Radiation protection, safety and security infrastructure in Albania

Rustem PACI
1. Promulgation of radiation protection laws and adoption of relevant regulations

2. Establishment of a national Regulatory Authority

3. RPC and RPO profile

4. Authorizations, inspection and enforcement
Content of Presentation

5-Control of Occupational Radiation Exposures
6-Control of Public Exposures
7-Medical exposure control
8-Transport safety
9.National plan for preparedness and response radiological emergencies
“to provide for the safe and secure use of radiation sources and to protect people and the environment against potential harmful effects, simultaneously ensuring to community the maximum benefit from use of radiation sources”
1. Promulgation of radiation protection law & regulations

1972 First law
1992 Proposal and recommendations
1995 New framework Law No 8025
1996 July Established Radiation Protection Office
2008 Amendments to the Law 9973
2002 Decision of council of ministers on
Control of import export of radioactive material
2004 Review of Control of Import export procedures based to Code of Conduct
1. Promulgation of radiation protection law & regulations

1997 Safe handling of Radiation Sources

1997 Licensing and Inspection

1998 New form of Application for Notification and Authorizations
2000/2005/2008 Reviewed
1. Promulgation of radiation protection law & regulations

2004 Safe transport of radioactive material
Nr 3918 date 3/11/2004
2004/2008 Radioactive Waste management
Nr 3918 date 3/11/2004
2004 Code of Conduct on Safety and Security of Radioactive Sources
IAEA No 1388 14/04/2004
1. Promulgation of radiation protection law & regulations

2006 Categorization of Radioactive sources

2007 Guidance on Import export Of radioactive sources cat 1 and 2

2008 Decision of CoM on Import export No158 13/02/2008
1. Promulgation of radiation protection law & regulations

2007 Reg on Medical exposure control 2269/1
2007 Reg on Public exposure control 2269/3
2007 Reg on occupational exposure control 2269/2
2008 Reg on Physical Protection 2518
2008 Decision of CoM on Import export 158
2007 Lists of exclusions 2269/4
2007 List of limits 2269/5
1. Promulgation of radiation protection law & regulations

2001/2004 Code of Practice in Radiology
No804/1 date 15/03/2005

2001/2005 Code of Practice in Nuclear Medicine
No804/1 date 15/03/2005

2001/2004 Code of Practice in Radiotherapy

Order of Minister of Health on reconstruction and Licensing No 78 & 79 27/03/2002
1. Promulgation of radiation protection law & regulations

2001/2005 Checklist in Radiology
2001/2005 Checklist in Nuclear medicine
2001/2005 Checklist in Radiotherapy
2001/2005 Checklist for sealed sources
Approved April 2005
1. Promulgation of radiation protection law & regulations

2001 Layout and shielding of x ray room area
National Safety Standard (Acceptance Tests)
2. Establishment of a National Regulatory Authority

Radiation Protection Commission
(Regulatory Body)
Radiation Protection Office
(Executive Body)
Structure
-Prepare regulations, guides and codes of practices for radiation protection and nuclear safety, which are obligatory for enforcement by all legal and physical persons.
-Oversees the enforcement of the provisions related with radiation protection.
-Issues the licences for all subjects which perform activities foreseen in article 3 of this law. (in amending process)
-Performs technical management of all national and local authorities for immediate enforcement of necessary manners for the mitigation of nuclear accidents effects

-Makes the recommendations and proposals for the improvement of the forced radiation protection legislation
Radiation Protection Commission

- Approves the Basic Safety Standards for radiation protection
- Co-operates with national and international organisations for radiation protection issues
- Performs the commitment of research institutions of the country for solving of national issues in radiation protection area
- Defines the structure of the Radiation Protection Office
- Performs nomination and dismissing of the Chairman of RPO
- Co-operates with State Labour Inspectorate
Represent in RPC for approval the legal acts for radiation protection activities
Oversees the enforcement of legal acts in radiation protection practical area
Performs the inspection of radiation installations
Collect information and performs necessary analysis and measurements for radiation protection control
Prepare the files for giving, suspension and abolition of licences and represents them to the RPC for approval
Prepare the materials of Commission meetings as well as the commended reports
Keep national inventory of sources
RPC consist to 7 non permanent members selected by CoM different Organizations (Independence)
Chairman of RPC is Minister of Health (His role just a vote)
Secretary of RPC is and Chairman of RPO
RPO 5 members in January 2009
3 offices
Equipped through projects
with X-Ray test device, Dose rate meters, Multichannel analyzer, Field spec, Dosimeter different types, Phantomes Etc
3-RPC and RPO profile

Staff trained in Albania and Abroad

To be expanded with new legislations

There is no independence to the budget
Coordination

- Memorandum of Understanding with Mother Theresa Hospital concerning Medical Surveillance
- Memorandum of Understanding with INP for expertise, Personal Dosimetry, Waste management, calibrations and environmental control
- Memorandum of Understanding with Custom and State Police
IAEA Conventions
  Physical Protection of Nuclear Materials
  Early Notification of a Nuclear Accident
  Assistance in the Case of a Nuclear Accident
  Agreement on IAEA privilege and immunities
Comprehensive Nuclear Test Ban Treaty
Additional Protocol to Safeguard Agreements between IAEA and Albania
GOA Upgrading Security of radioactive sources and orphans
sources study
4. Authorizations, inspection and enforcement

181 Licenses (Every 2 years)
Jan 2009

Import permits
Export permits
Transport Permits
Inventory of the ionizing radiation sources

- RPO is in charge for Inventory
- RPC is using RAIS.
- Accelerator in science 1
- X-ray machine for checking of cargo
- X-ray machine in dental practices more
Inventory of the ionizing radiation sources

- Around 200 X-ray machine in radiology

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Inventory of the ionizing radiation sources

- Coronarography system
- CT
- Nuclear Medicine Centers
- Tc-99m, I-125, I-131
- Wide use of radiation sources in Industry, medicine, research and educations
Inventory of the ionizing radiation sources

- Oncology center
- Teletherapy
- Brakitherapy system
- X-ray machine for treating skin cancer
- Research Center INP
- Irradiator
- (x-ray machine + source ) in Industrial Radiography
Distribution of x rays generators and workers
4. Authorizations, inspection and enforcement

- 2000 was established system of Licensing and Inspection
- Inspection is performed every year to each users
- Up to now are Licensed about 181 Legal Users
- Additional inspections to scrap yards

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Duties and responsibilities of the inspector (legal and technical).

• Pre-inspection preparation. Who to contact.

User Role. Entrance and exit briefings.

• Conduct of the inspection focusing on the main elements for each type of licence. e.g. Radiology, Nuclear Medicine, Radithotherapy etc.

• Reviewing, verifying, interviewing key personnel, discuss, explain, give guidance, invite question. Preparation and approval of the inspection report.

• Formal written feedback to the licensee. Directions to take corrective actions within a specified time-frame.
Enforcement

• Article 10 Law No 8025
• There are clear procedures to enforce regulatory requirements
• Clear enforcement action based on the nature of non compliance and implications for safety, instructions, sanctions, fines, suspensions
• No cooperation with other national Bodies
5-Control of Occupational Exposures

Individual monitoring
Number of Workers around 600
Number of monitored workers 370
Types of dosimeters TLD-100
The calibration is made by INP, (SSDL in process of accreditation)
INP provides individual monitoring
Workplace monitoring:
By users
5-Control of Occupational Exposures

Dosimetry service is available to the INP but could not perform direct and indirect measurements for dose intake.
-Independently established by INP structure

-There are no many studies and system to control exposure from natural sources radiation

-INP is in charge to keep the central dose records
6-Control of Public Exposures

- Control of waste discharges
- Control of Environmental Radiation Levels.
  Geophysical Center have prepared the Albanian Map of natural gamma dose rate.
  INP telemetric system for online measurements in 5 stations
- Control of Foodstuffs and selected Commodities
  In Tirana and Durres is performed by INP
- Control of Exposure to Radon
  INP and Geophysical Centre.
  RPC has approved norms Nr 804/1 Date 15/03/2005
6- Control of Public Exposures

Public Dose limits 1 mSv/year

The legal person shall ensure:

- Optimization, Security
- and safety, trained personnel,
- monitoring equipment
- and take into account:
- contribution from different sources,
- control of discharges.
6-Control of Public Exposures

- New program for radiation monitoring in water, air, food etc.
- New facility for radioactive waste management
- Contract with INP or producer for spent sources
- Project Study on the orphan radioactive sources supported USA
Staff Protection

• Duties and responsibilities of licensee to ensure proper control of the radiation environment.

• Assessment of work place conditions, evaluation of occupational exposures (RPO INP)?

• The characteristics, functions and uses of personal monitoring and protective devices.

• Potential risks associated with diagnostic and Interventional radiology procedures.
• Regulations on Design of a diagnostic and interventional radiology facility?

• An overview of the methods and techniques used to determine adequate shielding for staff and persons in adjacent area, based on the principles of radiation protection?

• Aspects of dose constraints related to the future increase of patient workload and the probability that other x-ray equipment could be installed?
1. Patient Protection

2. Quality Management
Patient Protection

Risk perception, assessment and evaluation of diagnostic and interventional procedures?

• Precaution and measures used to protect the pregnant or potentially pregnant patient?

• An overview of the methods and techniques that should be adopted to reduce patient dose?

• The establishment of Guidance Levels?

• Optimization and justification to applicable practice?

• Procedural aspects for communicating and reporting incident and accidents?

• The quality of Equipment
The role and responsibilities of management, staff and other professionals involved in the implementation of a quality assurance program?

Assessment of internal and external quality audits, regular updating, methods of evaluation, reporting and recommendations.

Clear and implemented fully for RPO.
8-Transport safety

2004 Safe transport of radioactive material Nr 3918 date 3/11/2004

- Cooperation at National level
- Article 2 gives A1 and A2 of basic radionuclides values (IAEA TS-R-1,1996) for each radionuclide
- The Competent Authority for Safety and security transport of radioactive material is the Radiation Protection Commission
9-Emergency preparedness

1. 1999 Approve the emergency plan
2. Exercise Sep 2002/April 2003
4. No 3918 Date 3/11/2004
5. Good coordination's
6. from different ministries
Every user has to perform local emergency plan
Nation Center of Emergency, MLAD is appointed as contact point.
Emergency Plan is in compliance with national plan of Emergencies
Detailed plan and tested
RPC responsible for public informations
Training

- National courses
Training

- 2001 INP National Center for Albanian workers of ionizing radiation
- Participation at IAEA courses, fellowships and scientific visits.
Strength

- System of Rad Prot in place
- Reg Body in place effectively independent
- Functioning, Regulations approved by CoM
- Authorization
- Inspection, sanctions
- Etc
SWOT Analysis

Weaknesses
No independent budget
No strong support to RPO
Not enough staff

There are no Reg in Norm and Tenorm and not clear support for Enviromental monitoring

Problems on implementation specially with state users
Opportunities

Increase of staff
Approximate to EU legislations
Training
etc
SWOT Analysis

Threats

Budget