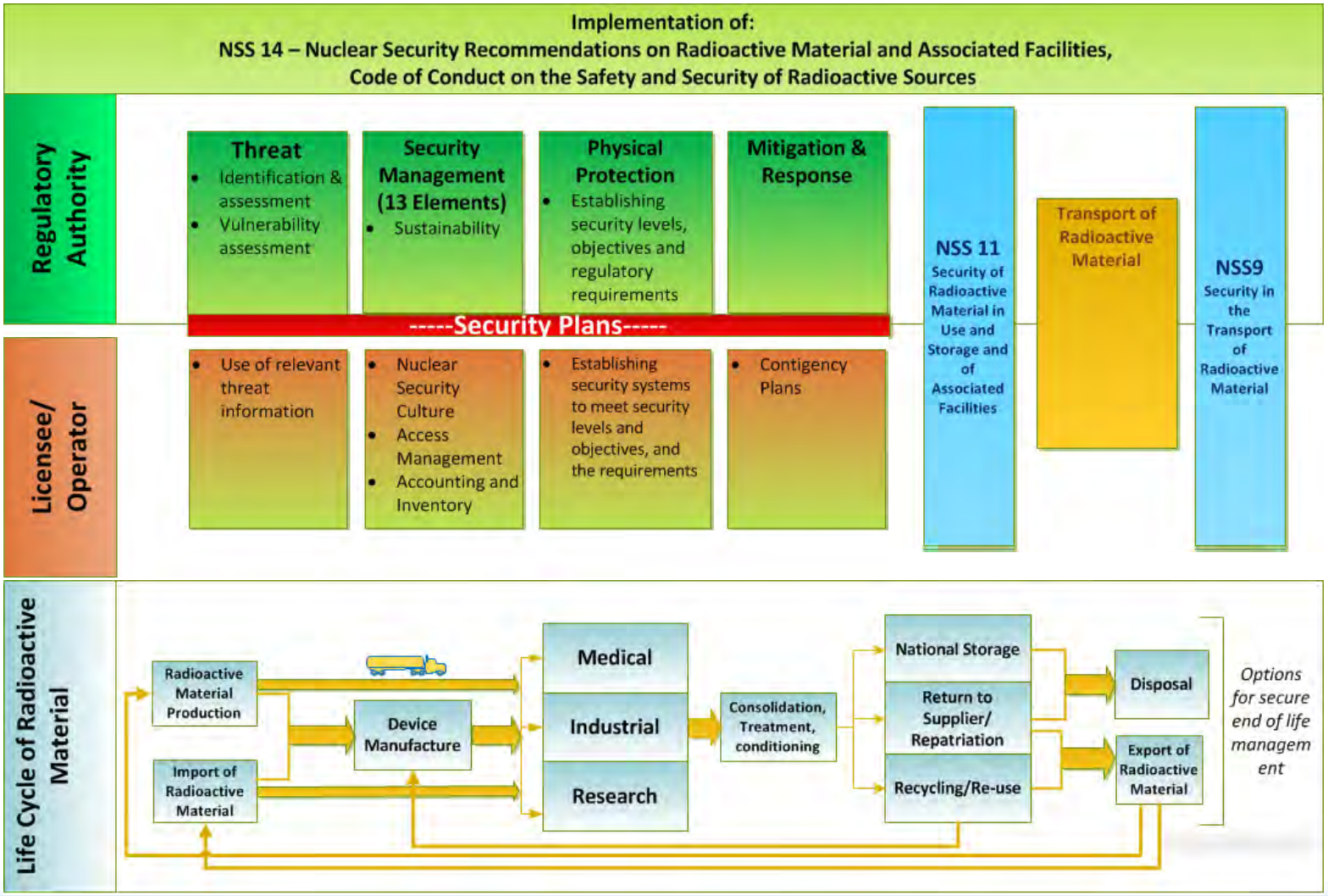
- Resolves to take appropriate and effective actions against any threat to international peace and security caused by the proliferation of nuclear weapons
- Recognizes States' legally binding obligations and commitments to take measures to account for, secure, physically protect sensitive materials,…such as those recommended by the Code of Conduct

Legal Instruments for Radioactive Material

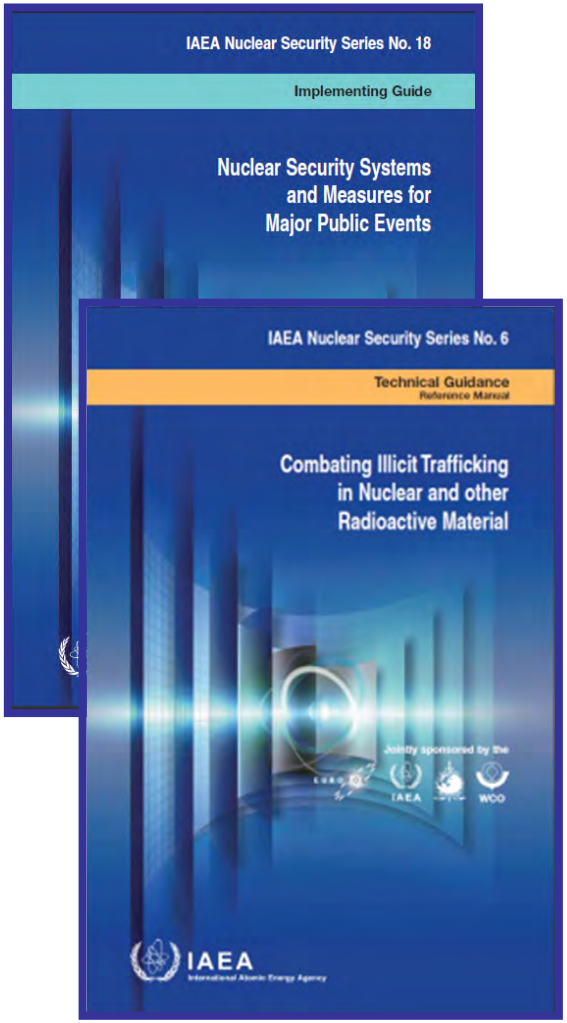
(3) Convention on the Physical Protection of Nuclear Material (CPPNM) and 2005 Amendment

- Addresses physical protection of nuclear material used for peaceful purposes; amendment applies to domestic, use, storage, transport and of nuclear facilities
- States Parties to CPPNM: 153
- Ratification required by 2/3 of States Parties for entry into force of A/CPPNM: 102 required
- ***→14 still needed***

Conceptual Framework for Security of Radioactive Material and Associated Facilities



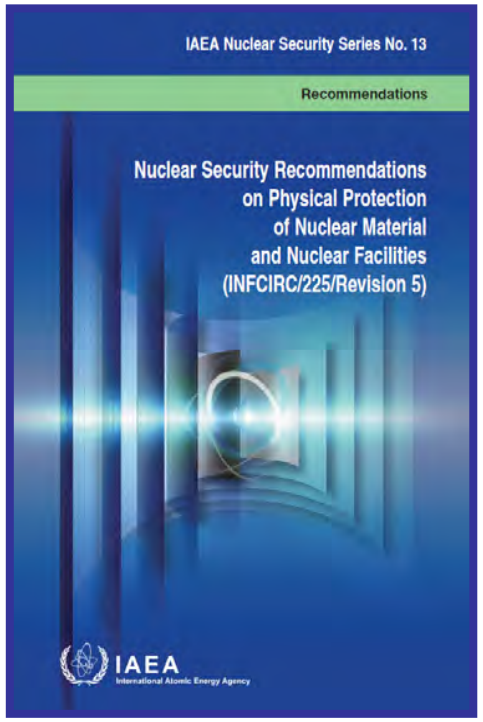
IAEA Nuclear Security Series



The **Nuclear Security Series (NSS),** developed in close consultation with Member States' experts, bring together best practices acceptable to the international community for broad implementation.

The **Nuclear Security Guidance Committee (NSGC)**, open to all Member States, makes recommendations on the development and review of the Nuclear Security Series.
SEA Countries in NSGC: Indonesia, Malaysia, Philippines and Viet Nam.
We will welcome more!

26 NSS Publications include:
1 Fundamentals
3 Recommendations
14 Implementing Guides
8 Technical Guidance



Nuclear Security Guidance

Fundamentals (NSS No. 20)

Recommendations (NSS No. 14 and 15)

Implementing Guides:

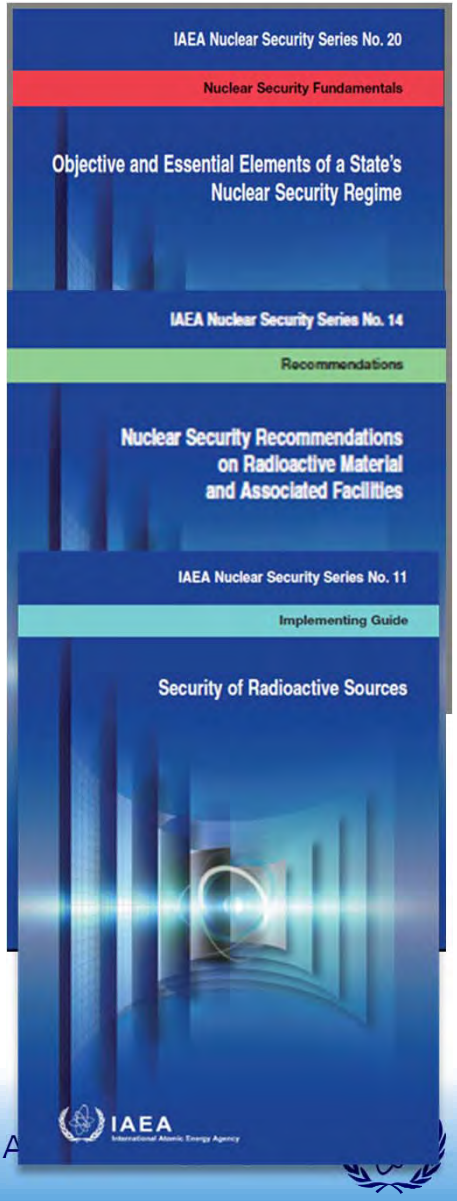
- **Security of Sources (NSS No. 11)**
- **Security in Transport (NSS No. 9)**

→*Both under revision*

Technical Guidance

- **Security Management and Security Plans**
- **Transport of NM and RM; conduct of transport exercises**

->Under development



Code of Conduct on the Safety and Security of Radioactive Sources

- **Approved by the IAEA Board of Governors in September 2003; published in January 2004**
- **First international instrument addressing the security of radioactive sources**
- **To date, 126 MSs have made a political commitment**

Supplementary *Guidance on Import and Export of Radioactive Sources*

- **The IAEA has issued supplementary guidance addressing import / export**
- **Approved 14 September 2004 by the IAEA Board of Governors**
- **To date, 95 countries have submitted letters of support to the IAEA**

Guidance on the Management of Disused Sources

- Intended to be supplemental to the Code of Conduct; similar to I/E guidance
- Drafted in early 2014, reviewed in an open-ended TM in October 2014 with participation of over 150 representatives from 75 States
- Further revisions with broader group of MSs in June and July 2015
- To be discussed and reviewed at a second open-ended TM in December 2015

→***Will be a joint safety-security publication addressing a key issue in lifecycle management***

Security of Radioactive Material – Applies to Entire Lifecycle

- **Physical Protection Upgrades of:**
  - production and manufacturing facilities
  - facilities where radioactive material is used, i.e. hospitals, industrial facilities
  - research reactors

Security of Radioactive Material – Applies to Entire Lifecycle (2)

- Upgrade of temporary storage facilities
- Establishment and upgrade of national central storage facilities
- Removal of disused sources for **re-use, recycling, long term storage**
- Security Considerations for waste management options, including the **borehole disposal concept**

Education & Training

Human resource development is the key to sustainability

Education:

- Master of Science programme in nuclear security (IAEA NSS.12)
- Master programme rolled-out in six Universities in 2013
- International Nuclear Security Education Network, 2010, providing a forum for collaboration in activities for nuclear security education

Training:

- Over 30 different nuclear security training courses designed
- More than 80 training events run per year
- Over 19,000 participants from 120 States trained since 2002
- Nuclear Security Support Centres
- Six E-Learning Modules available in December 2014

International, Regional, and National Activities on Security of Radioactive Material and Associated Facilities

Peer Reviews / Advisory Services

Provided upon request from States

International Nuclear Security Advisory Service (INSServ)

Focuses on:

- nuclear and other radioactive material **out of** regulatory control
- general overview of key elements of national nuclear security regime
- Identification of needs for improvement of legal and institutional framework and technical means
- 77 INSServ to 65 States

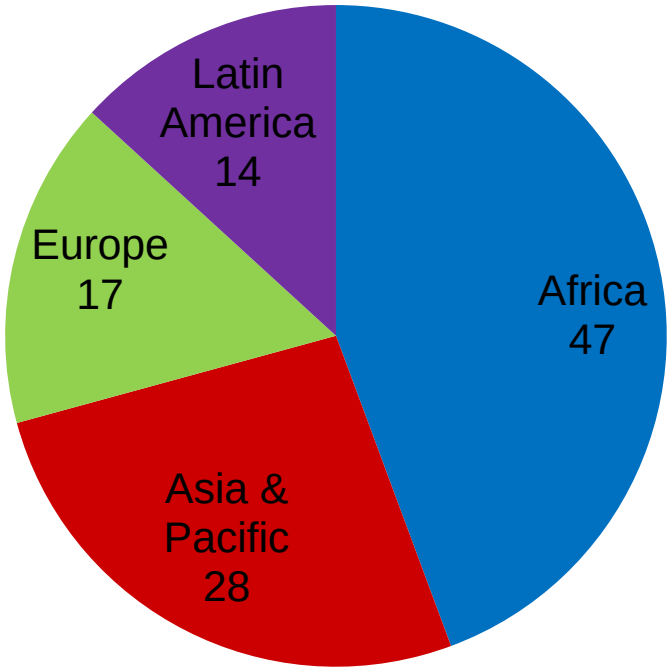
International Physical Protection Advisory Service (IPPAS)

Focuses on:

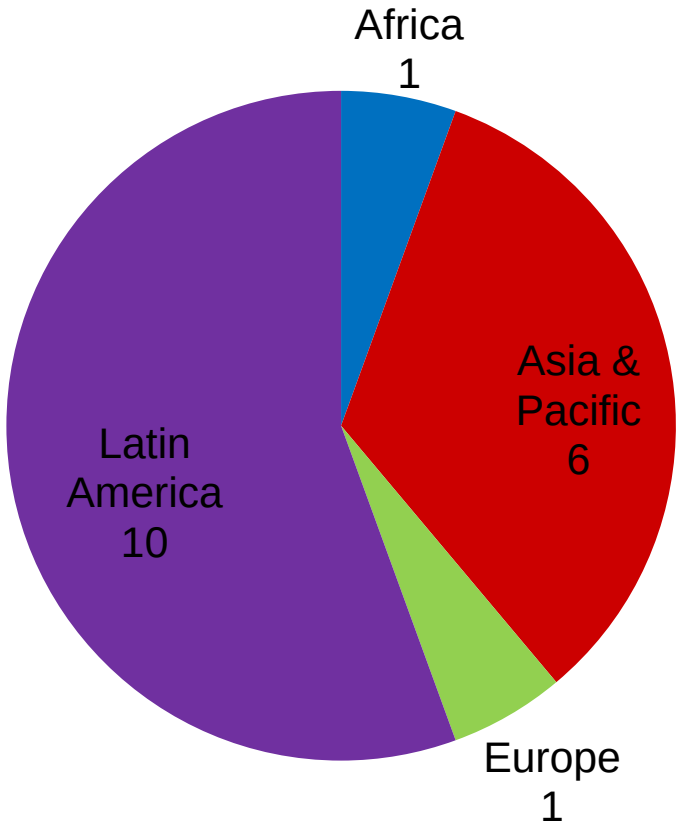
- nuclear and other radioactive material **under** regulatory control
- in depth review of physical protection regime
- Identification of needs for enhancement at state and facility (activity) level, including transport
- 66 IPPAS to 43 States and in the IAEA Laboratories in Seibersdorf
- 12 requests for 2015-2016

Integrated Nuclear Security Support Plans: Distribution by Region

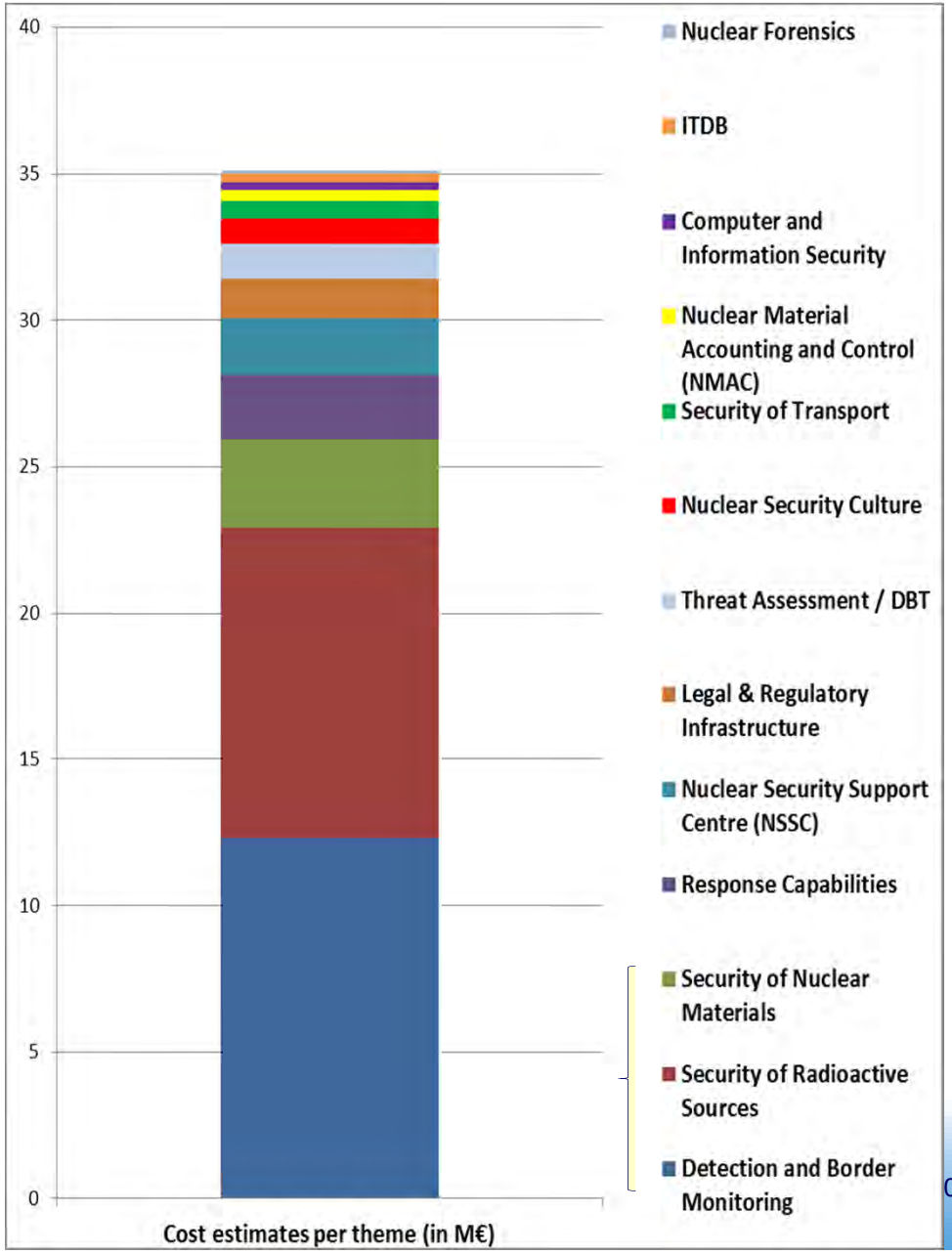
Approved, finalized or drafted INSSPs (106)



INSSPs to be developed (18)



Global Needs Identified for 2015-2016



Security of Radioactive Sources is one of three major themes (Detection and Border Monitoring, and Security of Nuclear Materials) that together account for more than 70% of the needs of States.

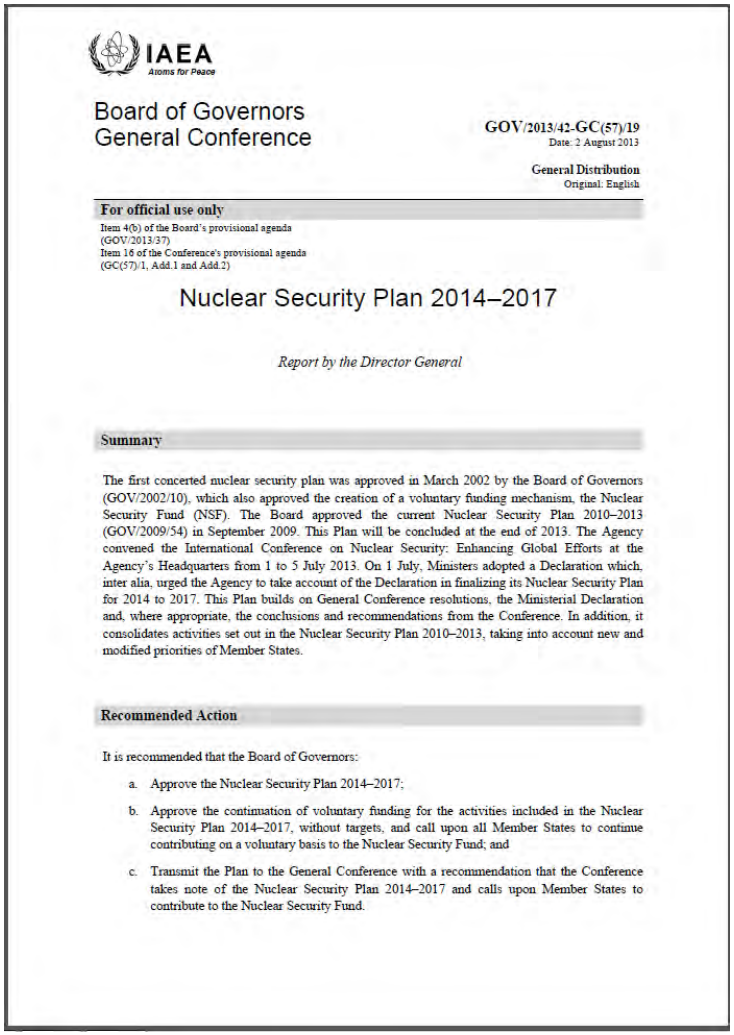
Coordination Mechanisms

- **Working Group on Radioactive Source Security**
  - Open to all Member States; 5th meeting to take place in Q2-2016
  - Forum for discussion on solutions, issues, bilateral cooperation
- **Participation in multilateral, regional, national fora**
- **Radioactive Sources Technical Coordination Group**
  - Broad participation to address coordination between safety, security, waste technology

Nuclear Security Plans

- **Three Nuclear Security Plans (NSPs) completed, 2002-2005, 2006-2009, 2010-2013**

- **Current NSP 2014-2017 underway**



IAEA
Atoms for Peace

Board of Governors
General Conference

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Item 4(b) of the Board's provisional agenda
(GOV/2013/37)
Item 16 of the Conference's provisional agenda
(GC(57)/1, Add.1 and Add.2)

Nuclear Security Plan 2014–2017

Report by the Director General

Summary

The first concerted nuclear security plan was approved in March 2002 by the Board of Governors (GOV/2002/10), which also approved the creation of a voluntary funding mechanism, the Nuclear Security Fund (NSF). The Board approved the current Nuclear Security Plan 2010–2013 (GOV/2009/54) in September 2009. This Plan will be concluded at the end of 2013. The Agency convened the International Conference on Nuclear Security: Enhancing Global Efforts at the Agency's Headquarters from 1 to 5 July 2013. On 1 July, Ministers adopted a Declaration which, inter alia, urged the Agency to take account of the Declaration in finalizing its Nuclear Security Plan for 2014 to 2017. This Plan builds on General Conference resolutions, the Ministerial Declaration and, where appropriate, the conclusions and recommendations from the Conference. In addition, it consolidates activities set out in the Nuclear Security Plan 2010–2013, taking into account new and modified priorities of Member States.

Recommended Action

It is recommended that the Board of Governors:

a. Approve the Nuclear Security Plan 2014–2017;

b. Approve the continuation of voluntary funding for the activities included in the Nuclear Security Plan 2014–2017, without targets, and call upon all Member States to continue contributing on a voluntary basis to the Nuclear Security Fund; and

c. Transmit the Plan to the General Conference with a recommendation that the Conference takes note of the Nuclear Security Plan 2014–2017 and calls upon Member States to contribute to the Nuclear Security Fund.

Nuclear Security Plan (NSP) - 2014-2017

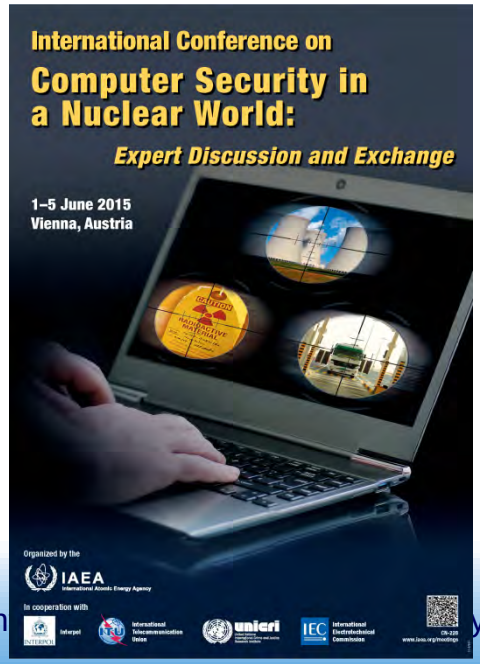
Programme Elements of 2014-2017 NSP

- Needs Assessment, Information and Cybersecurity
- External Coordination
- Supporting the Nuclear Security Framework Globally
- Coordinated Research Projects
- Assessment through Self-assessment and/or through Peer Review Missions
- Human Resources Development
- Risk Reduction and Security Improvement

2015 Computer Security Conferences

International Conference on Computer Security in a Nuclear World: Expert Discussion and Exchange

- **IAEA Headquarters, Vienna, Austria, 1–5 June 2015**
- **Provided a global forum for information exchange for competent authorities, operators, system and security vendors, and other entities engaged in computer security activities relevant to nuclear security.**
- **Statistics**
  - **Registered Participants: > 700**
  - **Member States: 92**
  - **International Organizations: 17**
  - **Speakers and Presenters: > 200**
  - **Over 87% of countries with fuel cycle facilities represented.**
- **Conference materials available on NUSEC**



President's Summary – Key Outcomes

1. **Confirmed the need for nuclear security to include computer security**
2. **IAEA needs to continue its leadership role in supporting Member States through timely development of international nuclear security guidance addressing computer security.**
3. **More detailed computer security guidance at the recommendations level and to continue to prioritize important guidance already under development.**
4. **Conference was a success, but further international and regional expert meetings coordinated by the IAEA are needed to address specific interest areas for computer security**
5. **IAEA should consider initiating appropriate research projects on key computer security topics relevant to nuclear facilities**
6. **IAEA encouraged to explore mechanisms for greater information exchange to assist personnel responsible for computer security incidents and threats.**

Conclusions

Conclusions (1)

- While responsibility for nuclear security within a State rests entirely with that State, consequences of a major security failure would be extremely grave and could transcend borders.

- Nuclear security in States without nuclear power is just as critical as those of nuclear States.

- The central role of the IAEA in coordinating international cooperation in nuclear security has been affirmed in various fora.

Conclusions (2) - Security of Radioactive Material and Associated Facilities…

- Based on internationally legally-binding and non-legally binding instruments, and IAEA recommendations and guidance
- Applies to the entire lifecycle
- Legal and regulatory framework, institutions and organizations, systems and measures should be developed and integrated for a complete nuclear security regime

…Thank you for your attention

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