Overview of Nuclear Security Regime in Lithuania

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Discussion on Cooperation to Counter Illicit Trafficking of Nuclear or Other Radioactive Materials

International Conference on Nuclear Security: Commitments and Actions

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Nuclear Security Regime in Lithuania

Legal Framework (international level)

- **Binding international documents**
  - The Convention on the Physical Protection of Nuclear Material
  - The Amendment to the Convention on the Physical Protection of Nuclear Material
  - United Nations Security Council Resolution 1373
  - United Nations Security Council Resolution 1540
  - International Convention for the Suppression of Acts of Nuclear Terrorism
- **International recommendations**
  - Code of Conduct on the Safety and Security of Radioactive Sources, and supplementary Guidance on the Import and Export of Radioactive Sources
  - IAEA Nuclear Security Series

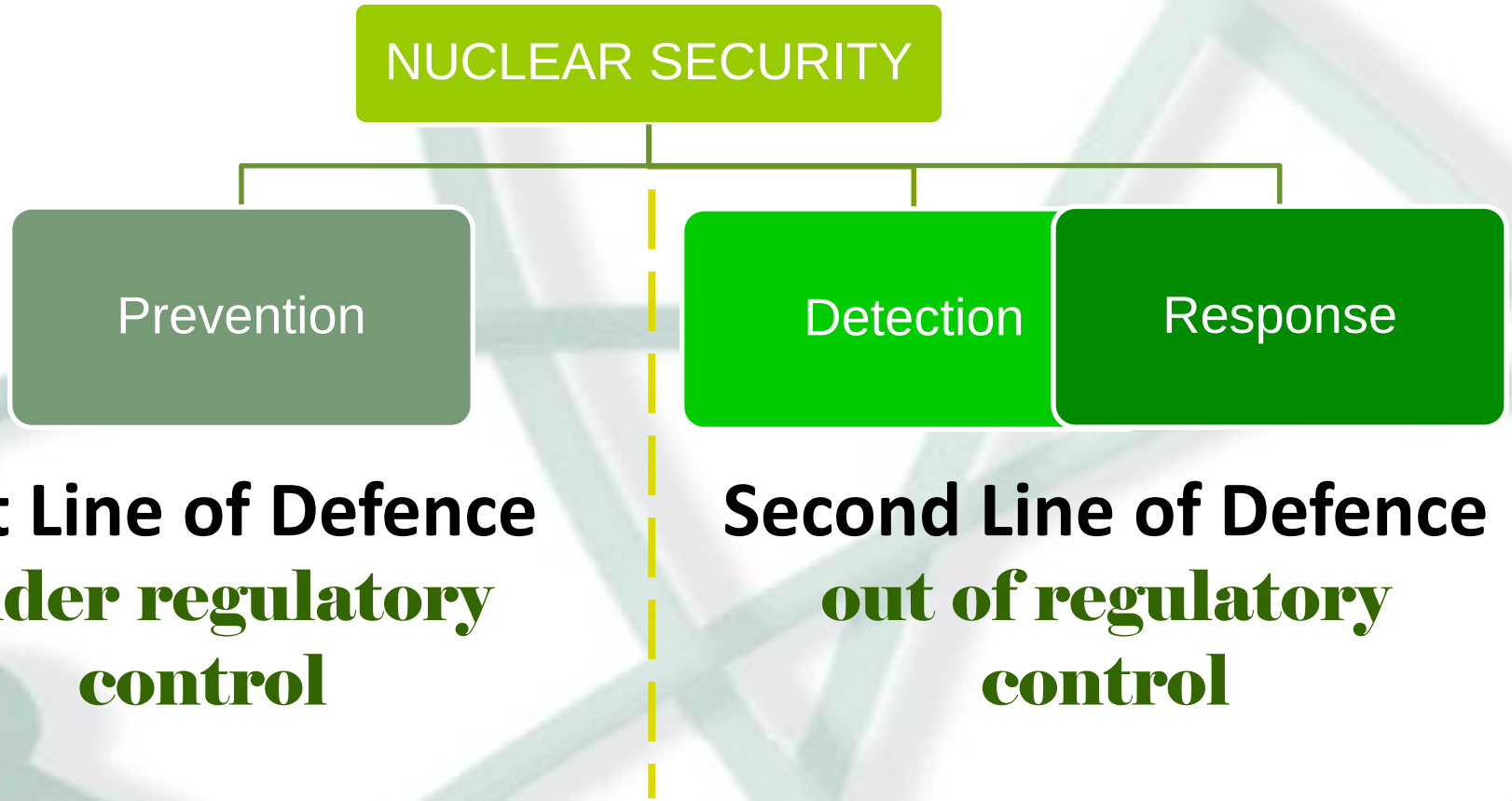
Legal Framework (national level)

- **National Laws**
  - Law on Nuclear Energy
  - Law on Nuclear Safety
  - Law on Radiation Protection
  - Law on the Management of Radioactive Waste.
- **Resolution of the Government of the Republic of Lithuania**
  - The Rules on Management of Orphan Sources, Nuclear Fuel Cycle Materials, Nuclear and Fissile Materials and Contaminated Objects
  - Regulations of Physical Protection of Ignalina NPP, February 26, 2002 (CLASSIFIED)

    Draft of the new version: The Organization of Physical Protection of Nuclear Facilities, Nuclear Facility Construction Sites and Nuclear Materials (NOT CLASSIFIED)
  - Development and Maintenance of the Design Basis Threat

Definition of Nuclear Security

The prevention of, detection of, and response to, criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities, or associated activities

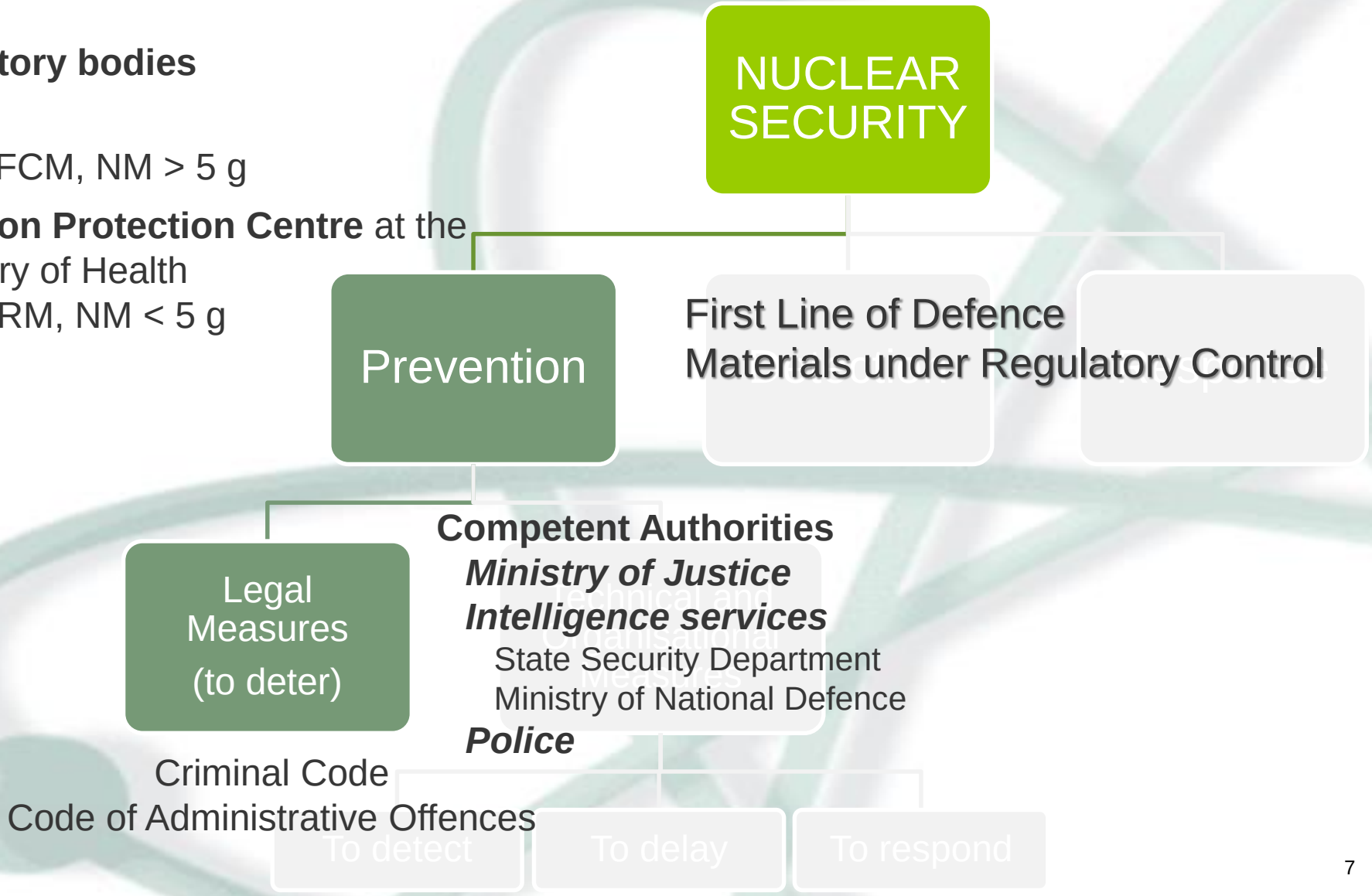


Nuclear Security Infrastructure

Regulatory bodies

VATESI
NF, NFCM, NM > 5 g

Radiation Protection Centre at the Ministry of Health
other RM, NM < 5 g



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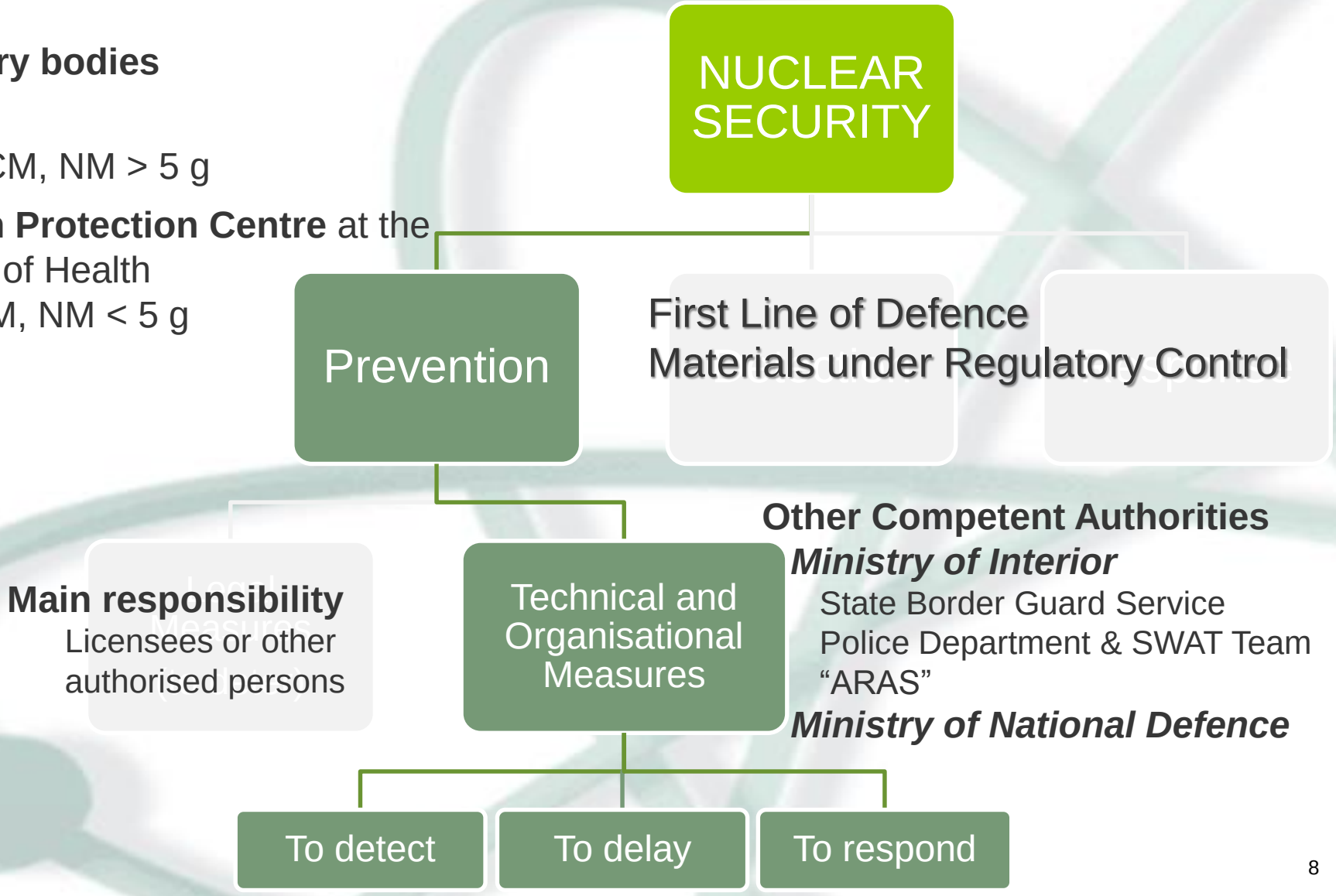

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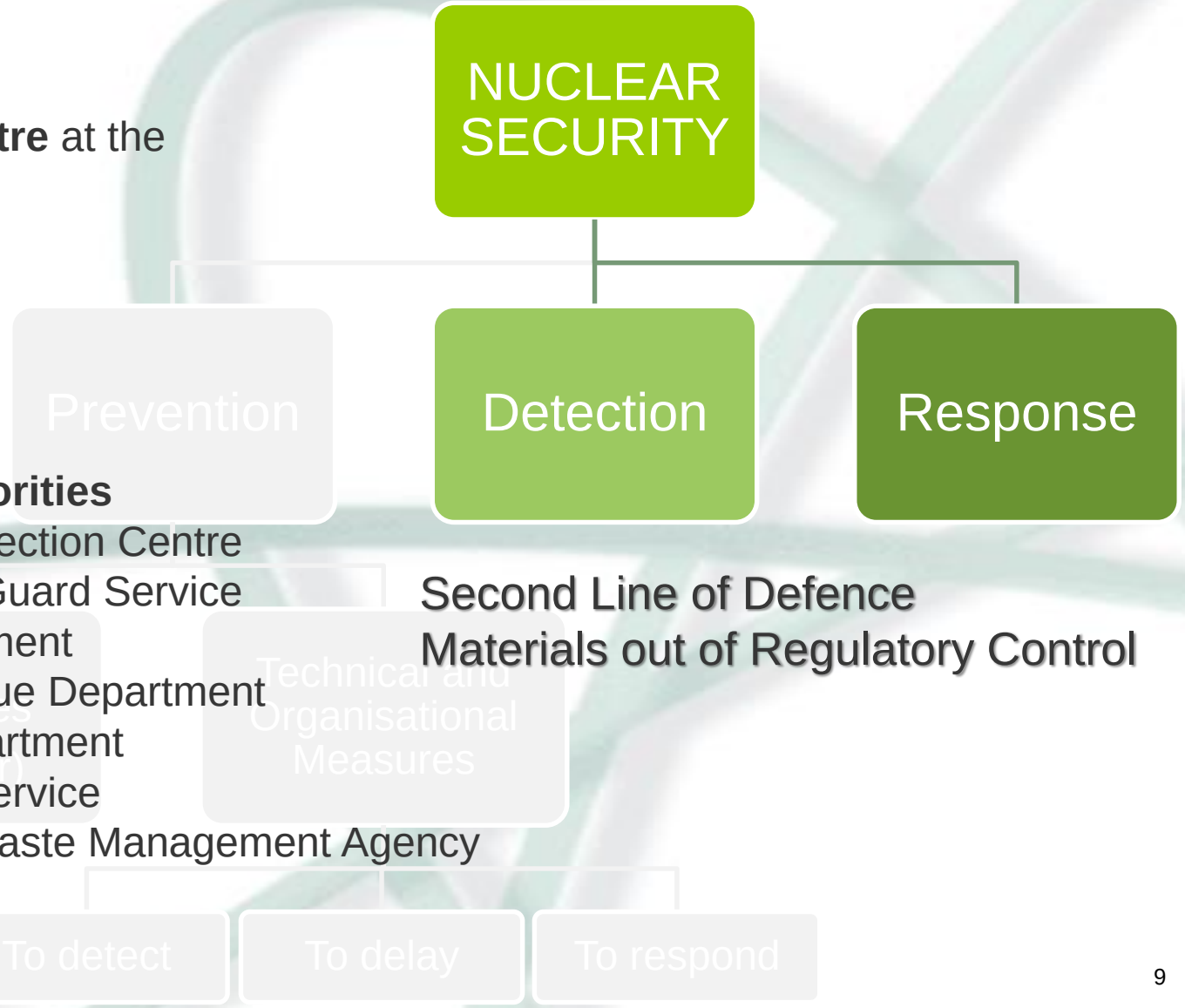


Competent Authorities
Radiation Protection Centre
State Border Guard Service
Police Department
Fire and Rescue Department
Customs Department
Prosecution Service
Radioactive Waste Management Agency

Coordination Mechanism Among Competent Authorities

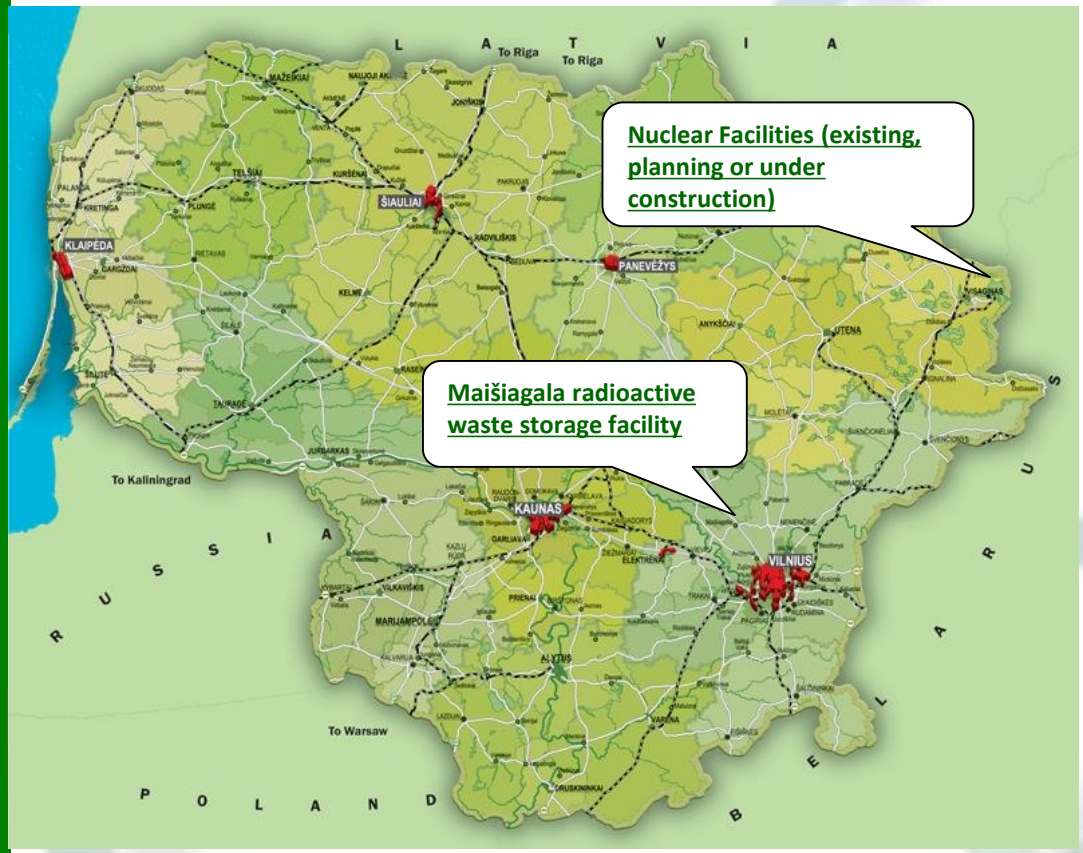
- **On 12 March 2012, Lithuanian Government took the decisions to reinforce efforts and further strengthen national capabilities to combat nuclear smuggling**
  - Nuclear Security Centre of Excellence (NSCOE) at the State Border Guard Service was established
- **On 16 April 2012, The <u>Interagency Working Group on the Combating nuclear smuggling</u> was established by Prime Minister's Decree**
  - Fixed term working group (2 years)
  - The mandate of Interagency Working Group
    - To review and analyze Legal acts, and provide suggestions for the amendments if necessary
    - To provide recommendations on interagency cooperation enhancement
    - To advise NSCOE on the prioritized operational areas

Coordination Mechanism Among Competent Authorities

- **Following the success of previous working group, on 1 September 2014, the Interagency Working Group on Nuclear Security was established by Prime Minister's Decree**
- **The working group (permanent) was renewed on 15 November 2016 with the new mandate to**
  - Provide the proposals to Prime Minister
    - Improvements of actions of State institutions in response to Nuclear Security event
    - Improvements of actions of State institutions in response to Nuclear and Radiological accidents or incidents
    - Improvements of Legal acts on combating the illicit trafficking of nuclear and other radioactive material and other illegal turnover in Lithuania
    - Improvements of cooperation among national competent authorities
    - Implementation of Joint Action Plan between USA and Lithuanian Government on the combating illicit trafficking of the nuclear and other radioactive materials
  - Coordinate information exchange and co-operation with foreign partners
  - Contribute to the development of the trainings and exercises at NSCOE

Regulation of Materials under Regulatory Control (Prevention)

Nuclear Facilities in Lithuania



- **Existing Nuclear Facilities:**

Ignalina Nuclear Power Plant - 2 RBMK-1500 units (put into operation in 1983 and 1987 respectively, final shutdown in 2004 and 2009 in accordance with in compliance with the protocol of Lithuania's EU accession)

Spent Nuclear Fuel Storage Facility (1999)

New Spent Nuclear Fuel Storage Facility (2016)

Cemented radioactive waste storage facility

Maišiagala radioactive waste storage facility

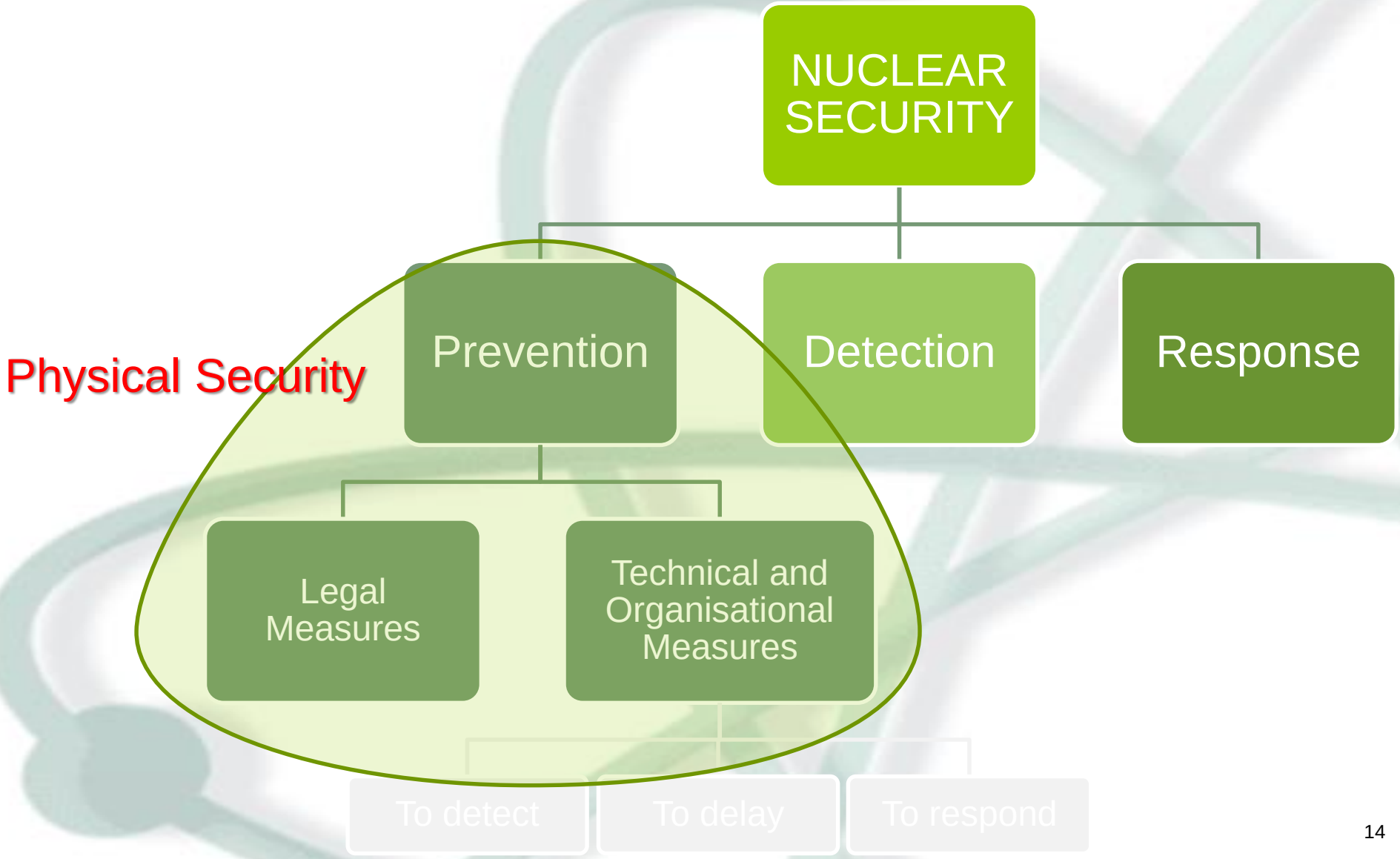
- **Nuclear Facilities (planning or under construction):**

Solid radioactive waste treatment and storage facilities (project B3/4)

Storage facility and a repository for very low activity radioactive waste (project B19)

Near surface repository for low and intermediate activity radioactive waste (project B25)

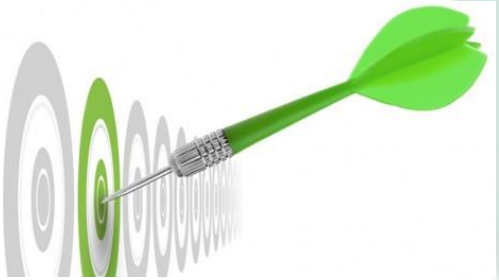
Physical Security and Nuclear Security



Regulation of Nuclear Materials Under Regulatory Control

Physical Security Regulatory approaches

Performance-based method



Prescriptive method

Combined

(performance & prescriptive based)

- **VATESI requirements and rules**
  - Requirements for Physical Security of Nuclear Facilities, Nuclear and Nuclear Fuel Cycle Materials
  - Physical Security of Sources of Ionising Radiation used in Activities in the Area of Nuclear Energy involving Sources of Ionising Radiation
  - The Rules for Preparing Nuclear Security Plan

Key points of Physical Security of Nuclear Materials and Nuclear Facilities

Design Basis Threat

Design Basis Threat should be defined for

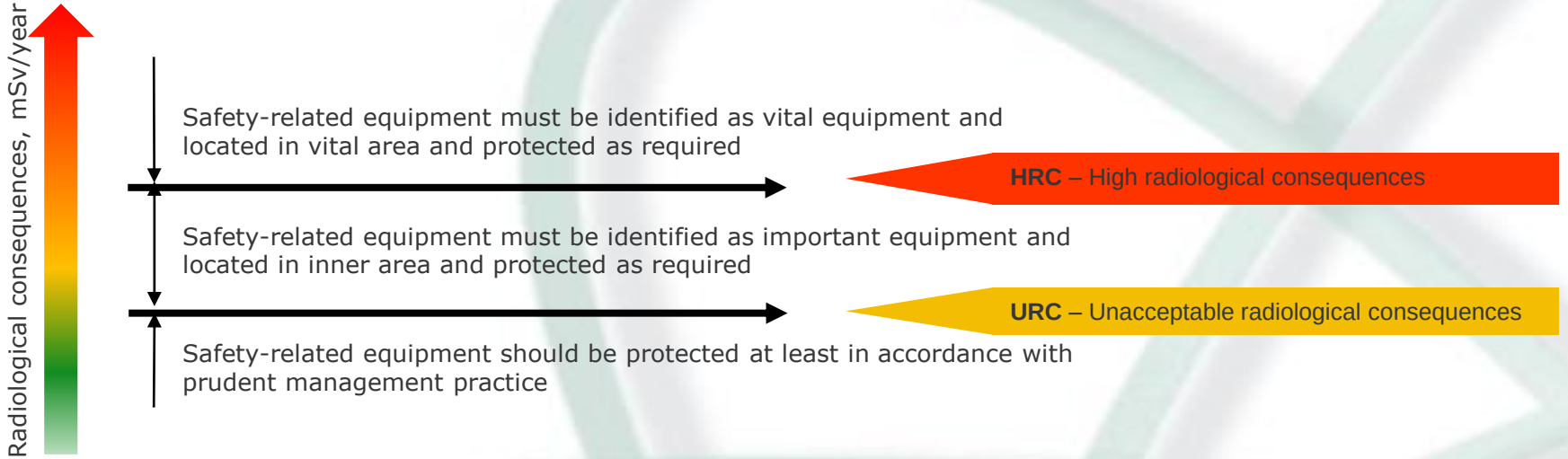
- All nuclear facilities (nuclear power plant, nuclear fuel storage facility, waste storage facility and etc.)
- All nuclear materials in use, storage and transport if it is more than 5 g

Categorization of Nuclear Materials

Materials	State	Category		
		I	II	III
Plutonium [a]	Not exposed to radiation [b]	2 kg and more	Less than 2 kg but more than 500 g	500 g or less but more than 15 g
Uranium-235	Not exposed to radiation [b] Uranium with isotope concentration 235U 20% or more	5 kg or more	Less than 5 kg but more than 1 kg	1 kg or less but more than 15 g
	Uranium with isotope concentration 235U from 10 % to 20 %		10 kg or more	Less than 10 kg but more than 1 kg
	Uranium with isotope concentration 235U exceeds natural uranium but less than 10 %			10 kg or more
Uranium-233	Not exposed to radiation [b]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less but more than 15 g
Spent nuclear fuel		The category determined depending on the category, according to the quantity of fissile isotopes, has been attributed to nuclear fuel before irradiation, but not less as III category.		

Key points of Physical Security of Nuclear Materials and Nuclear Facilities

- **Identification of important and vital equipment at Nuclear Facility**



- **Design and implementation of the Physical Security System**
  - **Main principals:**
    - **Graded approach** (physical security of nuclear material or safety-related equipment depends on its category)
    - **Defence-in-depth** (combination of multiple layers of systems and measures)
  - **Main functions of the Physical Protection Measures**
    - **Detection, Delay, Response**
- **Evaluation of effectiveness of the Physical Security System**

Thank you for your attention!

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