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Nuclear Security Fundamentals Module 9 topic 2

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Nuclear Security Fundamentals

Module 9 topic 2

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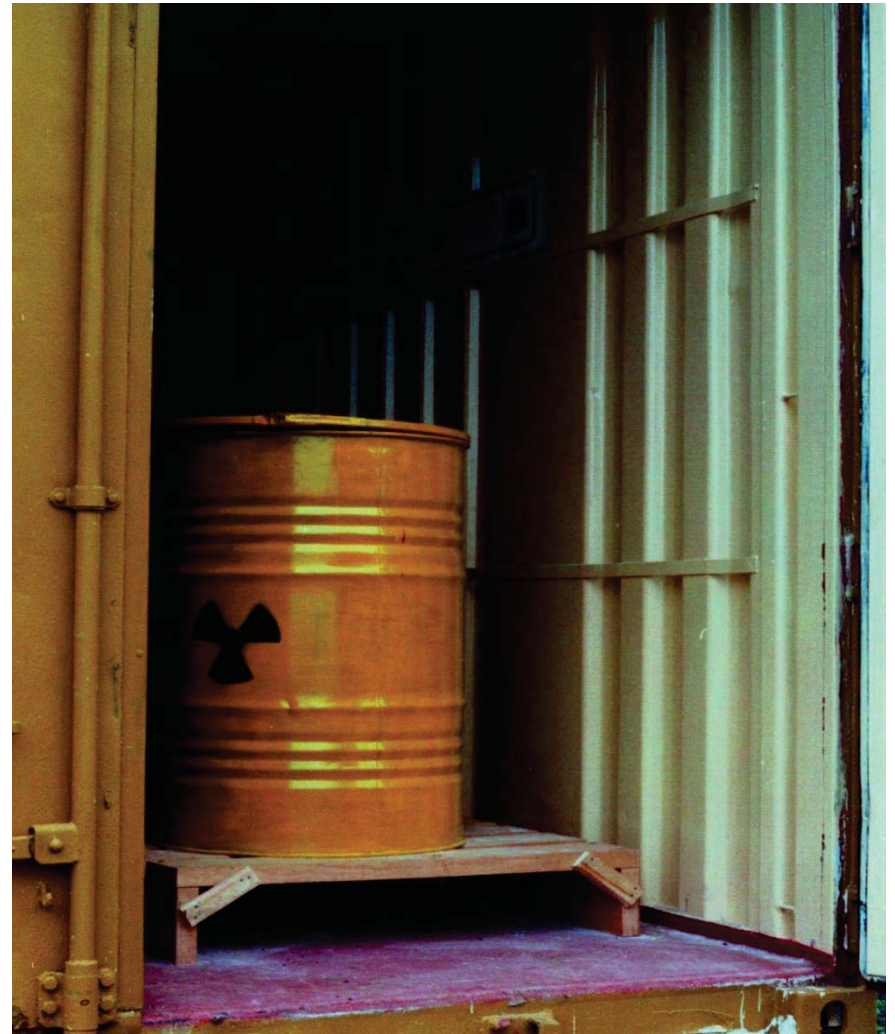
- **What is Nuclear Security**
- **Introduction to the International Legal framework for nuclear security**
- **Nuclear Security Fundamentals Document**
- **Objective and essential elements of a nuclear security regime**



Context

The possibility that nuclear or other radioactive material could be used for malicious purposes is real.

A global threat demands a global response.



The Vision



Achieving worldwide, effective security wherever nuclear or other radioactive material is in use, storage and/or transport, and of associated facilities and for dealing effectively with material that becomes out of regulatory control



Understanding the threat and risk



What is the threat?

criminals or terrorists acquiring and using for malicious purposes:

- Nuclear weapons
- Nuclear material to make IND
- Radioactive material for RDD or RED
- Sabotage of nuclear installations or transport

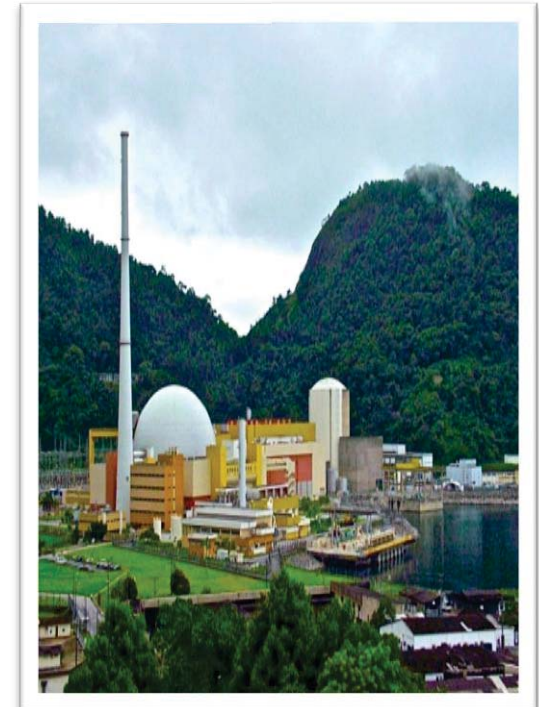
Who poses the biggest risk?

- The States that does not recognize the threat of nuclear terrorism
- The State that does not take preventive action
- The State that is complacent



Potential Targets in Figures

- > 25.000 nuclear weapons
- > 3.000 tons civil and military HEU and Pu
- > 480 research reactors (> 100 with HEU)
- > 100 fuel cycle facilities
- > 430 operating nuclear power plants
- > 100.000 Cat I and II radioactive sources
- > 1.000.000 Cat III radioactive sources



Nuclear Security



Prevention



Detection



Response

... to theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities.

THE **RESPONSIBILITY** FOR THE ESTABLISHMENT, IMPLEMENTATION AND MAINTENANCE OF A **NUCLEAR SECURITY REGIME** WITHIN A STATE RESTS ENTIRELY WITH THAT STATE



Introduction to the International Legal Framework for nuclear security

Conventions & Treaties

- **Convention on the Physical Protection of Nuclear Material (1987) & Amendment (2005)**
- **International Convention on the Suppression of Acts of Nuclear Terrorism (2005)**
- **Treaty on the Non-Proliferation of Nuclear Weapons**
- **Safeguards agreements and additional protocols**
- *Binding United Nations Security Council Resolutions*
- **UNSCR 1540 weapons of mass destruction**
- **UNSCR 1373 – financing of terrorism**

IAEA Codes of Conduct

- **Code of Conduct on the Safety and Security of Radioactive Sources**
- **Supplementary Guidance on Import and Export**

Amendment to the Convention on the Physical Protection of Nuclear Material

IAEA International Law Series



**Convention
on the Physical Protection
of Nuclear Material**

LEGAL SERIES No.12



INTERNATIONAL ATOMIC ENERGY AGENCY, VIENNA, 1982

IAEA Nuclear Security Series

➤ Nuclear Security Fundamentals

- ✓ Approved by Board of Governors and the General Conference of the IAEA in 2012
- ✓ Objectives and essential elements
- ✓ Based on provisions in the international instruments, experience of States and IAEA
- ✓ Basis for Nuclear Security Recommendations

18 publications
so far

➤ 3 Recommendations (WHAT?)

- ✓ Elaborate on the essential elements and provide international consensus on how States may apply the elements

➤ Implementing Guides (HOW?)

- ✓ Broad guides on how Recommendations to be applied
- ✓ Ways and means for how Recommendations implemented at systems level

➤ Technical Guidance

- ✓ Reference Manuals, Training Guides, Service Guides



The Fundamentals Document

Purpose

The *Nuclear Security Fundamentals* document provides the objective and essential elements of a State's national nuclear security regime.



Objective of Nuclear Security Regime

The Objective of a State's *nuclear security regime* is to protect persons, property, society, and the environment from harmful consequences of a *nuclear security event (that has potential or actual implications for nuclear security that must be addressed).*

To achieve this objective States should establish, implement, maintain and sustain an effective and appropriate nuclear security regime to prevent, detect and respond to such nuclear security events



Essential Elements of a Nuclear Security Regime

- 1. State responsibility to establish, implement, maintain & sustain a nuclear security regime applicable to all *nuclear material, other radioactive material* and their *associated facilities & associated activities under the jurisdiction of the State*.**
- 2. Identification and definition of nuclear security responsibilities of competent authorities designated by the State (including *regulatory bodies, law enforcement, customs and border control, intelligence* and security agencies, health agencies, etc) and all authorized persons**



Essential Elements of a Nuclear Security Regime

3. Legislative & regulatory framework to govern the regime

- establish **competent authorities and regulatory bodies**
- ensure **independence** (functional & financial) of **regulatory bodies**
- assign nuclear security **responsibilities and provide** sufficient financial, human and technical **resources**
- ensure proper **coordination and communication**
- establish **regulations and procedures** for:
 - evaluating applications & granting authorizations and licenses
 - protecting the confidentiality of **sensitive information & protection of sensitive information assets**



Essential Elements of a Nuclear Security Regime

3. Legislative & regulatory framework to govern the regime (Con't)

- ensure that there are procedures for the **State** to assume the **prime responsibility for security** in the absence of authorized persons
- establish nuclear material and other radioactive material **accounting or registering and ensure control and protection**
- establish **law enforcement systems** and measures relevant for nuclear security
 - measures for **export, import and border control** of *nuclear material & other radioactive materials*
 - security procedures for **transport**
- establish **verification and enforcement** measures to ensure compliance **with applicable laws and regulations**, including imposition of sanctions.



Essential Elements of a Nuclear Security Regime

4. International transport of nuclear and other radioactive material

Adequate protection until that responsibility is properly transferred to another State.

5. Offenses & penalties including criminalization

A nuclear security regime includes measures for:

- **defining criminal or intentional unauthorized acts** involving or directed at nuclear material, other radioactive material, associated facilities or associated activities **as offenses under domestic laws**;
- dealing with **other acts that have an adverse impact on nuclear security**;
- **establishing the jurisdiction** of the State over such offenses or violations;
- providing for the **prosecution/extradition** of alleged offenders;



Essential Elements of a Nuclear Security Regime

6. International Cooperation & Assistance

A nuclear security regime provides for cooperation and assistance between and among States, either directly or through the IAEA or other international organizations by:

- Making known designated point of contacts for notification, assistance & cooperation;
- Providing timely information to States concerned about events or credible threats;
- Providing timely response to requests for assistance (recovery, technical assistance, including nuclear forensics or mutual legal assistance);
- Cooperating and exchanging of experience & information
- Ensuring protection of exchanged sensitive information;



Essential Elements of a Nuclear Security Regime

7. Identification & assessment of **nuclear security threats**

A nuclear security regime ensures that:

- **nuclear threats are identified and assessed regardless of whether the targets of internal nuclear security threats are within or outside the jurisdiction of the State;**
- **State's assessments of nuclear security threats *are kept up-to-date and are used in implementing the State's nuclear security regime;***



Essential Elements of a Nuclear Security Regime

8. Identification & assessment of **targets & potential consequences**

A nuclear security regime ensures that:

- targets are identified and assessed **to determine if they require protection from nuclear threats;**
- assessment is based on **potential consequences should the targets be compromised;**
- an **up-to-date assessment of such targets is maintained;**



Essential Elements of a Nuclear Security Regime

9. Use of Risk-Informed Approaches based on *graded approach** and *defense-in-depth***, taking into account:

- State's **current assessment** of the *nuclear security threats*;
- **Relative attractiveness of identified targets to threats**
- **Characteristics** of the *material, facilities and activities*;
- Potential harmful **consequences** from criminal acts involving or directed at *nuclear material, other radioactive material, associated facilities, associated activities*;

* The application of nuclear security measures proportional to the potential consequences of such acts.

** The combination of successive layers of systems & measures for the protection of targets from nuclear security threats.



Essential Elements of a Nuclear Security Regime

10. Detection of *Nuclear Security Events*

A nuclear security regime ensures that nuclear security systems and measures are in place to:

- **detect and assess *nuclear security events*;**
- **notify the relevant *competent authorities* for **initiating appropriate response actions:****
- **at facilities;**
- **at major public events or strategic locations;**
- **in searches for, recoveries of, or discoveries of such material that is missing or lost or otherwise out of regulatory control;**
- **within the State's territory or on board its ships or aircraft and at its international borders;**



Essential Elements of a Nuclear Security Regime

11. Planning for, Preparedness for, and Response to a *Nuclear Security Event*

A nuclear security regime ensures that **competent authorities are prepared to respond, at local, national & international levels** to events by:

- **developing arrangements and response plans** to ensure:
 - rapid mobilization of resources to an event;
 - coordination and cooperation during response;
 - use of relevant international assistance and response systems;
 - investigation of any *nuclear security event* and prosecution/extradition of alleged offenders,
- **exercising, testing and evaluating the plans for effectiveness:**
 - to mitigate and minimize harmful consequences from *nuclear security events*,
 - to locate, recover, and secure *nuclear material* and *other radioactive material* that is out of *regulatory control*;



Essential Elements of a Nuclear Security Regime

12. Sustaining a *Nuclear Security Regime*

A nuclear security regime ensures that each organization with nuclear security responsibilities contributes to the sustainability of the *regime* by:

- maintaining **integrated management systems and quality management systems**;
- demonstrating **leadership** in nuclear security matters
- maintaining a robust **nuclear security culture**;
- allocating **sufficient** human, financial and technical **resources** to carry out nuclear security responsibilities,
- conducting **maintenance, training and evaluation** to ensure effectiveness of the *nuclear security systems*;
- using **best practices and lessons learned** from experience;
- minimizing **insiders threats**;
- identifying and addressing **issues that may affect capacity** to provide adequate nuclear security at all times.



Thank You!

