

Based on Article 4, Paragraph 1 of the Law on Radiation Protection and on Nuclear Safety ("Official Gazette of RS", no. 36/09 and 93/12) and Article 17, paragraph 1 and Article 42, paragraph 1 of the Law on Government ("Official Gazette of RS", No. 55/05, 71/05 - update 101/07, 65/08, 16/11, 68/12 - Constitutional Court, 72/12 and 7/14 – Constitutional Court)

The Government passes

## **REGULATION**

on determining the Programme of Nuclear Safety and Security

### Article 1

This regulation establishes a Programme of nuclear safety and security (hereinafter: the Programme), which is attached with this Regulation and makes its integral part.

### Article 2

The programme referred to in Article 1 of this Regulation defines long-term plans and objectives regarding nuclear activities and system of control and physical protection of nuclear facilities and nuclear materials, in accordance with the standards and principles of international organizations in this field, as well as accepted international commitments .

### Article 3

This Regulation will take effect on the eighth day of its publication in the "Official Gazette of the Republic of Serbia".

05 No. 110-2670/2014-1

In Belgrade, on April 4th 2014.

Government

The President,

Ivica Dacic, m.p

## PROGRAMME OF NUCLEAR SAFETY AND SECURITY

### I. INTRODUCTION

The Programme determines plans and objectives regarding the safety and security of nuclear facilities and nuclear materials, as well as the system of control and physical protection of nuclear facilities and nuclear materials, in accordance with the standards and principles of international organizations in the field of nuclear safety and security, as well as accepted international commitments.

### II. PROGRAMME OBJECTIVES

The objectives to be accomplished related to the safety and security of nuclear facilities and nuclear materials are:

- 1) signing, ratification and implementation of international conventions in the field of nuclear safety and security;
- 2) maintenance of regulatory control over nuclear facilities, materials, and activities in accordance with international standards in this area;
- 3) determining the strategy for decommissioning of nuclear research reactor RA and its implementation;
- 4) determining the strategy of using of nuclear reactor RB and its implementation;
- 5) recovering of the conditions at the location of hydrometallurgical facility Gabrovnica, at Kalna;
- 6) strengthening of professional base in the field of nuclear safety and security;
- 7) providing of public participation and informing of the population.

#### **1. Signing, ratification and implementation of international conventions in the field of nuclear safety and security**

Conducting of preparatory activities provides the conditions for signing, ratification or implementation of Nuclear Safety Convention, Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Amendment on Convention on physical protection of nuclear materials, Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with the Treaty on the non-proliferation of nuclear weapons.

##### 1.1. Nuclear Safety Convention

By signing, ratification and implementation of the Nuclear Safety Convention is achieved:

- 1) achieving and maintaining a high level of nuclear safety by strengthening of individual measures, as well as through the international cooperation, including cooperation at the technical level in the field of safety;

- 2) establishing and maintaining of protective measures in nuclear facilities in order to protect individuals, society and the environment from harmful effects of ionizing radiation originating from nuclear facilities;
- 3) performing measures for preventing accidents with radiological consequences and mitigation consequences of accidents, if they occur.

#### 1.2 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

By signing, ratification and implementation of Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management is achieved:

- 1) achieving and maintaining high levels of safety in the management of spent nuclear fuel and radioactive waste management by strengthening of individual measures, as well as through the international cooperation, including cooperation at the technical level in the field of safety;
- 2) establishing and maintaining of effective protection in all phases of the management of spent nuclear fuel and radioactive waste from potential radiological hazards so that individuals, society and the environment are protected from harmful effects of ionizing radiation, now and in the future, in the way that the needs and goals of the present generation do not threaten the environment and the health of future generations;
- 3) performing measures for preventing accidents with radiological consequences and mitigation consequences of potential accidents, if they occur, in all stages of the management of spent nuclear fuel and radioactive waste.

#### 1.3. Amendment on Convention on physical protection of nuclear materials

By ratification of the Amendment on Convention on physical protection of nuclear materials is achieved:

- 1) performing measures for providing a higher level of security of nuclear facilities and nuclear materials to prevent theft, sabotage and other illegal acts;
- 2) performing measures for providing a higher level of security in the use, storage and transport of nuclear materials;

#### 1.4. Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with the Treaty on the non-proliferation of nuclear weapons

The Republic of Serbia has accepted by succession earlier ratified Agreement between Socialist Federative Republic of Yugoslavia and the International Atomic Energy Agency for the application of safeguards in connection with the Treaty on the non-proliferation of nuclear weapons ("Official Gazette of SFRY", No. 67/73, herein after: SFRY and the IAEA). Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with the Treaty on the non-proliferation of nuclear weapons was signed in 2009 and it must be ratified in order to be applied.

By ratification and implementation of Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with the Treaty on the non-proliferation of nuclear weapons is achieved strengthening and extension of the control system with additional measures to ensure more complete verification regarding implementation of the regime of non-proliferation of nuclear weapons.

## **2. Maintenance of regulatory control over the nuclear facilities, materials and activities according to international standards in this area**

In order to strengthen the control over the nuclear facilities and nuclear materials in the Republic of Serbia a central register of nuclear facilities and nuclear materials will be formed.

Keeping record of nuclear facilities and nuclear materials is carried out in accordance with the Agreement between SFRY and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons and Law on Radiation Protection and on Nuclear Safety.

## **3. Determining the strategy for decommissioning of research nuclear reactor RA and its implementation**

Research nuclear reactor RA ceased to operate in 1984. A decision should be made about the future purpose of the building of research reactor RA, determine the strategy of decommissioning and make the cost assessment for decommissioning. This decision is made by the Government of the Republic of Serbia after the analysis performed by a Public company established for managing of nuclear facilities in Serbia.

It is possible to recover the condition of some parts of the reactor RA, such as VR pools for the disposal of liquid waste, pools and dry pool for disposal of spent fuel in room 141 in the building of reactor RA and hot cells of the reactor RA. Activities on these facilities are provided for in projects funded by the European Commission.

## **4. Determining the strategy for using of research nuclear reactor RB**

The main purpose of the research nuclear reactor RB is to be used for research purposes and for education of human resources in the field of nuclear physics and engineering. It is necessary to make a decision about future directions and goals of development and research in this area, define ways to use reactor RB, the need to modernize the system, required staff and necessary financial resources.

## **5. Recovery of the location of hydrometallurgical Facility Gabrovnica, near Kalna**

All the activities on the location of hydrometallurgical facility Gabrovnica, near Kalna, were interrupted in the middle of the sixties of the 20th century. It is necessary to perform the required analysis of the location and make a decision on the future use of this area, so the recovering of the location could begin, the decision on how to remove equipment and materials that are still out there and develop a plan for rehabilitation of the location.

## **6. Strengthening of professional base in the field of nuclear safety and security**

In cooperation with universities, research institutes and the Ministry responsible for Education and Science will be developed and implemented professional programmes of specialization in the field of nuclear safety and security with the aim of increasing the number of highly qualified personnel, and increasing human resources base necessary for the implementation of planned activities in the field of nuclear safety and security.

## **7. Providing participation of the public and informing of population**

The plan for informing the population will be made and conducted in cooperation with the Ministries responsible for Education, Science and Environmental protection, about the topics in the field of ionizing radiation and nuclear safety. Serbian Radiation Protection and Nuclear Safety Agency (hereinafter: the Agency) and licensee for performing of nuclear activities at nuclear facilities are required to ensure public participation in all decisions concerning nuclear activities, which are related to the impact of these activities on the environment.

### III. PLANNED ACTIVITIES

To achieve stated objectives the following activities will be carried out :

- 1) signing, ratification and implementation of international conventions in the field of nuclear safety and security;
- 2) maintaining of regulatory control over nuclear facilities, materials, and activities according to international standards in this area;
- 3) determining the strategy for decommissioning of research reactor RA;
- 4) determining the strategy for using of research reactor RB;
- 5) recovering conditions at the location of hydrometallurgical plant Gabrovnica, at Kalna;
- 6) strengthening the professional base in the field of nuclear safety and security;
- 7) providing participation of the public and informing of the population.

#### **1. Signing, ratification and implementation of international conventions in the field of nuclear safety and security**

In order to provide conditions for signing, ratification and implementation of the Nuclear Safety Convention, Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and ratification of Amendments to the Convention on the Physical Protection of Nuclear Material, the following activities will be undertaken:

- 1) Preparation of the texts of the Conventions and Amendments, conducting internal audits of technical terminology and reaching consensus about the use of technical terms;
- 2) the initiation and implementation of procedures for signing the conventions and amendments.

In order to create conditions for the ratification of the Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons, there will be fulfilled certain prerequisites related to the improvement of the administrative and technical capacity to carry out the procedure for the preparation of basic reports, as well as for implementation of this protocol, which involves the engagement of a number of departments, determining their tasks and establishing systems for their coordination.

For realization of this objective will be carried out following activities:

- 1) the training of personnel for the tasks of making inventory of facilities, equipment and materials subjected to the obligations of the Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons;
- 2) preparation of previous inventory list of facilities, equipment and materials subjected to the obligations of the Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons;

- 3) preparation of the Draft Law on Ratification of the Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons and submitting it to the National Assembly for approval;
- 4) preparation of the text of Initial declaration arising from Additional protocol to Agreement between SFRY and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons, with the list of facilities, equipment, materials and activities that subject to the obligation.

## **2. Maintenance of regulatory control over nuclear facilities, materials and activities according to international standards in this area**

In order to strengthen the control over nuclear facilities and nuclear materials in the Republic of Serbia will be established an electronic database - Registry of nuclear facilities and nuclear materials. Activities undertaken with the aim of establishing a register of nuclear facilities and nuclear materials are:

- 1) fulfilment of the technical requirements for the establishment and maintenance of an electronic database;
- 2) purchase of required software;
- 3) meeting the security requirements for the equipment and data register;
- 4) connect the necessary institutions to the register;
- 5) entering the necessary information into the register.

## **3. Determining the strategy for decommissioning of research reactor RA**

Decommissioning of the research reactor RA will be conducted with the aim to increase nuclear safety and security in the Republic of Serbia. For realization of making a strategy for decommissioning of research reactor RA the following activities will be undertaken:

- 1) preparing the plan for decommissioning, with the analysis of possible options;
- 2) assessment of funds needed for decommissioning;
- 3) determining the strategy for decommissioning;
- 4) determining the time frame for conducting of decommissioning;
- 5) creating necessary documentation for obtaining the license for permanent termination of operation and decommissioning;
- 6) drafting a plan for recovery of certain parts of the reactor RA provided by IPA projects, and that is: VR pools for disposal of liquid waste, pools and dry pool for disposal of spent fuel in room 141 in building of the reactor and hot cells of reactor RA;
- 7) creating necessary documentation for conducting recovery of the condition of specified parts of reactor RA.

## **4. Determining the strategy for using nuclear reactor RB**

In order to determine the strategy of using nuclear reactor RB is necessary to carry out the following activities:

- 1) determining the use of nuclear reactor RB and identifying institutions interested in its use;
- 2) creating a feasibility study on the modernization and improvement of systems important for safety and security of the reactor;
- 3) preparation of an initial plan for decommissioning of the reactor.

## **5. Recovery of the location of hydrometallurgical facility Gabrovnica, near Kalna**

In order to recover the location of hydrometallurgical facility Gabrovnica, near Kalna, it is necessary to make characterization of equipment and materials that are still out there in order to make decisions on how to remove them and develop a plan for recovering of the location.

The decision on the future status of the facility is made by the Government, based on rehabilitation plan which creates a public company established to manage nuclear facilities in Serbia, and approves the Agency.

For these activities are necessary financial funds which will be defined after the results of characterization are known and recovery plan is prepared.

## **6. Strengthening of the professional base in the field of nuclear safety and security**

In order to strengthen the professional base in the field of nuclear safety and security , the following activities will be undertaken:

- 1) preparation of a programme of specialization in the field of nuclear security and safety;
- 2) preparation of a programme of professional practice for students in institutions founded by the Republic of Serbia, and whose activity is associated with nuclear technology;
- 3) equipping the faculties with necessary laboratory equipment and software.

## **7. Providing participation of the public and informing the population**

In order to inform the population on all issues related to nuclear safety which are of interest to the broader community, the following activities will be undertaken:

- 1) preparation of plans and programmes for informing the population;
- 2) preparation of educational materials in the form of brochures, posters and websites.

Agency and the licensee for performing of nuclear activities at the nuclear facilities will ensure public participation in all decisions concerning nuclear activities which are related to the impact of these activities on the environment, by organizing public debates in accordance with the law.

## **IV. CONTROL SYSTEM OF NUCLEAR FACILITIES AND NUCLEAR MATERIALS**

The control system of nuclear facilities and nuclear materials in the Republic of Serbia is conducted by the Agency and the Ministry responsible for nuclear safety and radioactive waste management.

The control system of nuclear facilities and nuclear materials refers to nuclear facilities and nuclear materials in the territory of the Republic of Serbia, and the system is consisting of:

- 1) the measures taken to ensure the safety and security of nuclear facilities and nuclear materials, the measures of protection against damage to nuclear facilities and measures of protection against damage or theft of nuclear materials during all proceedings related to nuclear activities and radiation activities;
- 2) control of procedures and actions by the Agency during performing of nuclear activities by the licensee for performing of nuclear activities;
- 3) control of safety reports and other documents related to the safety and security of nuclear facilities and nuclear materials and control of implementation of these acts by the Agency;
- 4) control of monitoring of radioactivity in nuclear facilities and in the vicinity of nuclear facilities;
- 5) control of records kept by the users of nuclear facilities and nuclear materials in accordance with ratified international treaties.

## **V. SYSTEM OF PHYSICAL PROTECTION OF NUCLEAR FACILITIES AND NUCLEAR MATERIALS**

Security measures and physical protection of nuclear facilities and nuclear materials are applied and implemented by a public company established to manage nuclear facilities and users of nuclear facilities and nuclear materials, based on the Law on Ratification of the Convention on Physical Protection of Nuclear Materials ("Official Gazette of SFRY" - International Treaties, No. 9 / 85), and the laws and bylaws that regulate this matter.

Public company established to manage nuclear facilities in the Republic of Serbia and users of nuclear facilities and nuclear materials, for efficient application of the system of physical protection of nuclear facilities and nuclear materials, implement the following physical protection measures:

- 1) protection against theft of nuclear material in all proceedings related to nuclear activities and radiation activities and measures to detect and locate missing or stolen nuclear material;
- 2) protection of nuclear material and nuclear facility from sabotage and measures to facilitate and minimize potential radiological consequences of sabotage;
- 3) establishing, implementation, validation and maintenance of an adequate regime of physical protection of nuclear facilities and nuclear materials, in all proceedings related to nuclear activities;
- 4) using the methodology of analysis and risk management to reduce threats and improve the effectiveness and efficiency of the physical protection system and to reduce the potential harmful consequences related to nuclear activities;
- 5) establishing and implementing of quality control systems for the fulfilment of specific conditions and requirements in performing of activities related to physical protection of nuclear materials and nuclear facilities.