

FNCA Workshop on Nuclear Security and Safeguards

Kazakhstan, 8 - 11 September 2015

PERSPECTIVES ON NUCLEAR SECURITY CULTURE

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Overview – Nuclear Safety and Nuclear Security

- Overall Objective: To protect people and the environment from harmfulness of ionising radiation
- Specific Objectives:

- **Radiation and nuclear safety**

To protect people from harmful effect of radiation activities (radioactive sources, nuclear material, radiation practices, radiation facilities and nuclear installation)

- **Nuclear security**

To protect radioactive sources, nuclear material, radiation and nuclear facilities from theft, unauthorised and malicious acts and sabotage

Legislation and Regulations

Laws

- Atomic Energy Law, 2008.
- Penal code 1999 and its amendment 2009.

Decree

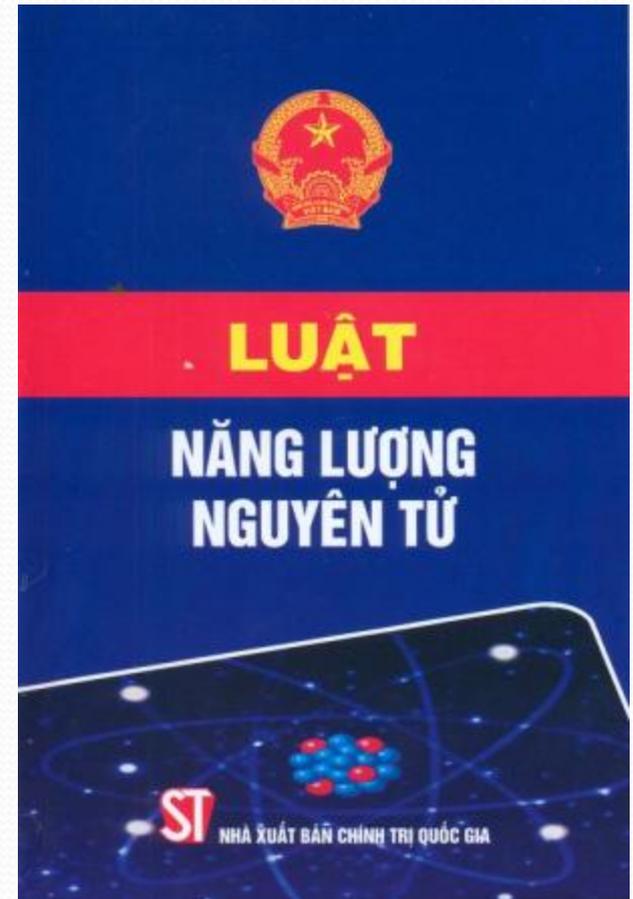
- Decree No. 107/2013/ND-CP, regulations on administrative sanction of violations in the field of atomic energy

Legislation and Regulations - Circulars

1. Regulations on Recovering and Handling Orphan Sources adopted by the Prime Minister on 4 Sept 2007
2. Circular No.08/2010/TT-BKHCHN dated July 22, 2010 on guiding for notification, licensing to perform radiation practices and radiation staff certification
3. Circular No.23/2010/TT-BKHCHN dated 29 Dec 2010 on Ensuring Security for Radioactive Sources
4. Circular No.24/2010/TT-BKHCHN dated 29 Dec 2010 on Issuance of National Technical Regulation QCVN 6/2010-BKHCHN on Radiation Protection – Categorization and Classification of Radioactive Sources

Legislation and Regulations

- Atomic Energy Law
 - June 3rd, 2008: the National Assembly passed the Law on Atomic Energy;
 - Jan 1st, 2009: the Law came into force
 - 11 Chapters and 93 Articles
 - Main contents:
 - Promoting the atomic energy uses;
 - Regulating the safety, security, and safeguards;
 - Participating in and implementing international legal instruments;
 - Strengthening the international cooperation.



Legislation and Regulations

Atomic Energy Law

- Article 6 specifies the principles for activities and the assurance of safety and security in the field of atomic energy;
- Article 12 specifies 14 acts that are prohibited.
- Chapter III specifies provisions on radiation and nuclear safety and security of radioactive sources, nuclear materials and nuclear equipments;
 - Provisions on security issues are specified in the **Article 22**
 - Defence in depth principle is provided for in **Article 23**
- Chapter VII specifies provisions on transport and import, export of radioactive materials, nuclear equipment;

Legislation and Regulations – Law

Article 22: Security of radioactive sources, nuclear material and nuclear equipment

1. Organizations, individuals possessing radioactive sources, nuclear material and nuclear equipment shall apply the security measures:
 - Access control to radioactive sources, nuclear material and nuclear equipment shall be implemented;
 - Unauthorized individuals shall be prohibited to access to the radioactive sources, nuclear material and nuclear equipment;
 - The control of radioactive sources, nuclear material and nuclear equipment shall be in compliance with conditions specified in the license;
 - Internal transfer of radioactive sources and nuclear material can be done with written permit by the head or authorized person of the facility and shall require take-over protocol;
 - Annual inventory taking shall be conducted to ensure radioactive sources, nuclear material, and nuclear equipment to be in the specified place in security conditions.
 - Security measures shall be kept confidential unless otherwise specified by laws.

Legislation and Regulations – AE Law

Article 22: Security of radioactive sources, nuclear material and nuclear equipment

2. Organizations, individuals handling radioactive sources and handling nuclear material and nuclear equipment shall, in addition to the requirements specified in item 1 of this Article, comply with the following requirements:
 - A security plan shall be in place;
 - Unauthorized access to radioactive sources, nuclear material, and nuclear equipment shall be promptly detected and prevented;
 - Appropriate measures shall be immediately applied in order to recover the radioactive sources, nuclear material, nuclear equipment that have been stolen, illegally transferred or used;
 - Sabotage of radioactive sources, nuclear material, nuclear devices shall be promptly prevented;
 - Plan for regular accounting on daily, weekly or monthly basis shall be established in accordance with guidance by the agency for radiation and nuclear safety;
 - Information of the security system shall be kept confidential, unless otherwise specified by laws.

Legislation and Regulations – AELaw

Article 23: Defense in Depth

- Defence in depth is the simultaneous use of multi- measures, multi-layers to ensure and maintain safety and security.
- Organizations, individuals conducting radiation practices shall comply with principles of defence in depth in accordance with the potential threats and hazards of radioactive sources, nuclear material posed to people and the environment.

Legislation and Regulations – AE Law

Transportation

- Article 66.1: Organizations, individuals conducting radioactive material transportation activities shall establish and implement plans for ensuring safety and security.
- Article 66.4: The Ministry of Science and Technology shall provide guidelines on plans for ensuring safety and security and the emergency response for transportation

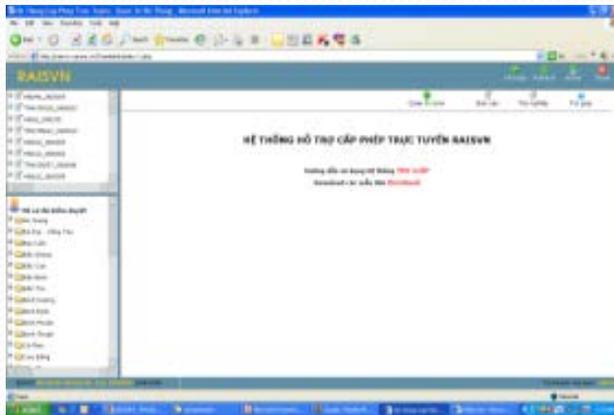
Export and Import

- Radioactive materials, nuclear equipment can be exported/imported only after being licensed by the regulatory authority

Legislation and Regulations – Licensing

Circular No.08/2010/TT-BKHHCN dated July 22, 2010 on guiding for notification, licensing to perform radiation practices and radiation staff certification

- Radiation practices shall be licensed
- Radiation practices include the use, storage, transport, import and export of radioactive sources
- Data base of radiation sources, licensing & inspection documentation are maintained using RAISVN (Web version)



Legislation and Regulations – Orphan sources

Regulations on Detection, Recovering and Handling Sources out of regulatory control issued by the Prime Minister's Decision No. 146/2007/QĐ-TTg on 4 September 2007

- 5 Chapter with 12 Articles
- Specifies responsibilities of organisations, individuals in detection, recovering and handling sources out of regulatory control, including MOST, VARANS, Customs, police, Provincial Departments of Science and Technology.
- Funding is provided by the State; However, once the source is found and recovered, and its owner is identified, the cost for the recovery operation shall be borne by the owner.

Legislation and Regulations – Security of RS

Circular No.23/2010/TT-BKHCHN dated 29 Dec 2010 on Ensuring Security for Radioactive Sources

- 3 Chapters with 16 Articles
- The primary responsibility of security of radioactive sources rest with licensees
- Graded approach: Security measures shall be corresponding to the relative attractiveness of a RS, the nature of the source and potential consequences associated with its unauthorised removal or sabotage.
- Four security levels: Level A (Category 1 sources); Level B (Category 2 sources); Level C (Category 3 sources); and Level D (Category 4 and 5 sources).
- Security measures are specified for each security level for RS in use, storage and transport, increasing with the increase of the security level.

Incidents (1/3)

- May 2007: Radioactive material (Eu-152) stolen at a research institute (source broken, container taken away, the place had to be decontaminated)
- Sept 2014: A Iridium-192 source stolen in HCMC
- March 2015: A Co-60 source went missing in Ba Ria – Vung Tau



Decontamination was conducted at 628 Bach Dang street



Incidents (2/3)



A strange subject was found on a street

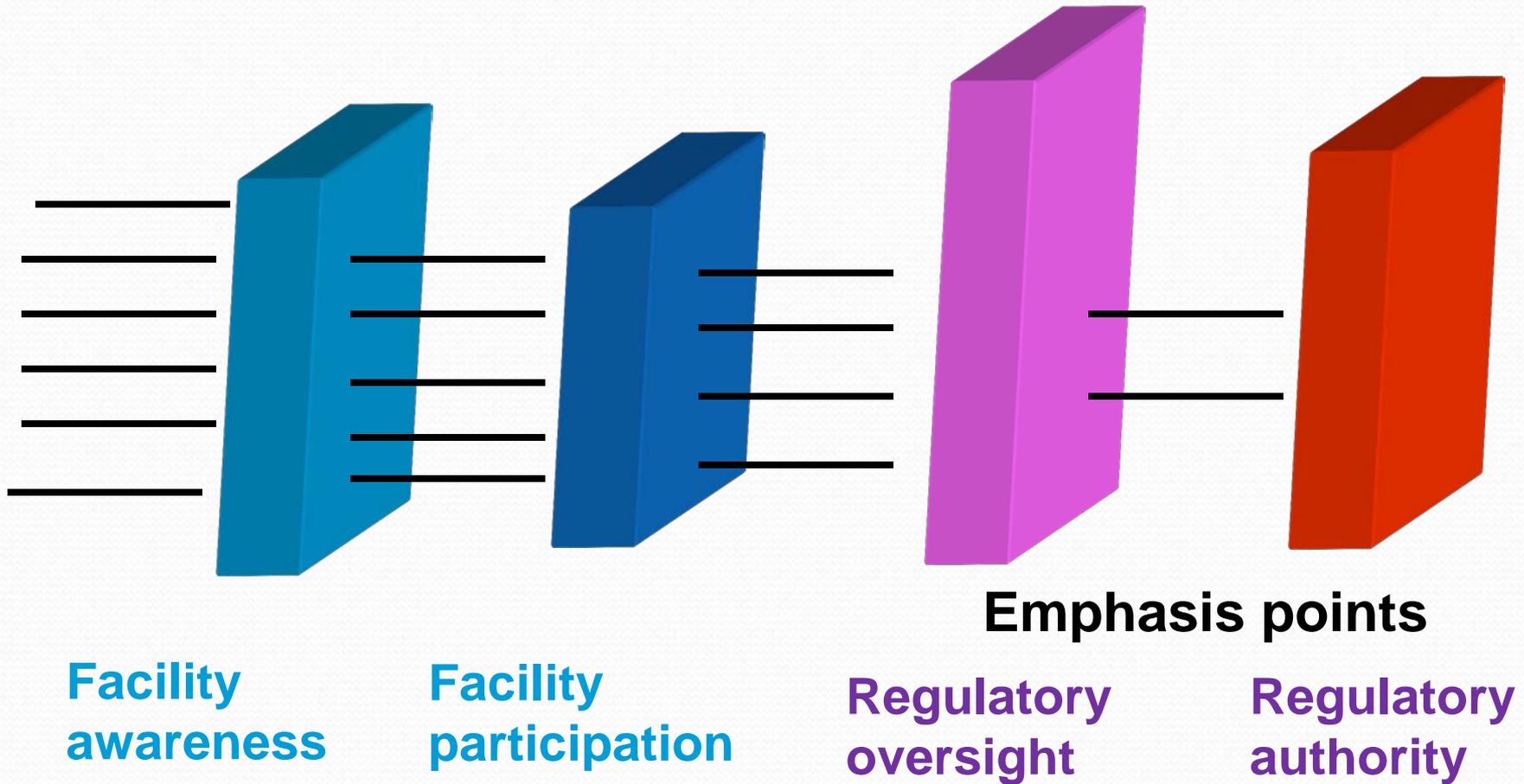


With assistance from public, the TSO of RB has received the information of “orphan items/sources” in time to prevent hazard consequences to public and environment.

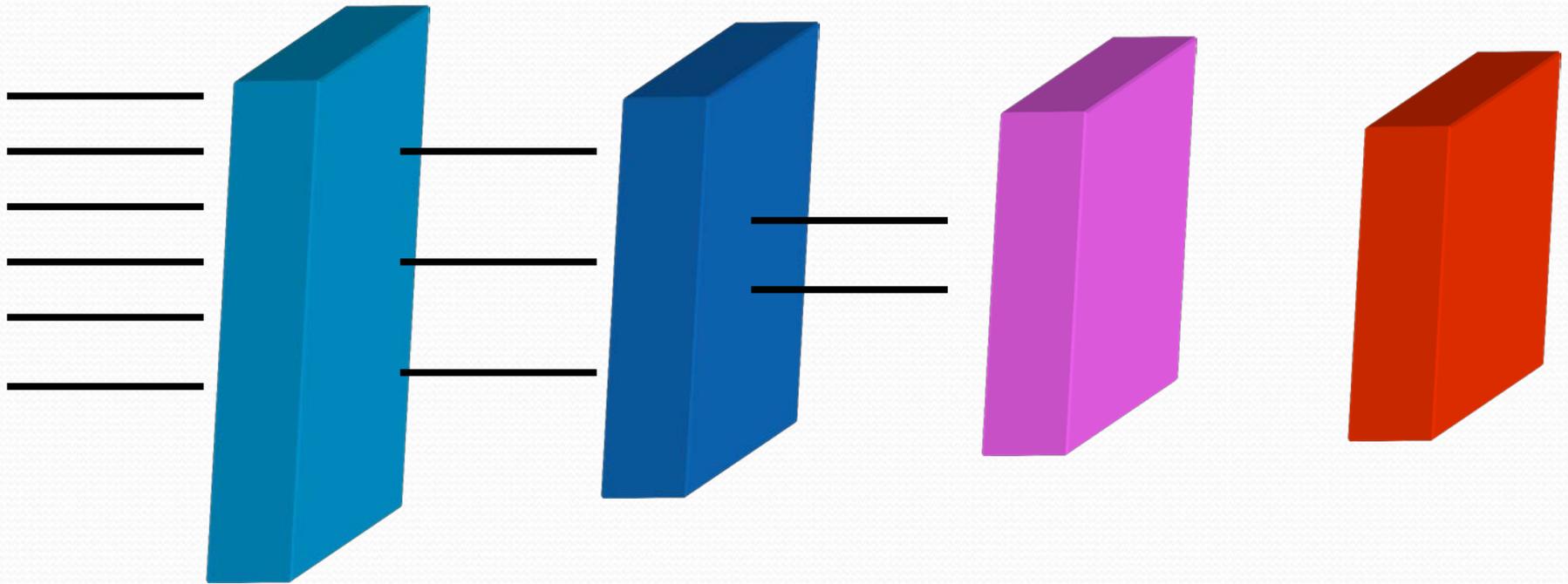
Incidents (3/3)

- Lack of disciplines and awareness of safety and security culture contributes to the source loss or missing.
- Public awareness plays an important role in the identification of potentially radioactive materials. Hence, it is important for the general public educated regarding RN-related issues.
- It was important for the response team to be deployed to the scene quickly. Even though many calls, such as the one described here, might not result in the discovery of radioactive materials, the team must always be ready for the next call, in which radioactive materials could actually be present.
- It is important to maintain a state of readiness and for a security culture to be developed.

Role of Facility (1/2)



Role of Facilities (2/2)



Emphasis points

Facility
awareness

Facility
participation

Regulatory
oversight

Regulatory
authority

Elements of Sustainable Security Regime

Role of Government

- Commitment from high-level national decision-makers;
- Sets an overall security policy that is based on current evaluation of the threat
- Establish a legislative and regulatory framework
 - A licensing system;
 - An inspection and enforcement system;
 - National source register;
 - Establish a regulatory body, consistent with IAEA standards and providing the regulatory body with authority in a range of areas, including security issues
 - Training programs, including awareness raising for senior decision makers, Train-the-Trainer courses for regulatory body staff and general staff
 - Promotes coordination and cooperation among government agencies

Elements of Sustainable Security Regime

Role of Facility/ Organisation

- Commitment from the top managers of facilities
- Establish a clear policy that gives nuclear security a high priority, overriding operational considerations
- Facility security plans, with clearly defined procedures and allocation of responsibility, including manager responsible for nuclear security with sufficient autonomy, and authority;
- Allocate sufficient financial, technical, and human resources
- Training and refreshment program at facility level to ensure staff qualification

Elements of Sustainable Security Regime

Role of Facility Managers

- Demonstrate commitment to nuclear security
- Motivate staff
 - A credible threat exists
 - Security is part of the job (whatever the job is)
 - Security “counts,” e.g., in performance evaluation
- Seek continuous improvement
 - Self-assessment and corrective action
 - Drills and tests
 - Benchmarking

Elements of Sustainable Security Regime

Role of Staff

- Recognize that security is everyone's responsibility
- Understand their specific duties
- Follow policies and procedures rigorously: never "cut corners" where security is concerned
- Identify and report security weaknesses and problems
- Protect sensitive information
- Maintain vigilance

Elements of Sustainable Security Regime

Promote human performance

- SECURITY RELIES ON PEOPLE
 - Staff behavior, attitude, honesty, maturity, as well as trustworthiness and reliability
 - Capacity and **willingness** to follow security policies and implement security procedures
 - Proper training and necessary resources to meet security responsibilities
- Organization's quality assurance and/or human performance programs and systems should include security

THANK YOU!



Halong Bay - Viet Nam