



REPUBLIC OF CROATIA
STATE OFFICE FOR RADIOLOGICAL AND NUCLEAR SAFETY



CHANGES IN CROATIAN LEGAL AND REGULATORY FRAMEWORK FOR PHYSICAL PROTECTION

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CROATIA

International Conference on Physical Protection of Nuclear Material and Nuclear
Facilities, 13-17 November 2017, Vienna

Nuclear material and RS in Croatia



- currently there are no nuclear facilities or installations in Croatia and there are no nuclear fuel transaction contracts in Croatia
- no special fissile materials or enriched uranium on the territory of Croatia
- small quantities of nuclear materials are used for shielding devices in medical and industrial applications
- temporally stored around 900kg of natural uranium, 56kg of thorium and 950kg of depleted uranium



Nuclear material and RS in Croatia



Field	Isotop	Usage
Medicine	Ir - 192	Brachytherapy
	Cs-137	Brachytherapy, Calibration, Blood irradiation
	Co-57	Calibration
	Sr-90	Ocular applicator
Industry	Ir - 192	Ind. radiography
	Co-60	Irradiator
	Am-241	Calibration, Level meters
	Am-241/Be	Well logging
	Cs-137	Density
	Ra-226	Calibration
	Kr-85	Determination of thickness
Se-75	Ind. radiography	

- ionizing radiation sources are used mainly in medicine, industry and scientific research
- no manufacturers in Croatia, all sources are being imported

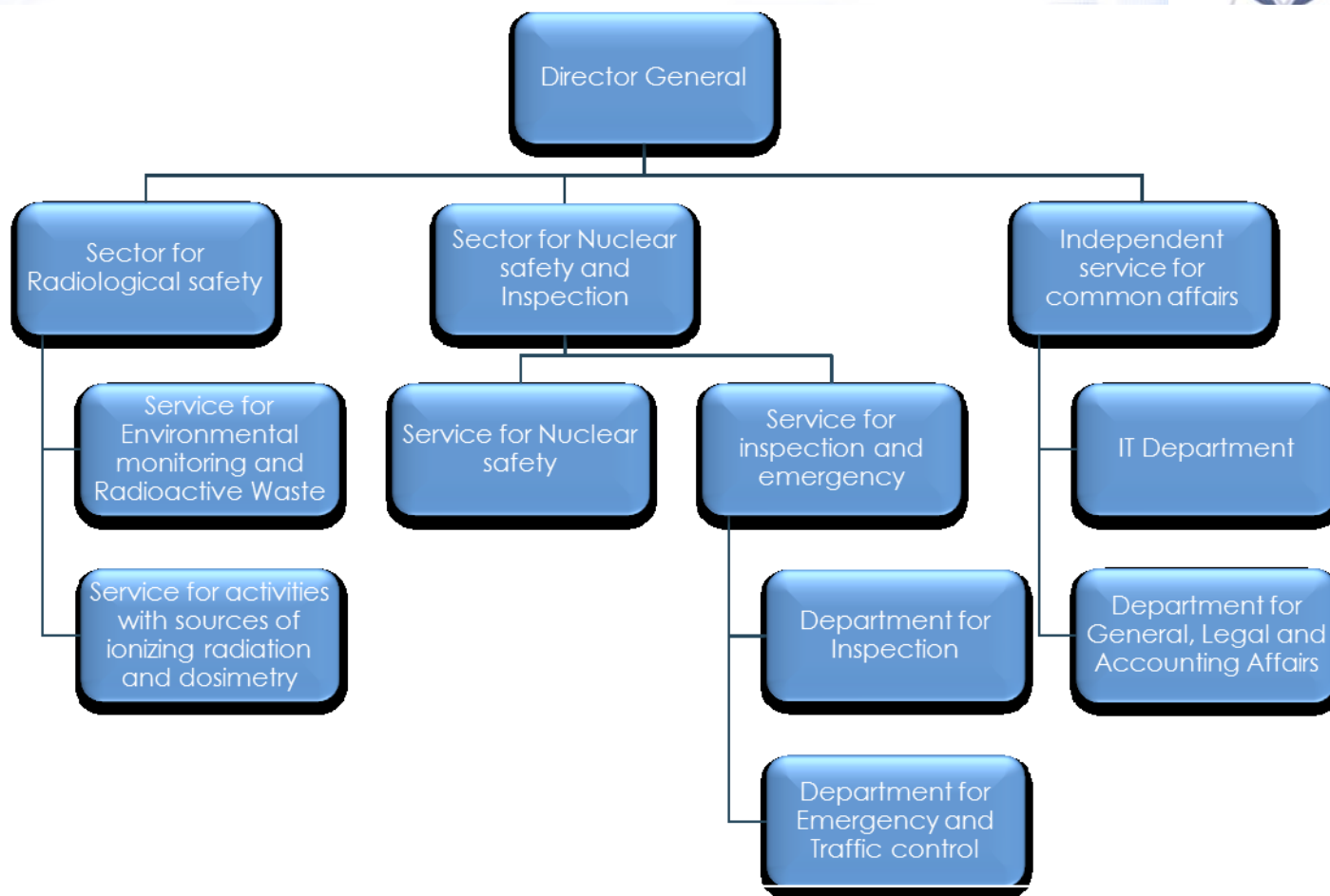
Field	Isotop	Usage
Science	Cs-137	Calibration
	Cf-252	Determination of hydrogen
	Co-60	Calibration
	Co-57	Mossbauer spectrometry
	Ra-226	Calibration
	Cm-244	Calibration
	Ni-63	Gas chromatography
	Sr-90	Calibration
Th-232	Calibration	
Others	Eu-152/154	Radioactive lightning rods
	Co-60	Radioactive lightning rods

State Office for Radiological and Nuclear Safety (SORNS)



- SORNS is founded by the Act on Radiological and Nuclear Safety (Act) as an independent regulatory authority responsible for the activities related to the radiological and nuclear safety and security and for the cooperation with the IAEA and other relevant international institutions
- the competent authority for all activities pertaining to physical protection of nuclear and radioactive material
- reports directly to the Croatian Government and the director of SONRS is appointed by the Government

The organizational scheme of SORNS



Act on Radiological and Nuclear Safety (OG 141/13, 39/15)



- principles, national framework, funding
- establishes measures for safety and protection against ionizing radiation and measures for physical protection in performing nuclear activities and practices involving sources of ionizing radiation
- The Ordinance on the Physical Security of Radioactive Sources, Nuclear Material and Nuclear Facilities

The Ordinance on the Physical Security



- The Ordinance on the Physical Security of Radioactive Sources, Nuclear Material and Nuclear Facilities was developed in 2012
- In the current Act, the physical protection of radioactive and nuclear material is regulated only by one article that says:
 - the holder of the approval for performance of operations shall be liable for the implementation of physical protection of ionizing radiation sources and nuclear installations and shall bear the costs of its implementation and
 - the manner of implementation of the physical protection shall be prescribed in an ordinance issued by the director of the Office in cooperation with the minister in charge of internal affairs

Current situation - gaps



- the current licensing process requires from the Operator to create the Security plan that is not based on the threat assessment and DBT
- the current regulatory framework requires minimal involvement of law enforcement and intelligence services throughout the process
- mode of protection planning is not fully aligned with international standards and is not adapted to new forms of threat
- there is no high-quality communication between each other and the designed coordination of body and service work
- no data exchange
- there is no planning and implementation of common measures and activities

The purpose of the proposed changes



- the improvement of the national legislative, regulatory organizational framework
- alignment of the existing working method with internationally accepted instruments and standards
- improvement of the physical protection of radioactive substances and nuclear materials
- reducing risk and mitigating the consequences of theft, loss, sabotage, unauthorized access, damage, unauthorized transfer or other malicious acts involving or directed against nuclear material, radioactive substances or related facilities, activities and special equipment

Proposed amendments



- adequate basis in the Act:
- the type and scope of nuclear security measures shall be determined in the nuclear security plan on the basis of design basis threat, classification of nuclear and radioactive materials as targets for unauthorised removal or sabotage and the possible effects and consequences of abuses, taking into account risk informed approach such as graded approach and defense in depth
- the cyber security plan is integral part of nuclear security plan as well as contingency plan, which is implemented when a facility or transport is under attack

Proposed amendments



- the threat assessment - drawn up by state administration bodies competent for defense, internal affairs and national security based on security-relevant data, information obtained from law enforcement authorities and publicly available sources
- the threat assessment is a confidential document
- in certain facilities or areas or at certain practices - only persons with no security impediments
- security impediments will be determined by security screening performed in line with the Act on security screening

DBT



- to provide the basis for a nuclear security plan
- without proper communication and coordination between law enforcement and intelligence services on one side and SORNS on the other
- SORNS has taken the initiative
- National Workshop on DBT in May 2017
- a good response from operatives from all the invited institutions
- the resistance of decision-makers in these institutions when it comes to the exchange of sensitive data
- threat assessment and DBT from available open source information

Conclusion



- with the proposed changes, SORNS significantly changes the regulatory requirements related to the physical protection of radioactive and nuclear material but introduces measures that necessarily include other institutions in the process itself
- with adequate support from other institutions, which by these changes becomes their legal obligation, Croatia will have sufficient legal instruments to deal with the physical protection of radioactive and nuclear material



Thank you.