ASSESSMENT OF COMPLIANCE OF THE BULGARIAN RADIATION PROTECTION LEGISLATION WITH THE NEW DIRECTIVE 2013/59 / EURATOM

ОЦЕНКА НА СЪОТВЕТСТВИЕТО НА БЪЛГАРСКОТО ЗАКОНОДАТЕЛСТВО ПО РАДИАЦИОННА ЗАЩИТА С НОВАТА ДИРЕКТИВА 2013/59/ЕВРАТОМ

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Abstract: *The report assessed the compliance of the Bulgarian legislation with the international legal framework in the field of radiation safety. The main Bulgarian administrative rules and short content are presented. Similarly, the basic legal instruments operating in interstate relations are similarly presented.*

Keywords: *legislation, administrative rules, nuclear power, NPP, laws, radiation gamma background, directive*

1. Introduction

In the years before Bulgaria's accession to the EU, Bulgarian legislation was transposed in line with European legislation. This does not mean that our legislation was previously at odds with the European one, but there were some differences in standards of our equipment, operational requirements, precautions and classification with European standards. Already with the commissioning of the experimental reactor first and then the reactors at the Kozloduy NPP, we have fully complied with the international requirements of the IAEA and the other nuclear regulators. Bulgaria has been guided by the requirements and requirements of leading international and global organizations in the field of nuclear technology and safety and has complied with its legislation and regulations.

Following the Chernobyl nuclear power plant accident in 1986, the global regulatory framework was renewed and the requirements for safe operation of nuclear facilities increased considerably. In the 1990s, re-writing of the entire regulatory framework in the field of nuclear technology, radiation safety and all sectors and activities related to it was started. There has been a significant increase in requirements for nuclear facility manufacturers in terms of their performance, as well as to the users of these facilities.

The member states of Euratom, an organization created together with the EU's prototype, have also taken steps to improve the safety of the work of the nuclear industry. Over the last decade, all requirements in this sector have been updated in the current Euratom Directives, with some even undergoing several changes.

The legislation in Bulgaria after our accession to the European Union has gradually been aligned with the current legislative documents in the Union and the legal committee to the Parliament, the Council of Ministers and other institutions working in the field monitor the amendments and requirements of EU, Euratom, IAEA and others. changes to the relevant competent bodies the necessary legislative and regulatory changes so that we can not go beyond the requirements. In the last years, our entire regulatory framework in the field of radiation protection has been phased and coherently aligned with the above-mentioned requirements and now it is in line with the main international requirements. At the same time, we comply not only with the European requirements but also with the requirements of the international institutions working in the field of nuclear energy and safety, besides our normative base we also strive to help our partners in this branch of the economy.

2. Laws and regulations regulating the use of nuclear energy

2.1. Legislative acts in Bulgaria

The main normative documents that provide the legal limits in the field of radiation protection are:

1.Anvironmental Protection Act

The law is a framework for other environmental laws. It regulates the basic frameworks for the protection of the environmental components - air, water, soils, landscapes, biodiversity, as well as the procedures for Environmental Analysis (EA) and Environmental Impact Assessment (EIA), permitting regimes, management and financing [1].

The law governs public relations relating to:

• establishment and operation of the National Environmental Monitoring System (NASEM);

• the conservation and use of biodiversity in accordance with the country's natural and geographical characteristics.

2.An Safe Energy Use Act

This Act regulates public relations related to the state regulation of the safe use of nuclear energy and ionizing radiation and the safe management of radioactive waste and spent fuel as well as the rights and obligations of the persons carrying out these activities for the provision of nuclear safety and radiation protection [2].

3. Regulation on Basic Norms for Radiation Protection (Promulgated SG, No. 76 / 05.10.2012)

The subject matter of this Ordinance are the basic requirements and measures for radiation protection in carrying out activities related to the use of nuclear energy and sources of ionizing radiation, as well as activities where the availability of natural sources leads to an increase in the exposure of workers and the population [3].

4. Regulation for construction, operation and development of the National Automated System for Continuous Control of the Radiation Gamma Background in the Republic of Bulgaria (Decree of the Council of Ministers № 434 / 19.11.1997)

The Regulation regulates the establishment, maintenance, operation and development of the National Automated System for Continuous Control of the Radiation Gamma Background in the Republic of Bulgaria [4].

5. Planning and Preparedness Plan for Action in Radiation Accident (Promulgated State Gazette No. 94 / 29.11.2011)

The Ordinance defines the obligations of the executive bodies, the NPP operator and legal entities operating on the territory of the Republic of Bulgaria for planning of actions in the event of a

nuclear accident in the NPP, as well as for the maintenance of emergency preparedness [5].

6. Regulation on the Norms for the Radiation Protection and Safety in the Eradication of the Effects of the Uranium Industry in the Republic of Bulgaria (Ordinance No. 1 / 15.11.1999)

This Ordinance sets out the radiation protection and safety standards applicable to sites and areas affected by the uranium mining and uranium processing industry, where action is being taken to eradicate the consequences, restore and monitor [6].

7. Regulation on ensuring the safety of nuclear power plants, adopted on September 30, 2016. The Regulation defines the basic criteria and rules for nuclear safety and radiation protection of nuclear power plants as well as the organizational measures and technical requirements for ensuring the safety of site selection, design, construction, commissioning and operation of nuclear power plants. The Ordinance regulates the requirements for technical and fire safety, emergency planning and emergency preparedness of the nuclear power plant as far as they derive from the application of the concept of in-depth protection. The Ordinance covers the physical protection of the nuclear power plant only with respect to the interconnection between physical protection measures and safety measures [7].

8. Ordinance on Basic Norms for Radiation Protection. Subject matter of the Ordinance are the basic requirements for radiation protection, criteria and levels of exemption from regulation, measures for radiation protection in carrying out activities for the use of nuclear energy and sources of ionizing radiation. The requirements of the Ordinance refer to activities where the availability of natural sources leads to an increase in the exposure of staff and the population [8].

The requirements of the Ordinance exclude the exposure of people due to:

• cosmic radiation on the Earth's surface;

• the content of potassium - 40 in the human body;

• the content of natural radionuclides in different materials that is not altered by human activity.

The Ordinance aims to:

• Determine the occurrence of deterministic effects;

• Reduce the likelihood of stochastic effects to a level that is considered acceptable under international recommendations.

Bulgarian legislation is in line with existing international law, and in particular with EU, IAEA and other regulating and controlling authorities

2.2. International regulations

1. Euratom Treaty. The European Atomic Energy Community (EAEC or Euratom) is an international organization established to create a common nuclear energy market in Europe, the development of nuclear energy and distribution among member states, and the European Atomic Energy Community. sale of non-members. It is legally distinct from the European Union, but has the same member states and is managed by the EU institutions [9]. Since 2014, Switzerland is an associate member. It was created on 25 March 1957 with the Treaty of Rome, together with the European Economic Community (EEC), and the latest amendments were introduced by the Treaty of Lisbon signed on 13 December 2007 and entered into force on 1 December 2009. The amendments to these Contracts are very rare, given the sensitivity of the participants to the essence of the content and the interpretation of matter. This Treaty defines the strategy for the development of nuclear energy and provides guidance for other normative documents that have been developed and operate in this specific area of the economy.

2. Directive 2006/117 / Euratom of the Council of Europe of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel [10]. It establishes a Community system for the supervision and control of the transboundary movement of radioactive waste and spent fuel in order to ensure adequate protection of the population and applies to the transboundary shipment of radioactive waste or spent fuel. The Directive does not apply to the transboundary shipment of waste containing only natural radioactive materials which are not the result of certain practices. It describes the procedure for the carriage of radioactive waste and spent fuel both within and outside the Community, the authorization regimes, the accompanying documents and the means of escorting and transmitting.

There is a compulsory system within the EU that uses a standard control document.

3. Directive 2011/70 / Euratom of the Council of Europe of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste. It establishes a Community framework to ensure the responsible and safe management of spent fuel and radioactive waste in order to avoid the transfer of undue burdens to future generations and to ensure that Member States take appropriate national measures to achieve a high level of the safety of spent fuel and radioactive waste management in order to protect workers and the general public from the dangers arising from ionizing radiation.

4. Council Directive 96/26 / Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation [11]

5. Directive 2009/71 / Euratom of the Council of Europe of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations. A framework is created to maintain and improve nuclear safety and its regulation in order to enhance the safe exploitation of nuclear facilities. At the same time, it is ensured that Member States will maintain their domestic legislation in line with international law [12].

6. Council Directive 2013/59 / Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionizing radiation and repealing Directives 89/618 / Euratom, 90/641 / Euratom, 96/29 / Euratom, 97/43 / Euratom and 2003/122 / Euratom with effect from 6 February 2018. This Directive shall enter into force from the beginning of 2018. Under normal conditions, doses of ionizing radiation are very low and do not cause clinically detectable harmful effects [13]. However, in the long run, they can lead to health problems, especially cancer. Hence the need for a uniform threshold value of protection throughout the EU, while allowing governments to set higher safety standards if they so wish.

The directive replaces five previous legislative documents that contained contradictions, did not fully reflect scientific progress and did not fully cover natural sources of ionizing radiation or environmental protection. It defines how to ensure the safety and security of radioactive materials and the mandatory information to be provided in the event of an emergency exposure situation.

The standards it contains are based on the recommendations of the International Commission on Radiological Protection (ICRC) [14].

7. Directive 2003/122 / Euratom lays down safety standards for radiation protection. It introduces stricter rules for the handling of "closed radioactive sources". It also harmonises the EU-wide approach [15].

8. Council Decision 2007/513 / Euratom of 10 July 2007 approving the accession of the European Atomic Energy Community to the amended Convention on the Physical Protection of Nuclear Material (KFNMG) [16]. The new Convention on the Physical Protection of Nuclear Material and Nuclear Facilities aims to provide effective physical protection during the use, storage or transport of materials used for peaceful purposes and to prevent and combat crimes related to this material and these facilities. It is based on the CFSP that all EU countries are party to.

Each State Party shall introduce and enforce measures to ensure such effective protection in order to prevent, in particular, the theft or disappearance of nuclear material for which it is responsible and the sabotage of nuclear facilities on its territory . The Euratom treaty has a wider scope as it states that EU countries must prevent any misuse of nuclear material for purposes other than those for which it is intended.

In implementing the Convention, States Parties must respect a number of fundamental principles, in particular the principles of State and license holders' responsibility, a culture of security, security and confidentiality.

States Parties to the Convention must ensure that the nuclear material they import, export or transit through their territory is protected in accordance with the applicable level of safety.

9. Regulation No 236/2014 of the European Parliament and of the Council of 11 March 2014 laying down the general rules and procedures to be used for implementing Union external action funding instruments [17].

It allows for grants to non-EU countries to maintain the highest possible standards of nuclear safety.

10. European system for the registration of carriers of radioactive materials COM (2011) 518.

Carriers are required to register with the Electronic Carrier Registration System (ESCReg). This system provides limited and secure access to the competent authorities of Member States, registered carriers and applicants, subject to the relevant provisions of the Data Protection Directive. If the applicant is established in one or more Member States, the application shall be processed by the competent authority of the Member State in which the applicant's registered office is situated. If the applicant is established in a third country, the application shall be processed by the competent authority of the Member State from which the carrier intends to enter the territory of the EU.

Member States designate a competent authority and a national contact point for the transport of radioactive material [18].

11. Council Directive No 1493/93 / Euratom of 8 June 1993 on the supply of radioactive substances between Member States. It introduces a EU-wide system for declaring supplies of radioactive substances between EU countries [19].

When delivering radioactive material, the "holder" must provide a pre-declaration by the "consignee". This declaration must demonstrate compliance by the recipient with the EU legislation on mandatory reporting of activities related to natural and man-made radioactive substances. This declaration must be submitted to the competent national authority of the country of destination in the EU.

Holders also have to comply with national security regulations for the storage, use and disposal of radioactive activities.

At this stage in the development of Bulgaria it can be stated that our legal framework in the field of the safe use of nuclear energy, the storage and transportation of nuclear materials and wastes fully complies with the world requirements and in this respect we have overtaken a number of countries with more developed nuclear energetics. But this should not reassure us, because the world is developing very dynamically, and we need not to be in a state of satisfaction and just to keep track of the global trends. We need to prove that we have specialists in this field who do not just follow developments, but ask for this development and create new better regulatory documents to lead the world. So we will be a respected partner in the field of radiation protection on a global scale.

3.Conclusions:

1. Well-organized documentary and in compliance with the EU and IAEA requirements for the notification of the population in case of a radiation accident. The legislation in force in Bulgaria follows the provisions of the European legislation and the Euratom regulations.;

2. I have to emphasize that the unit of action in raising the radiation background in the system of the Ministry of Interior is not well positioned and gradually its functions are seized by non-specialists in radiation protection.

4.Literature:

1. Закон за опазване на околната среда;

2. Закон за безопасно използване на ядрената енергия;

3. Наредба за основни норми за радиационна защита (Обн. ДВ, бр.76/05.10.2012 г.);

4. Наредба за изграждане, експлоатация и развитие на Националната автоматизирана система за непрекъснат контрол на радиационния гама-фон в Р България (ПМС № 434/19.11.1997 г.);

5. Наредба за планиране и готовност за действия при радиационна авария (Обн. ДВ, бр. 94/29.11.2011 г.);

6. Наредба за норми за целите на радиационната защита и безопасност при ликвидиране на последствията от урановата промишленост в Р България (Наредба № 1/15.11.1999 г.);

7. Наредба за осигуряване безопасността на ядрените централи приета на 30.09.2016;

8. Наредба за основните норми за радиационна защита, ОНРЗ-2004, ДВ бр. 73, 2004;

9. Договор за Евратом;

10. Директива 2006/117/Евратом на съвета на Европа от 20 ноември 2006 година относно надзор и контрол на превоза на радиоактивни отпадъци и отработено гориво;

11. Директива 96/26/Евратом на Съвета на Европа от 13 май 1996 г. относно постановяване на основните норми на безопасност за защита на здравето на работниците и населението срещу опасностите, произтичащи от йонизиращото лъчение;

12. Директива 2009/71/Евратом на съвета на Европа от 25 юни 2009 година за установяване на общностна рамка за ядрената безопасност на ядрените инсталации;

13. Директива 2013/59/Евратом на съвета от 5 декември 2013 година за определяне на основни норми на безопасност за защита срещу опасностите, произтичащи от излагане на йонизиращо лъчение;

14. Communication from the commission to the council and the european parliament. Communication on nuclear non-proliferation, Brussels, 26.3.2009;

15. Директива 2003/122/Евратом определя стандарти за безопасност за защита срещу радиация;

16. Решение 2007/513/Евратом на Съвета от 10 юли 2007 година за одобряване на присъединяването на Европейската общност за атомна енергия към изменената Конвенция за физическа защита на ядрения материал;

17. Регламент № 236/2014 на Европейския парламент и на Съвета от 11 март 2014 година за определяне на общи правила и процедури за изпълнението на инструментите на Съюза за финансиране на външната дейност;

18. Европейска система за регистрация на превозвачи на радиоактивни материали COM(2011) 518;

19. Директива № 1493/93/ Евратом на Съвета от 8 юни 1993 година относно доставките на радиоактивни вещества между държавите-членки.