

## Upgrading the Regulatory independence and effectiveness, challenges in process of increasing of radioactive materials and radiation applications in Albania

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### Abstract.

The paper intends to present the evolution and actual situation of radiation protection safety and security infrastructure in Albania, focusing in its establishing and functioning and upgrading the effective independence of Reg Body in accordance with BBS and EU Directives . There are clear descriptions of legal framework of radiation safety and security , the regulatory authority, the services as well the practice of their functioning and challenges in process of increasing of radioactive materials and radiation applications.

### 1. Introduction

The issue of the establishing and functioning of the radiation safety and security infrastructure in Albania was considered as a prerequisite for a good practices development in the peaceful uses of radiation sources. The existence of the adequate legislation and the regulatory authority, functioning based in the Basic Safety Standards (BSS) and GS-R-1 , are the necessary condition providing the fulfilment of the most important issues in the mentioned field.

In 1992 an IAEA RAPAT mission visited Albania and proposed some recommendations for radiation protection improvements. The mission concluded that "the legislation of the radiation protection should be developed". In 1995 Albania was involved in the IAEA Model Project "Upgrading of Radiation Protection Infrastructure". Through that project, which is still in course through different TSA, were established the modern radiation safety infrastructures which take into account all aspects related with radiation safety and security : legislation and regulations, regulatory authority, radiation sources control, occupational , medical and public exposures, emergency response and preparedness etc.

### 2. Radiation Safety Infrastructure

Radiation Protection Act states that the primary responsibility for the good practices related with radiation sources safety belongs to the legal person, who is authorized to conduct this activity.

However it is presumed that the government has the responsibility for the enforcement of the legislation through Regulatory Authority Radiation Protection Commission (RPC) for planning and taking action in different circumstances.

After a long and carefully process and based in the radiation safety standards, Albanian Parliament approved the Radiological Protection Act in 1995. Based in this law, the Radiation Protection Commission (RPC) was established near the Ministry of Health. As executive body of the RPC was established the Radiation Protection Office .At July 2008 the law was amended taking into account security issues. Also with new law the regulations will be approved by Council of Ministers and in framework on increasing the independence of Regulatory Body all members of Commission will be appointed by Council of Ministers

The tasks of the RPC are:

- to prepare regulations (then approved by CoM ), approve guides and codes of practices, which are obligatory for all legal persons, oversee the enforcement of the provisions related with radiation protection,
- to issues the licences,
- to performs technical management of all national and local authorities for immediate enforcement of necessary manners for the mitigation of nuclear accidents effects,
- to makes the recommendations and proposals for the improvement of the radiation protection legislation, approves the Basic Safety Standards for radiation protection,
- to cooperates with national and international organisations for radiation protection issues,
- to performs the commitment of research institutions for solving of national issues in radiation protection area, defines the structure of the Radiation Protection Office,.

The Radiation Protection Office was established as executive branch of the RPC and is performing the following tasks: prepares and present in RPC for approval the legal acts for radiation protection activities, oversees manages 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, prepares the licensing files for giving, suspension of licences and presents them to the RPC for approval.

The first regulations described the rules for the processes of the licensing and inspection. The licensing process is preceded by the notification and continues with the special application in which are described in details all characteristic of the radiation sources, the purposes of the use, radiation protection measures, emergency countermeasures etc. A special information is requires for the radiation protection officer, related with his qualification and working experience. The license is valid only for two years and after that period it is needed to be renovated.

The process of inspection is performed in regular basis and is exerted by the nominated inspectors in accordance with duties foreseen by the legislation. The safety culture is required to implement by inspectors and users, aiming the upgrade of the quality of the control.

Other important regulations were prepared for the “safe handling of the radiation sources” ,” ..licensing and inspection ....”. These regulations describe the most important rules for radiation safety, including the personal dosimetric monitoring, medical surveillance, controlled and supervised areas, radioactive waste management etc.

The preparation of the mentioned regulations was performed in collaboration with experts from the interested Albanian organizations and was consulted with IAEA experts.

With the assistance of IAEA we have prepared and approved three other regulations: the regulations for the “safe transport of radioactive materials” , the regulations for the “radioactive waste management” and “Categorisation of radiation sources”. Also we are working towards implementing of Guidance on Import - Export of radioactive sources. Also are in place the regulations relates the control on occupation, medical and public exposure.

The preparation of the Codes of Practice is another important activity for good practices implementation in the different areas of radiation sources implementation. The Code of Practice in Diagnostic Radiology, Codes of Practice in Radiotherapy and Nuclear Medicine, Code for Construction and Shielding of Radiology Area have already been prepared.

RPO has prepared the check list in radiology, nuclear medicine and radiotherapy.

### 3. Radiation Source Control

The control of radioactive sources is applied in Albania through two processes Notification and Licensing and registrations , based on IAEA recommendations [2a], based on IAEA TECDOC for all the sources, which are of activity higher than the foreseen values from BSS .

The number of licence companies, centres and institutions is 181 at the end of 2008. The control and inspection covered by RPO for about 207 X-ray machines of ionising radiation and in total there are 438 workers under surveillance.

Radiation Source Control includes inventory as well. Now this inventory contains nearly 99% of the radiation sources in the country. All the sources that entered in Albania before 1990 were registered from the Institute of Nuclear Physics in Tirana. After this year, nevertheless the law was still in power; not all the radiation sources coming from abroad were under state control, because of decentralisation of Albanian infrastructure. Practically after 1990 there is a lack of radiation sources inventory. On the other side the radiation sources used for military purposes, being independent, were not included in the inventory of the Institute of Nuclear Physics.

RPO is responsible for the inventory of the radiation sources. Actually we have on the RAIS system all inventory of the sources included licensing and import export permission etc. We are going to work toward implementation an online system with the General Custom Office and INP. We control information through special permission from RPO for import-export of radioactive materials.

The final aspect of Radiation Source Control is connected with radioactive waste management. In Albania, the radioactive waste management consists in segregation of radioactive sources, their conditioning and interim storage. Actually we have a new centre for the managing of radioactive materials which is constructed in compliance with international norms and well equipped.

Albania is implementing the concept of "One stop Shop" so through that applications will come in electronic way for assessment for RPC

#### 4. Security of Radioactive sources

The issue of the establishing and functioning of the security system of radioactive sources in Albania was considered as one of two very important columns in the process of licensing of radioactive sources especially Security Group A and B. The existence of the adequate legislation, regulations, the regulatory authority and functioning is based manly in IAEA TECDOC-1355, which gives the necessary condition for the security of radioactive sources.

The first document on security of radioactive sources in Albania is "Regulations on physical protection of radioactive materials" No 2518 date 20/06/2008 .In the process of application of licensing the security measures are very important aspects to be completed in advance. Radiation Protection Commission was established to supervise all security measures through inspector of the Radiation Protection Office.

#### 5. The Status of Radiation Safety

Based in the five milestone of the Model Project actually thematic safety area in the country exist a modern regulatory framework. The efforts are focused to improve the efficiency of the regulatory authority related with license and inspection control as well the enforcement of the radiation safety legislation by the users.

INP (toady CANP) posses the necessary capability to cover the monitoring of radiation occupational workers of the country and is in permanent process of expansion for the mentioned monitoring in cooperation with Radiation Protection Office.

The medical exposure control is related with different difficulties, which derive from the obsolescence of the X-ray machines park in the country. The efforts in this area are focused to the quality control and quality assurance implementation for different diagnostic and therapeutic procedures.

In cooperation with IAEA is established a "Secondary Standards Dosimetry Laboratory", which will improve the quality of the measurements in the field of the dose evaluation and medical exposures.

The public exposure control developed in the country intends to protect the public and environment by radiation detriment. The radioactive waste management is an important related activity, which is exerted in the country since 1992, when the first quantities of radioactive waste were conditioned in standard drums. For environment control responsibility go to Ministry on Environment, RPC and CANP.

Albanian specialists have prepared the national plan of emergency response, which is approved by the NRPC, and now is in the process of its implementation. A telemetric radiation early monitoring network, based in modern equipment is installed in 5 stations around the country, for on-line measurements of the environmental radioactivity. There are established two emergency teams, the process of personnel training is in course.

Actually we have approved a plan for education of personnel working with ionising radiation. The Training Centre is located in INP, where will be trained workers form different field, in one or two week training course every 5 year.

#### 6. Perspectives on Radiation Safety

In 2006, Albanian Government signed the Stabilisation and Association Agreement with European Commission as a further step toward to be member State of European Union. The recommendations of IAEA ,RASSIA Mission in Albania [4a] (November 2005) and our efforts that Albanian legislation and infrastructure to be in line with *aquis communitaires* of EU, need to be focused in the following issues:

- 1 At the earliest opportunity, existing regulations should be revised and where appropriate, new regulations should be issued to address all activities and practices in Albania.
- 2 The Governmental should take into account all experience of RPC and RPO in process of establishing the Nuclear energy programme
- 3 The CRP should be provided with sufficient resources in terms of the numbers of appropriately qualified staff, adequate facilities and sufficient funds to perform all their regulatory roles and responsibilities.
- 4 A budget should be clearly defined for the regulatory body and agreed annually by the CRP. It should provide adequate funds in accordance with the annual regulatory programme and the wider responsibilities and functions of the ORP.
- 5 The security of radiation sources should be implemented very soon. There is an urgent need to clarify where responsibility lies for this aspect of the regulatory process and effective cooperation and coordination agreements should be made between all agencies involved. For the full implementation of the radiation safety infrastructure in the country and for upgrade of its efficiency needed much more efforts. Albanian Radiation Safety institutions are aware on their long way to have a modern, effective and sustainable radiation safety infrastructure.

We consider that Albania have fulfilled the most important issues in the framework of the Thematic Safety Area and we will continue to implement the international and EU recommendations in the field of Radiation Protection and Safety.

#### 6. References

- [1a] Regulation on “ ... safe Use of Sources of ionising radiations...”
- [2a] IAEA Techdoc series
- [1] INTERNATIONAL ATOMIC ENERGY AGENCY, International BSS for Protection against Ionizing Radiation and for the Safety of Radiation Sources, IAEA, Safety Series No. 115, Vienna, (1996).
- [2] Radiological Protection Act, Albanian Official Journal, No. 233, (1996).
- [3] RASSIA Report for ALBANIA IAEA Document