THIRD NATIONAL REPORT ON THE IMPLEMENTATION OF OBLIGATIONS UNDER THE CONVENTION ON NUCLEAR SAFETY

PODGORICA, JULY 2022

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2. Section A: Introduction

The protection of human life and health, and of the environment, against harmful effects of ionizing radiation and radioactive waste management and nuclear safety and security are important activities of the Government of Montenegro which are needed to achieve environmental objectives, which require a well-designed plan and actions to ensure all necessary organizational, human and financial resources and infrastructure. Inadequate management of the disused radioactive sources, radioactive waste or spent fuel can cause effects in the cross-border context as well.

Aware of the importance to the international community of ensuring that nuclear energy is properly used for peace purpose, affirming the necessity of continuing to promote a high level of nuclear and radiation safety and security worldwide, desiring to promote an effective radiation safety culture, the Parliament of Montenegro adopted the Law on Ratification of the Convention on Nuclear Safety ("Official Gazette of Montenegro - International Treaties", No. 003/15 of 26 March 2015). The instrument on accession of Montenegro to the Convention on Nuclear Safety was deposited with the International Atomic Energy Agency (hereinafter: IAEA) on 23 April 2015, and it entered into force on 22 July 2015. No Declarations or Reservations were made with the accession instrument. As a full member of the Convention, Montenegro sends a clear message that only by strengthening international cooperation and willingness to participate in the process of reporting and reviewing reports of other member states, it will contribute fully to the global nuclear safety improvement framework.

Since 2006 Montenegro is the member of the United Nations (UN) and a full member of the International Atomic Energy Agency (IAEA). Immediately after regaining its independence in 2007, Montenegro promulgated its own Constitution which places a particular emphasis on the environmental orientation, which means that the State is making effort to protect its environment. This objective can be achieved by adequate policy, strategies, legislation and overall protection of the environment by appropriate economic activities which are performed in Montenegro.

In this regard, in order to fulfill the obligations arising under the Convention on Nuclear Safety, Montenegro has so far prepared and published two national reports on the implementation of obligations arising under the Convention on Nuclear Safety, which were submitted to the IAEA Secretariat. Also, in the review process, Montenegro asked questions and answered questions raised by the parties to the Convention on Nuclear Safety. The answers of Montenegro were also previously adopted by the Government of Montenegro, as well as both national reports.

The first national report was presented at the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety in the period from 27 March to 7 April 2017, while the Second National Report was not presented, given that due to the COVID-19 pandemic, the Eighth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety was postponed, on which a decision was made to hold the **Joint Eighth and Ninth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety** in the period 20-31 March 2023.

Montenegro is a country without nuclear installations, and therefore numerous conditions of the Convention on Nuclear Safety do not apply to Montenegro. There is no nuclear fuel on the territory of Montenegro. The Energy Policy of Montenegro until 2030 and the Energy Development Strategy of Montenegro until 2030 - **do not envisage the**

construction of nuclear power plants or nuclear installations. Moreover, the provisions of the Law on protection against ionizing radiation and radiation safety („Official Gazette of Montenegro“, number 56/09, 58/09, 55/16) **prohibit the construction of nuclear facilities**.

Montenegro has a small number of activities in which ionizing radiation is used, which is why the **use of radioactive material and sources of ionizing radiation is limited to applications in medicine, industry, education and scientific research activities**. The total amount of radioactive waste in Montenegro is very small, due to insufficiently developed industry and the legal obligation to return disused radioactive sources to the supplier. Regardless of the relatively low activities and the small amount of radioactive waste in Montenegro, there is a centralised facility for the storage of radioactive waste, which has been operational since 13 June 2012.

In order to ensure the conditions for the implementation of the policy in the field of protection against ionizing radiation, radiation safety and management of radioactive waste, the Government of Montenegro, at the proposal of the Ministry of Ecology, Spatial Planning and Urbanism, at the session held on 22 September 2011, adopted the first Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste with an Action Plan for its implementation (2012-2016). After the expiration of this strategic document, the Government of Montenegro, at the proposal of the Ministry of Ecology, Spatial Planning and Urbanism, at the session held on 29 December 2016, adopted the **Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021 with an Action Plan for the period 2017-2021.** During 2019, the First Report on the implementation of the Strategy was adopted, i.e. on the degree of realization of the activities recognized in the Action Plan, while the final one will be adopted in 2023, because the time frame for the realization of the activities was extended due to the COVID-19 pandemic.

In order to fulfill the obligations regulated by the Law on Ratification of the Convention on Nuclear Safety (“Official Gazette of Montenegro - International Treaties“, No. 003/15), the Ministry of Ecology, Spatial Planning and Urbanism, in cooperation with the Ministry of Internal Affairs - Directorate for Protection and Rescue, Environmental Protection Agency, Administration for Inspection Affairs and L.L.C “Centre for Ecotoxicological Research”, Podgorica - CETI prepared the **Third National Report on the implementation of the obligations arising under the Convention on Nuclear Safety.** The third national report aims to show that Montenegro is fully committed to fulfilling its obligations arising under the Convention on Nuclear Safety. In accordance with the instructions given in the Guide on the preparation of national reports, as a non-nuclear state, Montenegro reports to the IAEA Secretariat on **the implementation of Articles 7, 8, 9, 10, 15 and 16** (legislative and regulatory framework, regulatory body, responsibility of the licensee, priority of safety, protection against radiation and preparedness for dealing with emergencies) and proposes measures to improve nuclear safety.

The third national report on the implementation of obligations arising under the Convention on Nuclear Safety will be presented at the **Joint Eighth and Ninth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety** in the period from 20 March to 31 March 2023 at the IAEA in Vienna.

By becoming a full member of the Convention on Nuclear Safety, Montenegro uses the opportunity to present its situation in the field of nuclear safety and participate in a

constructive dialogue and exchange of information, with the aim of its further improvement, thereby contributing to the global improvement of nuclear safety.

Through membership in the Convention on Nuclear Safety and regular reporting, Montenegro:

- contributes to the strengthening of the global nuclear safety regime, in order to establish global instruments for prevention in case of potential nuclear accidents, which could also have a transboundary impact;
- participate in the exchange and advancement of knowledge with international partners in the field of nuclear safety;
- promotes regional and global cooperation to promote a higher level of nuclear safety in accordance with the principles of international partnership and solidarity;
- encourages and calls other countries to be Parties of the Convention on Nuclear Safety.

2.1 Status of challenges, suggestions and examples of good practice from the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety

During the Seventh Review Meeting of the Contracting Parties to the Convention on Nuclear Safety, **two challenges for Montenegro, one suggestion and two examples of good practices for Montenegro were recognized. Below is an overview of their current status:**

- **CHALLENGE ME-2017-01:** *Adoption of a new Law on protection against ionizing radiation, radiation and nuclear safety and security, into which relevant international standards and European Union Directives should be transposed, improvement of human capacities, as well as consideration of the reorganization of existing competent authorities in this area.*

  STATUS: Underway.
  The proposal for the law was drafted and harmonized with the EU acquis, and part of the challenge was realized. However, there has been no improvement of human capacities and reorganization of competent authorities in this area, and as for the identified challenge related to the strengthening of administrative capacities in the field of protection against ionizing radiation, radiation and nuclear safety and security, this still represents a challenge that needs to be addressed carefully and in accordance with the plan in the coming period. However, some progress in terms of formal planning of administrative capacity has been achieved. Namely, the Program for the Accession of Montenegro to the European Union 2022-2023 within the negotiation chapter 15 - Energy (adopted at the session of the Government of Montenegro on 26 January 2022, pages 107 and 108), as well as in accordance with the Roadmap for the fulfillment of the closing benchmarks for the temporary closure of negotiations in Negotiating Chapter 15 - Energy (adopted at the session of the Government of Montenegro on 9 December 2021, pages 8 and 9) which are aligned with the Negotiating Position for Negotiating Chapter 15 - Energy, the area of Nuclear Safety and Radiation Protection, **envisages the employment of officials** in the Ministry of Ecology, Spatial Planning and Urbanism (2), the Environmental

Protection Agency (5), the Directorate for Inspection Affairs (3) and the Ministry of Interior (1).

- **CHALLENGE ME-2017-02:** *Improving the capacity to respond to radiological and nuclear emergencies*

STATUS: Closed.

In addition to the Strategy for Disaster Risk Reduction with a dynamic plan of activities for the implementation of the Strategy for the period 2018-2023 and the Law on Protection and Rescue ("Official Gazette of Montenegro", no. 13/07, 05/08, 86/09 and 32/11, 54/16), the following acts were also adopted:

- Rulebook on the content and methodology of preparation, method of harmonization, updating and keeping studies of risk assessment on the basis of which protection and rescue plans are drawn up ("Official Gazette of Montenegro", no. 31/17) and
- Rulebook on the Detailed Content and Methodology of Drafting, Method of Harmonizing, Updating and Keeping Protection and Rescue Plans ("Official Gazette of Montenegro", no. 34/17).

Also, at the end of 2021, the **Disaster Risk Assessment of Montenegro** was adopted, in the preparation of which 94 experts from various state bodies, administrative bodies, academic and NGO communities participated. The drafting of the document was supported by the European Commission, and the drafting was coordinated by the Ministry of Interior, Directorate for Protection and Rescue. It assessed and developed the risks of a radiological and/or nuclear accident (Assessment of the Disaster Risks of Montenegro, pp. 825-889). In addition to this activity, which was preceded by the adoption of the Strategy for Disaster Risk Reduction, intensive drafting of the National Plan for Protection and Rescue from Radiation and Nuclear Accidents is underway. Also, Montenegro established a real-time decision support system for preparation and response in case of radiological and nuclear emergencies - (JRODOS) and formed its own JRODOS team.

The project **Assessment of Risk Management Capability of Montenegro** is being implemented, on which more than 70 experts are working. The project, which is coordinated by the Ministry of the Interior, Directorate for Protection and Rescue, started in April 2022 and will last 18 months and is financed by the European Commission. Assessment of the risk management ability of Montenegro includes:

- assessment of administrative capacities - focus on the existence of an appropriate framework, the distribution of competences and responsibilities, the existence of the necessary professional knowledge, the scope of involvement of external participants and communication.
- assessment of technical capacities – focus on assessment of application of appropriate methodology and infrastructure and
- assessment of financial capacities - focus on assessing the availability of financial resources.

- **SUGGESTION ME-2017-01:** *Implementation of the IAEA mission on the Integrated Regulatory Review Service (IRRS - Integrated Regulatory Review Service) in Montenegro*

STATUS: Open.

As stated in part 2.3 Realized advisory missions, a **large number of advisory missions have been held** in Montenegro since 2005. Bearing in mind the importance of advisory missions, Montenegro plans to implement a review mission (ARTEMIS or IRRS) **after the completion of the drafting of the new legal framework, i.e. after the drafting of all by-laws.** The importance of carrying out the mission was highlighted in the Draft Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, in which this is a prescribed norm, as well as that the Mission Report will be publicly available.

- **EXAMPLE OF GOOD PRACTICE ME-2017-01:** *Installing stations for measuring the gamma dose rate - GDR (gamma dose rate) stations*

In addition to the installation of the mentioned network of stations, as part of cooperation with the European Commission, the Ministry of Ecology, Spatial Planning and Urbanism and the Environmental Protection Agency launched a new project approved by the European Commission, within the framework of which three (3) additional stations will be delivered to Montenegro, in order to thicken the network. Also, additional equipment for on-line monitoring of radioactivity will be delivered for the Ministry, the Agency and the Center for Ecotoxicological Research (CETI) and the necessary training for officials will be conducted. The procedure for the procurement of equipment by the European Commission is underway, after the tender procedure has been carried out. In the meantime, the Agency has determined three new locations (Žabljak, Kolašin and Cetinje) and completed all preparatory construction works for the installation of new stations and equipment.

- **EXAMPLE OF GOOD PRACTICE ME-2017-02:** *Public participation in the adoption of laws and by-laws, as well as decisions concerning environmental protection and protection against ionizing radiation, such as organizing the process of public discussion during the issuance of a permit for the management of a radioactive waste storage facility.*

Regardless of the above example of good practice, Montenegro **continued to implement good practice by organizing a high-quality public discussion** during the drafting of the new Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, which is described in more detail in section 2.4 Progress achieved in relation to the Second Report on the implementation of the arising obligations.

2.2 The impact of COVID-19 pandemic

The work program of the competent institutions, despite the crisis caused by the COVID-19 pandemic, was largely implemented successfully. Like all countries of the world, Montenegro felt the impact of the COVID-19 pandemic in the field of radiation and nuclear safety and security. Namely, mandatory on-call hours for employees in competent institutions and work from home were introduced. In this regard, the process of issuing permits did not suffer, while the inspector worked almost as in normal conditions, and the inspection controls were carried out to the greatest extent. Regarding the implementation of strategic documents, primarily the Action Plan of the Strategy for Protection against Ionizing Radiation, Radiation Safety and Management of

Radioactive Waste, due to the COVID 19 pandemic, a small number of activities were postponed, and the deadline for the implementation of this document was postponed by two years. Also, due to financial constraints, the Radioactivity Monitoring Program was not implemented in 2021. Also, the equipment ordered and provided through the projects for representatives of competent institutions could not be delivered due to traffic restrictions during the pandemic. The training of officials and regular work was mainly carried out through virtual platforms.

The impact of the COVID-19 pandemic was felt by the holders of certain licenses for performing radiation activity, since it was not possible to deliver important radionuclides for their functioning, primarily to the Department of Nuclear Medicine, where certain delays in the delivery of open sources of ionizing radiation were registered.

The laboratories, which carry out certain measurements in the field of radiation safety and protection against radiation, performed the contracted work with quality and in a timely manner and were able to fulfill all requests for services from the businesses and citizens.

2.3 Realized advisory missions

As part of the implementation of **advisory missions**, Montenegro plans to implement a review mission (peer review) **after the completion of the new legal framework, whether it is an ARTEMIS or an IRRS mission**. The importance of carrying out the mission was highlighted in the Draft Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, in which this is a prescribed norm, as well as that the Mission Report will be publicly available.

Montenegro uses the opportunity to inform that it has so far implemented several expert and advisory missions, of which the following missions stand out:

- RASSIa 2005 mission; 31 October – 2 November 2005;
- EPREV 2008 mission, 24 – 28 November 2008;
- IRRS 2008 mission; 29 January – 1 February 2008;
- IAEA support mission in 2009;
- Mission within the project: C3-RER/9/104/09/01 - NREP Review “Support during the revision/amendment of the national plan for action in the event of a radiation accident and relevant regulations", 16-20 January 2012;
- IAEA Advisory Mission, 18-22 November 2013;
- "INT9176/52/01 Expert mission – conditioning of disused sealed radioactive sources", 18-27 June 2014;
- IAEA legal mission dedicated to CPPNM/ACPPNM, February 2016
- IAEA Advisory Mission on the development of a decommissioning plan for the storage of radioactive waste and temporary storage, 6-10 November 2017
- IAEA Legal Mission 2017
- EC/ENCO mission, compliance of the Proposal for the law with the EU acquis, 2018 and 2019.

2.4 Progress achieved in relation to the Second Report on the implementation of obligations arising from the Convention on Nuclear Safety

In the reporting period, Montenegro **achieved significant progress**:

- **a good performance was achieved in the implementation** of the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021 with the Action Plan for the period 2017-2021;
- the Strategy for Disaster Risk Reduction with the Dynamic Plan of Activities for the Implementation of the Strategy for the period 2018-2023 **was adopted**, session of the Government of Montenegro, 21 December 2017;
- two Action Plans for the implementation of the Disaster Risk Reduction Strategy for the period 2018/2019 and for the period 2020/2021 **were adopted**;
- the Radon Protection Program with the Action Plan for the period 2019-2023 **was adopted**, session of the Government of Montenegro, 20 December 2018;
- the First report on the implementation of the measures of the Action Plan for the period 2017-2018 of the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021 **was adopted**, Government of Montenegro 26 December 2019;
- the Government **adopted**, on 16 January 2020, Proposal for the Law on protection against ionizing radiation, radiation and nuclear safety and security, which was forwarded to the Parliament of Montenegro for adoption. On the basis of the Proposal of the Law, it is foreseen that within three years from its adoption, by-laws necessary for the implementation of the Law will be drawn up, as well as the Law on Liability for Nuclear Damage will be adopted;
- the Law on Ratification of the Joint Protocol on the Application of the Vienna Convention and the Paris Convention ("Official Gazette of Montenegro - International Treaties", No. 012/18 of 31 December 2018) **was adopted;**
- the Law on Ratification of the Protocol of 2005 to the Protocol for the suppression of unlawful acts against the safety of fixed platforms located on the continental shelf ("Official Gazette of Montenegro - International Treaties", No. 009/19 of 17 October 2019) **was adopted**;
- the Law on Ratification of the Protocol from 2005 on Amendments to the Convention on the Suppression of Illegal Actions Against the Safety of Maritime Navigation ("Official Gazette of Montenegro - International Agreements", No. 009/19 of 17 October 2019) **was adopted;**
- the Agreement between the Government of Montenegro and the Council of Ministers of the Republic of Albania on cooperation and mutual assistance in emergency situations **was adopted** ("Official Gazette of Montenegro - International Agreements", number 11/18);
- the Agreement between the Government of Montenegro and the Government of the Republic of Turkey on cooperation and mutual assistance in the field of emergency situations **was adopted** ("Official Gazette of Montenegro - International Agreements", number 5/19);

- Decision on the publication of the Agreement between the Government of Montenegro and the Government of the Republic of Azerbaijan on cooperation in the field of emergency situations ("Official Gazette of Montenegro - International Agreements", number 10/19) **was adopted**;
- the Decision on the publication of the Agreement between the Government of Montenegro and the Government of the Republic of Bulgaria on cooperation in the event of disasters ("Official Gazette of Montenegro - International Agreements", number 7/20) **was adopted**;
- Memorandum of Understanding **was signed** between the Government of Montenegro and the ITF Institution for Strengthening Human Security of the Republic of Slovenia in the area of mine action, destruction of conventional weapons and physical security and stockpile management;
- Memorandum of Cooperation on the implementation of the project "Cross-Border Fire Protection" **was signed**;
- Memorandum of Understanding **was signed** between the Ministry of Interior of Montenegro and the Norwegian People's Aid in connection with the implementation of the Program for the release of land from areas contaminated with remnants of cluster munitions;
- **instruments of ratification** for the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) **were deposited**;
- the National Platform for Disaster Risk Reduction **was established**;
- **five Conferences** of the National Platform for Disaster Risk Reduction **were organized**;
- several field and staff exercises **were organized;**
- the **implementation** of the multi-user IPA project of the European Commission JRODOS "EuropeAid/140203/DH/SER/MULTI - Strengthening the capacity of the countries of the Western Balkans for preparation and response in case of radiological and nuclear emergencies, technical assistance for decision-makers" **began**;
- JRODOS system **established** in Montenegro;
- the national JRODOS Team **was formed**;
- a **total of 41 national reports and statements** on the nuclear materials of Montenegro were submitted to the International Atomic Energy Agency in the framework of the implementation of: the Treaty on the Non-Proliferation of Nuclear Weapons, the Agreement on Safeguards, the Additional Protocol and the Protocol on Small Quantities;
- a **plan was made** to repack compasses with radioactive radium in stainless steel containers;
- the Rulebook on the internal organization and systematization of the Administration for Inspection Affairs **was adopted**, which stipulates that **three more persons**, who should be employed, perform protection against ionizing and non-ionizing radiation;
- the Rulebook on the content and methodology of preparation, the method of harmonizing, updating and storing the Elaborate on risk assessment, on the basis of which protection and rescue plans are drawn up **was adopted**;

- the Rulebook on the detailed content and methodology of preparation, the method of harmonizing, updating and keeping protection and rescue plans was **adopted**;
- the discovery of a source without an owner and the illegal circulation of radioactive materials in the ITDB database **were reported** to the International Atomic Energy Agency;
- **inspections** by the International Atomic Energy Agency **were carried out**;
- public discussions, debates and several round tables **were organized** in order to raise awareness;
- **organized** TAIEX regional workshop in the field of radioactivity monitoring for the countries of the Western Balkans;
- Montenegro **joined** the Global Initiative for radium Ra 226;
- **allocated budget funds** for the realization of tenders and other public procurements;
- drafts of five (5) rulebooks **were prepared**;
- the Strategy for the Prevention and Suppression of Terrorism, Money Laundering and Financing of Terrorism for the period 2022-2025, with the Action Plan for 2022-2023, **was adopted** in December 2021;
- the Cyber Security Strategy of Montenegro for the period 2022-2026, with the Action Plan for the period 2022-2023, **was adopted**;
- the **implementation** of the national project of the University of Montenegro (Faculty of Science and Mathematics - PMF) for the establishment of a national training center for the field of protection against ionizing radiation, radiation and nuclear safety and security approved by the IAEA **began;**
- the **remediation** of the Gradac and Maljevac locations (NORM) **was completed**;
- **transparency activities were carried out** through participation in electronic and print media;
- **documents** adopted by the Government of Montenegro and other institutions (Strategies, Programs, Action Plans, Reports, Proposals for laws...) **were made public**;
- the Program for the accession of Montenegro to the European Union 2022-2023 **was adopted** as part of the negotiating chapter 15 - Energy (adopted at the session of the Government of Montenegro on 26 January 2022, pages 107 and 108);
- the Roadmap for the fulfillment of the closing benchmarks for the temporary closure of negotiations in Negotiating Chapter 15 – Energy **was adopted** (adopted at the session of the Government of Montenegro on 9 December 2021, pages 8 and 9) which are aligned with the Negotiating Position for Negotiating Chapter 15 – Energy;
- **collected and stored safely and securely**: 344 smoke detectors, 13 sources without owners and 7 disused radioactive sources taken from various practices, etc.

As a **good practice**, Montenegro emphasizes **transparency and public participation in decision-making during the drafting of strategic and legal acts.** Namely, the participation of the public in matters of protection against ionizing radiation, and therefore also in matters of the importance of safe management of radioactive waste, of decision-making, strategic documents, as well as when drafting regulations, is regulated

in Montenegro by the Decree on the procedure and manner of conducting public hearings in preparation of the law ("Official Gazette of Montenegro", No. 12/12) and the Decree on the manner and procedure of cooperation between state administration bodies and non-governmental organizations ("Official Gazette of Montenegro", No. 7/12). The aforementioned Decrees were amended and consolidated within the **Decree on the election of representatives of non-governmental organizations to the working bodies of state administration bodies and the implementation of public hearings in the preparation of laws and strategies** adopted by the Government of Montenegro on 14 June 2018 ("Official Gazette of Montenegro", no. 41/18).

In addition, the standards for public participation were set based on **the Law on Free Access to Information** ("Official Gazette of Montenegro", No. 44/12, 30/17) and the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention), of which Montenegro is a full member. In order to provide all the necessary conditions for the application of the Aarhus Convention in Montenegro, immediately after the ratification of this Convention, the implementation itself was started, i.e. the formation of Aarhus centers, both within government institutions and within non-governmental organizations, which represents an excellent mechanism for the availability of information, public participation in decision-making and the right to legal protection in environmental matters. The network of Aarhus centers in Montenegro consists of Aarhus centers in the following cities: Podgorica, Nikšić, Berane and Pljevlja. Aarhus Centers strive in these areas to facilitate the implementation of the Law on Ratification of the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) with the aim of strengthening the role of citizens and civil society organizations in issues that concern the environment. Aarhus centers are places where citizens can get quality and timely information on all environmental issues, and thus be included in decision-making processes.

It is important to emphasize that during the drafting of the regulations, the proponent of the regulations organizes a forty-day public discussion with the aim of drafting the best and highest quality regulations. During the Public Discussion, debates and panel discussions, individual meetings and the like are held.

Also, forums, public hearings and round tables, both informative and educational in nature, are organized by each of the aforementioned institutions, which make up the regulatory body, according to their competences, as necessary, in accordance with the aforementioned legal framework.

It should be emphasized that during the organization of the aforementioned informative and educational events on the topic of raising citizens' awareness of the importance of safe radioactive waste management, the presence of a representative of the institution that manages the storage of radioactive waste, LLC Center for Ecotoxicological Research, is always mandatory.

A good way of informing the public existed also during the implementation of the IPA 2009 project "Management of closed radioactive sources including radioactive lightning rods and strengthening the effectiveness of the regulatory infrastructure in the field of radiation protection in Montenegro, North Macedonia and Kosovo (according to UNSCR 1244/1999)", as well as projects MNE9004 "Mapping radon in Montenegro and improvement of the national radon protection system", MNE9005 "Evaluation and reduction of radon in Montenegrin schools and kindergartens" and INT91762 "Strengthening the control of disused sealed radioactive sources in the Mediterranean".

The public was informed on several occasions through the media and accompanying material (information, flyers, brochures, posters, etc.) about the IPA 2009 and INT91762 project, about the removal and collection of radioactive lightning rods and other disused sealed radioactive sources, their transport and storage, and then and their conditioning.

From the aspect of education, it should be emphasized that the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021 with the Action Plan for the period 2017-2021 and the drafting of the new Law on protection against ionizing radiation, nuclear and radiation safety emphasized the importance of training and constant strengthening of the capacity of employees in the field of protection against ionizing radiation, which resulted in the provision of guidelines for the development of a legal framework that will provide the basis for the development of an appropriate training program for that staff. Thus, strengthening the capacity of employees in the field of protection against ionizing radiation ensures better information and education on all issues of protection against ionizing radiation, and consequently also on issues of radioactive waste management.

Previous experiences have confirmed that the inclusion of all relevant participants, including representatives of the non-governmental sector, provides better solutions in the field of protection against ionizing radiation, radiation and nuclear safety and security and management of radioactive waste, but also increases the acceptability of solutions in the public. The way of access to information that is public, the selection of relevant participants, as well as the way of solving problems in the decision-making process is very delicate and must be planned carefully and with enough flexibility, in order to enable adaptability to different situations. The involvement of all relevant participants plays an important role in administrative procedures and can influence the final decisions.

The Environmental Protection Agency has its own website where information in the area of promoting safety and security culture can be found. In case of problems or citizens' interest, meetings with citizens or round tables are organized. Also, the Agency publishes issued permits on its website, as well as information on radioactivity monitoring.

Also, what represents a **significant advancement** is the introduction of terms and a special section on the promotion of safety and security culture - **Section XV: Radiation and nuclear safety and Section XVI: Radiation and nuclear security** within the Strategy for protection against ionizing radiation, radiation safety and radioactive waste management for period 2017-2021 with the Action Plan for the period 2017-2021.

In order to better inform the interested public on the issues of protection against ionizing radiation, radiation and nuclear safety and security and management of radioactive waste, especially due to the development of a new legal framework, the Ministry of Ecology, Spatial Planning and Urbanism, in cooperation with the Environmental Protection Agency and representatives of the non-governmental of the sector **will develop a Communication Strategy for the field of protection against ionizing radiation**, under the auspices of international donors, which will include the method of communication, target groups, form of organization, topics that will be presented, holders of activities, production of brochures and other publications, etc. This activity is planned to be developed as measure 51 from the Action Plan of the Strategy for Protection from Ionizing Radiation, Radiation Safety and Management of Radioactive Waste for the period 2017-2021, and is also provided for in the Draft Law on protection against ionizing radiation, radiation and nuclear safety and security, which was sent to

the Parliament of Montenegro for consideration and adoption, for which now the procedure has to be repeated.

In addition, the Proposal for Law on protection against ionizing radiation, radiation and nuclear safety and security for the first time **Introduced a Safety and Security Culture as part of a normative act, as a legal obligation** obliging the holders of registration decisions, licenses and approvals for the performance of business operations and/or activities with radioactive sources and/or nuclear materials to continuously implement measures to improve safety and security culture, i.e. rules of conduct when applying ionizing radiation. This approach represents **a novelty in the legal framework** dealing with protection against ionizing radiation.

The drafting process of the Proposal for the Law lasted two years, and an intensive Public Debate was held for it, as described in the **Report on the conducted Public Debate, which is a public document**. During the preparation of the Proposal for the Law and during the Public Debate, three events were held, namely:

- **round table -** consultation of the interested public regarding the development of Draft Law on protection against ionizing radiation, radiation and nuclear safety and security, 26 February 2018;
- **a round table in cooperation with the Chamber of Commerce of Montenegro** where the draft of the Law on protection against ionizing radiation, radiation and nuclear safety and security was presented, 25 April 2019; and
- **public forum** on the draft Law on protection against ionizing radiation, radiation and nuclear safety and security in the Ministry, 6 May 2019.

Interested subjects submitted a total of 130 objections and 2 comments, of which 35 were accepted, 29 were partially accepted and 66 objections were not accepted. The reason for not accepting the objections **was that they were already an integral part of the text of this Draft Law or that they were not in accordance with the Directives and international standards. As part of the Public Debate, several meetings were held with representatives of institutions and members of the Working Group that worked on the development of the Draft Law.** During the development of the Draft Law, the opinions of all competent institutions, organizations and professional associations were obtained, which were submitted to the Government of Montenegro during the consideration of the material.

Photo documentation from the held round tables and public forum

Picture 1.

Picture 2.

Round table-Consultation of the interested public regarding the development of the Draft Law on protection against ionizing radiation, radiation and nuclear safety and security, 26 February 2018 (Photos 1 and 2)

Picture 3.

Picture 4.

Picture 5.

Picture 6.

A round table organized in cooperation with the Chamber of Commerce of Montenegro at which the Draft Law on protection against ionizing radiation, radiation and nuclear safety and security was presented, 25 April 2019 (Pictures 3, 4 and 5)

Public forum on the Draft Law on Protection against ionizing radiation, radiation and nuclear safety and security at the Ministry of Ecology, Spatial Planning and Urbanism, 6 May 2019 (Picture 6)

Regarding **recognized good practices**, **Montenegro highlights the activities of LLC "Center for Ecotoxicological research" within which were collected and safely and securely stored**: 344 smoke detectors with radioactive isotope, 13 radioactive sources without owners and 7 disused radioactive sources taken from various practices.

In addition, **conducting exercises and establishing a national platform** for disaster risk reduction **is also an area of good practice**.

2.5 Implementation of the Vienna Declaration on Nuclear Safety

Montenegro **does not have nuclear installations nor does it plan to build them**. Currently, the construction of nuclear installations in Montenegro is prohibited by the Law on Protection against Ionizing Radiation and Radiation Safety. Also, the strategic framework does not envisage the construction of nuclear power plants. Bearing in mind the above, Montenegro cannot or doesn't have any information to provide regarding the implementation of the Vienna Declaration on Nuclear Safety from 2015.

2.6 Status of questions and answers to the Second National Report of Montenegro

After the publication of the Second National Report of Montenegro on the website of the Secretariat of the Convention, in the process of review and analysis of national reports, **23 questions were posed to Montenegro**. Montenegro was asked questions by: Brazil (9), Latvia (3), the United States of America (1), India (2), Germany (2) and Peru (6).

As the competent institution for monitoring this Convention, the Ministry of Ecology, Spatial Planning and Urbanism, in cooperation with the appointed representatives of the Ministry of Interior - the Directorate for Protection and Rescue, the Agency for Environmental Protection and the Administration for Inspection Affairs - Environmental Inspection and LLC CETI prepared the Answers, which were approved by the Government of Montenegro in February 2020.

The questions that the contracting parties to the Convention on Nuclear Safety addressed to Montenegro referred to Articles 7, 8, 9, 10, 15 and 16 of the Convention, namely:

- application of basic safety principles;
- improvement of the legal framework;
- responsibilities of license holders;
- implementation of the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste with the Action Plan for the period 2017-2021;
- policies and procedures, which ensure the participation of the general public in discussions, issuance of permits, development of regulations or in other regulatory activities;
- adequacy and competence of the existing capacities employed in the relevant institutions (Ministry of Ecology, Spatial Planning and Urbanism, Environmental Protection Agency, Administration for Inspection Affairs and Ministry of Interior);
- organization and planning in case of radiological accidents and informing the population and neighboring countries;
- status of challenges and suggestions given to Montenegro at the Seventh Review Meeting of the Convention on Nuclear Safety;
- activities to promote and implement safety and security culture;
- independence in the work of competent institutions;
- inspection activities and the imposition of penal provisions, etc.

Montenegro did not post questions to the contracting parties of the Group of 7, in which it was together with: **India, Germany, Pakistan, Brazil, Latvia, Kuwait, Peru, Singapore, Vietnam, Chile and Ghana.**

3. Section B: Summary

Since becoming a member state of the Convention on Nuclear Safety in 2015, Montenegro has an opportunity for the third time to describe the manner in which the State is fulfilling the obligations regulated by this international legal instrument.

In the period from 2009, when the Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16) was adopted, Montenegro has made a significant progress with regards to radiation and nuclear safety in the country. Montenegro has ratified the majority of the most important international legal instruments in the field of nuclear and radiation safety and security and is strongly committed to implementation of its international obligations. The most recent IAEA standards and legislation of the European Union are taken into consideration through the adoption of the acquis.

Montenegro is fully committed to Euro-Atlantic integration as the primary strategic goal of Montenegro Government. As a candidate country for membership in the European Union, Montenegro opened negotiations with the EU on 29 June 2012, thereby clearly setting the agenda of accepting and implementing the highest standards in all fields. The instruments of ratification of the Washington Treaty on 5 June 2017, has made Montenegro to become the 29th member of the North Atlantic Treaty Organization - NATO. This fulfilled one of the most important foreign policy priorities of Montenegro and successfully completed long process of reforms in the field of Euro-Atlantic integration. One of the key issues that marked the process of Montenegro's accession to NATO was to raise the level of public support for membership which required the need to inform the public about all aspects of the integration process. Continuous information about the issues relevant to NATO still remains as an obligation that Montenegro should continue to carry out in accordance with its new role as the country member of the Alliance. Accordingly the Government of Montenegro through the implementation of the activities of the Communication Strategy "Montenegro NATO member" for the period up to 2020, defined the objectives, measures and activities to promote the policies and activities of NATO both in the member states and in the partner countries, in order to inform the general public about the benefits that membership in the Alliance brings to Montenegro.

Regarding cases of radiation accidents which may cause the state of emergency, the Government of Montenegro adopted the first National Strategy for Emergency Situations in 2006.

At the session held on 21 December 2017, the Government of Montenegro, at the proposal of the Ministry of Interior, adopted a new **Strategy for Disaster Risk Reduction with the dynamic plan of activities for the implementation of the Strategy for the period 2018-2023**, which has repealed the National Strategy for Emergency Situations from 2006.

The Parliament of Montenegro adopted the Law on Protection and Rescue ("Official Gazette of Montenegro". No. 013/07, 005/08, 086/09, 032/11, 054/16). In 2010, the Ministry of Interior also adopted, in cooperation with all relevant institutions, the National Action Plan in the Case of a Radiation Accident. The drafting of a **new National Plan for Protection and Rescue from Radiation and Nuclear Accidents** is in progress, the adoption of which is expected by the end of 2022.

In the framework of the Treaty on the Non-Proliferation of Nuclear Weapons, the Montenegrin Parliament adopted the Law on Ratification of the Agreement between

Montenegro and the International Atomic Energy Agency on application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons, the Additional Protocol to the Agreement between Montenegro and the International Atomic Energy Agency on application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons and the Protocol to the Agreement between Montenegro and the International Atomic Energy Agency on application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons ("Official Gazette of Montenegro - International treaties", No. 16/10 of 28 December 2010). Montenegro has drafted 41 national reports and declarations on nuclear material under provisions of the above Law and provided them to the IAEA. Reporting follows the defined schedule.

Pursuant to Article 71 of this Agreement several inspections were carried out, during which the inspectors of the IAEA in the presence of environmental inspection confirmed information on the inventory of nuclear materials previously submitted by Montenegro. In order to resolve the issues related to the management of the radioactive material (aircraft engine residues), which are located in the temporary storage on the possession of JSC „13. Jul Plantaže", during the period 6-10 November 2017 the expert mission of the International Atomic Energy Agency was carried out, and this mission has been devoted to development of the draft plans for decommissioning the temporary legacy storage and centralised storage of radioactive waste, which is managed by L.L.C "Centre for Ecotoxicological Research", from Podgorica. The Ministry of Ecology, Spatial Planning and Urbanism **conducted additional tests and allocated financial resources for the solution of this problem in 2022 and 2023.**

For the purpose of fulfilling the obligations regulated by the Law on Ratification of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management ("Official Gazette of Montenegro - International Treaties", No. 03/10 of 19 March 2010), **Montenegro has presented four national reports on the implementation of obligations under the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.**

Although there has been significant progress in the field of radiation safety and security in the coming period, Montenegro will be devoted to work on strengthening the national legal framework in this area, with the aim of transposing and implementing the latest international standards and EU acquis.

4. Section C: Reporting by Articles

4.1 Article 7 Legislative and regulatory framework

„1. Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.

2. The legislative framework shall provide for:
(i) the establishment of applicable national safety requirements and regulations;
(ii) a system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a licence;
(iii) a system of regulatory inspection and assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licences;
(iv) the enforcement of applicable regulations and of the terms of licences, including suspension, modification or revocation. "

4.1.1 Article 7 (1) Legislative and regulatory framework

The commitment of Montenegro to implementing the major international standards in the field of radiation protection, radiation and nuclear safety and security have imposed the need to adopt international legal instruments, guidelines and standards in order to regulate further this field by legislation and improve international cooperation in this field. In relation to that, the Parliament of Montenegro passed the *Law on Ionizing Radiation Protection and Radiation Safety* in 2009 ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16). This Law regulates protection of human life and health as well as protection of the environment against harmful effects of ionizing radiation, performing radiation activities, trade in ionizing radiation sources and radioactive material, radioactive waste management, actions taken in case of radiation accidents, as well as other relevant issues for protection against ionizing radiation and radiation safety.

The Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16) covers all relevant matters of radiation safety. Indirectly, within the review of issues of transport and trade in radioactive material, the ionizing radiation protection is also addressed by: the Criminal Code of Montenegro, the Law on International Legal Assistance in Criminal Matters, the Law on Inspection Supervision and the Law on Transport of Dangerous Goods, the Law on Foreign Trade, the Law on Export Control of Dual Use Goods, the Law on Foreign Trade in Weapons and Military Equipment, the Food Safety Law, the Law on Environment and the Decision on the Checklist for Export and Import of Goods.

From the aspect of regulations under national legislation which facilitate implementation of the Convention on Nuclear Safety, in addition to provisions of the above regulations, important are also provisions of the Environmental Impact Assessment Law, Decree on Projects Subject to Environmental Impact Assessment and Law on Strategic Environmental Impact Assessment. Particularly important are provisions of the Law on Ratification of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo), the Law on Promulgating the Act on Ratification of the Protocol on Strategic Environmental Impact Assessment in a

Transboundary Context and the Law on Ratification of the Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (Aarhus).

In the field of ionizing radiation protection, radiation and nuclear safety and security, Montenegro is a contracting party to 21 international legal instruments which are given in Annex 1 of the Report.

In addition to these previously mentioned international legal instruments, Montenegro from the aspect of international Law implements the following:

- European Agreement concerning the International Carriage of Dangerous Goods (ADR Agreement) with its components, Annexes A and B;
- Convention on International Rail Transport - (COTIF);
- Regulation concerning the International Carriage of Dangerous Goods by Rail - RID;
- Convention on International Civil Aviation;
- Technical Instructions for the Safe Transport of Dangerous Goods in Air Transport (ICAO Doc. 9284 AN/905), including additions, changes and corrections;
- European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (AND).

In addition, Montenegro is also a member of the systems:
- RASIMS, which present Radiation Safety Information Management System;
- NUSIMS, which present Nuclear Security Information Management System;
- EPRIMS, which present Emergency Preparedness and Response Information Management System.

Montenegro participates with its representatives in the platforms International Nuclear and Radiological Event Scale (INES) and Unified system for the exchange of information, incidents and emergencies for the early notification of incidents involving radioactive sources with potential transboundary impacts (USIE).

Since 2006, Montenegro has been a user of the Database on incidents and illicit traffic of nuclear and radioactive material (ITDB).). In addition, representatives of Montenegro are the members of the:
- Nuclear Security Guidance Committee (NSCG);
- Waste Safety Standards Committee (WASSC);
- Emergency Preparedness and Response Standards Committee (EPReSC);
- Radiation Safety Standards Committee (RASSC);
- Nuclear Safety Standards Assessment Committee (NUSSC) and
- Transport Safety Standards Committee (TRANSSC).

In January 2016, Montenegro formally expressed readiness *for voluntary implementation* of *a non-binding Code of Conduct on the Safety and Security of Radioactive Sources and Supplementary Guidelines on the Import and Export of Radioactive Sources* while in January 2019, Montenegro expressed readiness to implement the *Supplement Guide on the Management of Disused Radioactive Sources*.

4.1.2 Article 7 (2) (i) National safety requirements and regulations

On the basis of the Law on Protection against Ionizing Radiation and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16), Montenegro applies seventeen (17) regulations. By the 2003 Constitutional Charter, Montenegro has taken over all regulations in this field from the FRY, some of which are still in use until new ones are drafted, in accordance with the dynamics of drafting regulations and alignment with EU law in the negotiation process, i.e. Montenegro's integration into the European Union. Particularly important are the regulations defining radiation protection for the entire population and professionally exposed persons, radiation protection in medicine, safe transport of radioactive materials, etc.

Below is the list of regulations:

Nuclear safety

1. Decision on conditions of location, construction, trial run, commissioning, operation and permanent closure of nuclear facilities ("Official Gazette of the Federal Republic of Yugoslavia", no. 42/97); (Chapter V of this Decision has ceased to be applied)
2. Decision on the method and conditions for systematic examination of radionuclide presence in the environment surrounding a nuclear facility ("Official Gazette of the Federal Republic of Yugoslavia", no. 42/97);
3. Decision on the conditions to be fulfilled by persons working on process control tasks in nuclear facility and on the process supervising position ("Official Gazette of the Federal Republic of Yugoslavia", no. 2/98);
4. Decision on conditions for trade and use of nuclear materials and methods of keeping records of nuclear material by zones of material balances – "Official Gazette of the Federal Republic of Yugoslavia", no. 42/97);

Radiation protection

5. Rulebook on intervention and derived intervention levels and measures of protection of the population, domestic animals and agriculture (veterinary medicine, crop production and water management) in case of emergency ("Official Gazette of the Federal Republic of Yugoslavia", no. 18/92 and "Official Gazette of Serbia and Montenegro", no. 1/2003 - Constitutional Charter);
6. Decision on records on ionizing radiation sources and irradiation of population, patients and persons exposed to the ionizing radiation at work (Official Gazette of the Federal Republic of Yugoslavia 45/97);
7. Decision on systematic examination of the radionuclide contents in the environment ("Official Gazette of the Federal Republic of Yugoslavia", no. 45/97);
8. Decision on conditions to be fulfilled by legal persons in order to perform the measurements for assessing the degree of exposure to ionizing radiation of persons working with sources of radiation, patients and population ("Official Gazette of the Federal Republic of Yugoslavia", no. 45/97);
9. Decision on qualifications and health conditions for persons working with sources of ionizing radiation ("Official Gazette of the Federal Republic of Yugoslavia", no. 45/97);

10. Rulebook on the method of applying ionizing radiation in medicine ("Official Gazette of the Federal Republic of Yugoslavia", no. 32/98, 33/98);
11. Rulebook on conditions to be fulfilled by legal entities for performing systematic examination of radionuclide in the environment ("Official Gazette of the Federal Republic of Yugoslavia", no. 32/98, 67/02, 70/02);
12. Rulebook on conditions for trade and use of radioactive materials, X-ray generators and other devices that produce ionizing radiation ("Official Gazette of the Federal Republic of Yugoslavia". No. 32/98);
13. Rulebook on the limits of exposure to ionizing radiation ("Official Gazette of the Federal Republic of Yugoslavia", no. 32/98);
14. Rulebook on the limits of radioactive contamination of the environment and decontamination procedures ("Official Gazette of the Federal Republic of Yugoslavia", no. 9/99);
15. Rulebook on the conditions to be met by legal entities for conducting decontamination procedures ("Official Gazette of the Federal Republic of Yugoslavia", no. 9/99);
16. Rulebook on closer conditions for obtaining a licence to manage radioactive waste storage ("Official Gazette of Montenegro", no. 56/11);
17. Rulebook on the method of collection, keeping, processing and storing of radioactive waste ("Official Gazette of Montenegro", no. 58/11).

In accordance with the Decree on the selection of NGO representatives in the State Administration Working Bodies and in implementation of Public Debate in Preparing Laws and Strategies ("Official Gazette of Montenegro", No. 041/18), taking into account the complexity of the matter which is regulated with this Law, the Ministry of Ecology, Spatial Planning and Urbanism on 26 February 2018 organized a roundtable for consultation of interested public concerning the drafting of the new Law on Ionizing Radiation Protection, Radiation and Nuclear Safety and Security, which was supported under the Program for Nuclear Safety and Radiation Protection IPA 2014 project "Further strengthening of the nuclear regulatory bodies of Albania, North Macedonia, Bosnia and Herzegovina, Serbia, Kosovo (under UNSCR 1244/1999) and Montenegro". The roundtable was attended by representatives of the interested parties from relevant governmental agencies, representatives of users and technical services, NGOs and the media, as well as representatives of the Consortium ENCO who conducted the Project, and representatives of the Regulatory Authorities of Bosnia and Herzegovina and North Macedonia.

Montenegro drafted a new Law on protection against ionizing radiation, radiation and nuclear safety and security, which was approved by the Government of Montenegro in January 2020, and whose confirmation procedure must be repeated due to institutional changes.

It is necessary to point out that the Ministry of Ecology, Spatial Planning and Urbanism, in the procedure of drafting this law, on 7 June 2018, published a public call for non-governmental organizations to propose candidates to the Working Group for the drafting of the Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security. As per the aforementioned Public call for non-governmental organizations to nominate candidates for the Working Group for drafting the Draft Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, no non-governmental organization applied within the specified time period.

The reason for the adoption of the new Law on protection against ionizing radiation, radiation and nuclear safety and security is primarily that the existing Law is not harmonized with the current EU acquis, ratified international legal instruments, standards and guidelines of the IAEA and the International Commission for Protection against Ionizing Radiation (ICRP), which have changed significantly in the period since the adoption of the law, i.e. from 2009, until today. Namely, the new Law improves the field of protection against ionizing radiation, radiation and nuclear safety and security through the transposition of 11 Directives of the Council of the European Union, one Decision and one Regulation of the European Commission.

The Ministry of Ecology, Spatial Planning and Urbanism as the institution that coordinated the development of the new Law, after the drafting of the Law in accordance with the Decree on the election of representatives of non-governmental organizations to the working bodies of state administration bodies and the implementation of public discussions in the preparation of laws and strategies ("Official Gazette of Montenegro", number 041/18), on 28 March 2019 informed the interested public that it has initiated a public debate on procedure on the Draft Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security. The public debate lasted for 40 days, and the Report on the conducted public discussion was drawn up.
The content of the Public Debate Program included:

- posting of the draft of the Law on Ionizing Radiation Protection, Radiation and Nuclear Safety and Security on the web page of the Ministry;
- organizing the roundtable, which was held on 25 April 2019 in cooperation with the Chamber of Commerce of Montenegro, because the norms of the new Law provide a significant number of future obligations for entrepreneurs of Montenegro; and
- organizing the public debate on 6 May 2019 in the Ministry of Ecology, Spatial Planning and Urbanism.

Hereby, the Ministry invited citizens, professional and scientific institutions, state bodies, professional associations, non-governmental organizations, the media and other interested organizations and communities to participate in the public debate and give their proposals, remarks and suggestions on the text of the Draft Law on Protection against ionizing radiation, radiation and nuclear safety and security.
During the preparation of the new Law, in 2018, European Commission support was used for the verification of the compliance of the first draft of the Law with the EU acquis in the field of protection against ionizing radiation, as the main activity in the framework of the regional project supported by the European Commission through the pre-accession instrument of European Union, IPA multi-beneficiary project "Further strengthening of the nuclear regulatory bodies of Albania, North Macedonia, Bosnia and Herzegovina, Serbia, Kosovo (under UNSCR 1244/1999) and Montenegro". The rating of the draft of the Law is presented in the official report of the European Commission.

The application of the existing Law on Protection against Ionizing Radiation and Radiation Safety in practice showed the need for overcoming and improvements related to:

- the application of a graded approach in the process of issuing authorization;
- the justification of practices and/or activities in the application of ionizing radiation;

- redefining of norms which demonstrate that the applicant meets the requirements in terms of safety and security to possesses and uses the source before issuing authorization;
- unlimited authorization which caused unnecessary pressure on the inspection;
- unrecognized authorization (professional training, decommissioning, disposing, possession a source of ionizing radiation, etc.);
- norms, which as an result did not have a clear offences;
- norms, which make influence on the limitation of development of certain regulations (rulebook on the monitoring of the radioactivity and etc.);
- spotting certain prohibitions;
- more specific definition of the provisions for the safe application of ionizing radiation;
- medical exposure, in particular in terms of controlling exposure of patients, carers and comforters;
- performance of the practices and/or activities where radioactive materials with increased contents of natural radionuclides (NORM) may occur;
- protection from radioactive gas radon;
- export and transit of radioactive waste and spent fuel transit;
- import, export, transit, transport and use of nuclear materials;
- application of protective measures from ratified international legal instruments related to nuclear materials and others.

These sub-areas of strengthening the legal framework were also necessary due to changes of the EU acquis, **the provisions** of ratified international legal instruments and the standards and guidelines of the IAEA and the International Commission on Radiation Protection, which, in the period **since the adoption of the Law, i.e. since 2009, until today, were significantly changed.**

Taking into account the above analysis of the shortcomings it was necessary to create a new Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, which will, based on experience and past implementation, significantly improve the protection of the human health and the environment from harmful effects which may occur because of the inadequate application of ionizing radiation for peaceful purposes and thereby facilitate to end users the implementation of this Law.

During the drafting of the Strategy for the period 2017-2021, the analysis related to establishing of professional training and retraining in Montenegro has been done. Montenegro, as a member of the IAEA, supports the strategic approach to the problem concerning the establishment and maintenance of appropriate levels of competence and knowledge in the field of radiation and nuclear safety and security, which should be commensurate with the scope of practice where, at the national level, sources of ionizing radiation are in use, primarily due to the awareness that only through strategic development of national expertise and development of the National program of professional training in the field of radiation and nuclear safety and security and protection from ionizing radiation may contribute adequately to established system of protection of human health and the environment from harmful effects of ionizing radiation. In this regard, the Strategy for the period 2017-2021 envisages development of the National program of professional training which will include planning of the needs of Montenegro for professional training and retraining of governmental employees in the relevant institutions in this area.

Separate chapter of the draft Law on Ionizing Radiation Protection, Radiation and Nuclear Safety and Security regulates the conditions which have to be met by the legal entity which intends to conduct the professional training and retraining of occupationally exposed persons, radiation protection officers as well as security officers. In addition, the same chapter of the draft Law defines the legal basis for adoption of rulebooks on professional training program in the field of protection from ionizing radiation, radiation and nuclear safety and security and the manner of conducting of training and retraining of trained persons.

4.1.3 Article 7 (2) (ii) System of licensing

The licences in the field of ionizing radiation protection and radiation safety, which are not time-limited, are issued by the Environmental Protection Agency under provisions of the Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", No 56/09, 58/09, 40/11, 55/16) and supporting regulations, the Law on Administrative Procedure ("Official Gazette of Montenegro", No 56/14, 20/15, 40/16, 37/17) and the Law on Transport of Dangerous Goods ("Official Gazette of Montenegro", No 33/14, 13/18).

On the basis of the database from the informational system managed by the Environmental Protection Agency **issued 230 licences in total between 15 June 2019 and 15 July 2022** (Table 1).

Table 1 : **Licences issued for the period from 15 June 2019 to 15 July 2022**

LICENCE TITLE	NUMBER OF ISSUED LICENCES
Licences for performing radiation activities	**35**
Licence for temporary performing radiation activities	**6**
Licence for trade in source of ionizing radiation -import	**104**
Licence for trade in source of ionizing radiation – export	**22**
Licence for transport of sources of ionizing radiation	**63**
TOTAL	**230**

For the purpose of more effective and more efficient work, the staff of the Department for Radiological and Nuclear Safety and Security and Ionizing and Non-ionizing Radiation Protection of the Environmental Protection Agency participated in the work of commissions for assessing fulfilment of the conditions for performing radiation activities.

The Environmental Protection Agency, as one of important participants of the radioactive waste management process, is working continuously on the **inventory of radioactive waste** in Montenegro. In addition, **data on radioactive sources** in Montenegro **are continuously updated**, and they are still used and found in RAIS database, as well as data on professionally exposed persons. The database is updated every day with relevant data concerning trade and transport of radioactive materials and trade, transport and use of all sources of ionizing radiation in our country.

According to the Law on Transport of Dangerous Goods ("Official Gazette of Montenegro", no. 33/14, 13/18), the Ministry of Interior - Directorate for Protection and Rescue issued **compliance for transport of dangerous materials** in the regular procedure of issuing licences for trade in radioactive materials, which are issued by the Environmental Protection Agency.

The Environmental Protection Agency has developed six procedures relating to issuing of various licences:

- Procedure for issuing licences for mobile industrial radiography (gamma defectoscope);
- Procedure for issuing licences for performing radiation activities in medicine - use of high energy ionizing radiation generators – accelerators;
- Procedure for issuing licences for performing radiation activities - use of devices with sealed source of ionizing radiation in medicine for radiotherapy – brachytherapy;
- Procedure for issuing licences for trade (import/export/transit) in sources of ionizing radiation;
- Procedure for issuing licences for performing radiation activities – use of dental X-ray machine; and
- Procedure for issuing licences for performing radiation activities - use of open sources of ionizing radiation for diagnostics and therapy in nuclear medicine.

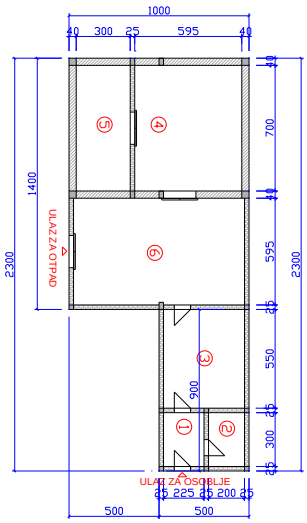
In the framework of the regional project supported by the European Commission through the pre-accession instrument of European Union, IPA multi-beneficiary project "Further strengthening of the nuclear regulatory bodies of Albania, North Macedonia, Bosnia and Herzegovina, Serbia, Kosovo (under UNSCR 1244/1999) and Montenegro", representatives of the Environmental Protection Agency checked the existing procedures and performed their audit to ensure more systematic approach to licensing.

The radioactive waste storage became operational on 13 June 2012 by issuing of the licence for managing radioactive waste storage by the Environmental Protection Agency. The storage is fully compliant with all safety requirements defined by legislation and regulations for safe and secure storage of radioactive waste and disused sealed radioactive sources, in accordance with international standards.

Detailed report on the method of licensing the radioactive waste storage as well as public participation of Montenegro in the whole process is given in detail in the **First National Report on the Implementation of the Obligations under the Convention on Nuclear Safety.**

The total external area of the radioactive waste storage is 185 m2, while the usable area of the facility is 162.4 m2. The area of the part of the facility where radiation sources and radioactive waste are stored is 62.65 m2. The area for reception and processing is 59.5 m2, and the administrative and technical part is 40.25 m2. The storage of radioactive waste is a ground facility. The dimensions and layout of the rooms are given in the following picture:

BUILDING BASE WITH ROOM LAYOUT



1. SANITARY PASS - CHECKPOINT
2. DECONTAMINATION AREA (BATHROOM AND TOILET)
3. ADMINISTRATION – MEASURING ROOM
4. RADIOACTIVE WASTE STORAGE
5. STORAGE OF SEALED RADIATION SOURCES
6. RECEPTION AND PROCESSING OF RADIOACTIVE WASTE

All important aspects of the safe operation of the radioactive waste storage facility in Podgorica are analyzed in the Safety Report.

As for the **aging phenomena**, it was initially taken into account during the planning of the radioactive waste storage and the choice of technologies and methods of radioactive waste processing and packaging.

First of all, the following was taken into account:

- radioactive waste in Montenegro is structurally low and medium active;
- practically all known disused radioactive sources have been removed, dismantled, conditioned (except for two cesium sources) and packaged;
- storage is carried out in specially designed stainless steel containers, which are intended for storage and meet disposal criteria;
- there are a number of verification procedures that determine the condition of the facility and the stored radioactive material. First of all, this refers to two independent monitoring programs for the interior and exterior of the warehouse. One is performed by the holder of the license for the management of radioactive waste storage LLC "Center for Ecotoxicological Research" CETI, and the other is operated by an independent institution that meets all the necessary conditions, and which offers the most favorable conditions in the tender for this job;

- radioactive waste storage and all installations are periodically controlled by a licensed institution, and in accordance with a special law, as well as by the inspection.

Until the conditions for the disposal of radioactive waste are established, in accordance with the provisions of Article 38 of the *Law on Protection from Ionizing Radiation and Radiation Safety* ("Official Gazette of Montenegro", No. 56/09, 58/09, 40/11, 55/16), radioactive waste will be stored with a legal entity that has a license to manage radioactive waste storage.

After the issuance of the license for the management of the radioactive waste storage, began the process of collecting, transporting and storing: radioactive material, radioactive lightning rods, fire/smoke detectors and compasses with radioactive isotopes (paint) and disused sealed radioactive sources from the territory of Montenegro, which were safely and securely stored in the central storage of radioactive waste.

There is also a temporary legacy storage where remains of aircraft engines are located, whose permanent solution is the focus of the competent institutions, i.e. solving the issue of decommissioning that location in the coming period.

The practice that has proven to be good in Montenegro is that radioactive sources are returned to the country of origin after use, and this is one of the conditions given in the licence, and from that aspect, the return of radioactive sources to the producer/supplier is controlled in one way. Regarding the return of the source, the holder of the appropriate licence for the use of that source draws up the Agreement for the return of the source. The control of the implementation of this process is carried out by the Administration for Inspection Affairs through the Environmental Inspection - Inspector for protection against ionizing radiation.

All countries that have a storage in their territory where disused radioactive sources and/or radioactive waste are located should make a decision on disposal, whether in the country or outside it. Also, according to the Joint Convention, all member countries must establish a management policy for spent fuel and radioactive waste, which includes its final management, that is, disposal.

As for the further management of disused sealed radioactive sources and radioactive materials/waste in Montenegro, special attention is paid to this issue within the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021, with the Action Plan for the period 2017-2021. In order for Montenegro to make a decision on future steps in the management of disused radioactive sources and radioactive waste, in the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021 with the Action Plan for the period 2017-2021, it was pointed out that it is necessary that the Ministry of Ecology, Spatial Planning and Urbanism, in cooperation with the relevant institutions and in cooperation with the IAEA, prepares an **Analysis on the further management of disused sealed radioactive sources and radioactive waste**, before adopting a new strategic framework. The analysis should elaborate several options on the management of disused sealed radioactive sources and radioactive waste and, after considering them, propose the most acceptable options from the environmental, social and economic aspects. The most acceptable options from the Analysis will be an integral part of the future strategic or program framework.

Montenegro uses the opportunity firstly to inform that there is no liquid radioactive waste in Montenegro, nor authorized radiation practices in which it is created. Regardless of this fact, Montenegro takes a responsible approach to the management of radioactive waste, including waste that does not exist, and that may potentially appear in Montenegro one day. In this regard, Montenegro informs that the Ministry of Ecology, Spatial Planning and Urbanism has planned this activity through its Public Procurement Plan for 2022, planning the development of a Plan for the management of liquid radioactive waste, i.e. for the conversion of such waste into solid waste outside the borders of Montenegro or for export.

Montenegro does not expect significant amounts of new radioactive waste to be created for several reasons. As the first and most important, we mention the successfully established mechanism for returning the disused radioactive source to the supplier after the end of use. Furthermore, the control of shipments of various types of goods at border crossings during import, export and transit has been established, so the probability of creating significant amounts of radioactive waste is very low.

Article 17 of the Rulebook on the method of collecting, keeping, processing and storing radioactive waste, among other things, defines the waste acceptance criteria for receiving radioactive waste into storage and is an integral part of the Safety Report for radioactive waste storage.

Radioactive waste that does not meet the waste acceptance criteria cannot be stored in the central storage, according to the Rulebook on the method of collecting, keeping, processing and storing radioactive waste.

Based on the documentation and issued licences for the operation of the radioactive waste storage facility (construction, use, management licence for the radioactive waste storage facility) and based on the estimated amounts of radioactive waste generated in Montenegro, **it is estimated that the radioactive waste storage facility can be operational for at least 50 years**, **as emphasized in the Safety Report**, which was one of the conditions for obtaining the licence. After the expiration of this period, and depending on the state and amount of waste at that moment, a decision will be made on further steps - methods of dealing with radioactive waste. *This can be: extending the operational life of the existing warehouse for another 50 years, i.e. as far as the building can be stable, safe and secure for those uses; construction of a new storage or construction of a radioactive waste disposal site with decommissioning of the existing storage*. These issues will be dealt with in a separate document (Analysis of the further management of disused sealed radioactive sources and radioactive waste) which, in addition to considering all technical options, should also present a financial statement for each of the options individually.

Future changes to the licensing process

Taking into account the requirements of the standard GSR Part 3 - Protection against radiation and safety of ionizing radiation sources - basic international safety standards of the IAEA, other standards and publications of the IAEA and the provisions of the Directives of the Council of Europe, in the new draft law on protection against ionizing radiation, radiation and nuclear safety and security, a **graded approach was established** when defining the conditions for the performance of practices and/or activities, and a time limit for the validity of licences was given, which is a novelty in relation to the existing legal framework. This means that through the system of issuing

licences, the following were introduced into the legal system of Montenegro as part of the Draft Law: notification, registration and licensing, which was not the case until now. A special challenge in transferring the requirements of international standards and the acquis of the European Union into national regulations related, among other things, to the inclusion of plants with waste metal in the process of regulatory control. In this sense, close cooperation was achieved with all relevant entities in order to better standardize all requirements brought by international standards and the EU acquis, especially in the part of issuing various licences, and this process was preceded by two years of preparation and consultations with interested parties.

In order to achieve the mentioned requirements, it was necessary to define precise norms within the proposal of the Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, which will be additionally regulated through a set of rulebooks related to the process of issuing licences, primarily related to the application forms and exemption criteria.

4.1.4 Article 7 (2) (iii) Inspection supervision and assessment

Inspection supervision in the field of ionizing radiation protection, radiation and nuclear safety and security is performed by the ecological inspection of the Administration for Inspection Affairs according to annual plan and programme, announced or unannounced, under the Inspection Supervision Law ("Official Gazette of the Republic of Montenegro". No. 039/03, "Official Gazette of Montenegro", no. 076/09, 057/11, 018/14, 011/15, 52/16) and the Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16). The above legislation entitle inspectors to institute misdemeanour or criminal proceedings, as needed and based on assessment, if the license holder performs an activity that is not in accordance with the mentioned regulations.

For the purpose of more efficient work, the following internal inspection procedures have been developed and approved:

- Procedure for transport of radioactive material;
- Procedure for inspection when removing radioactive lighting rods (dismantling and removal of radioactive lighting rods, transport and response in emergencies);
- Procedure for inspection of sealed sources of radiation (fixed devices for calibration, detection and other devices);
- Procedure for control of radioactive sources which are used in industrial radiography;
- Procedure for control of nuclear medicine;
- Procedure for inspection of X-ray machines;
- Procedure for control of mobile sealed radioactive sources of radiation;
- Procedure for inspection of stationary devices which are used for industrial radiography;
- Procedure for inspection of linear accelerator;
- Procedure for inspection of gamma irradiators;

- Procedure for inspection of open radioactive sources of radiation which are used in industry;
- Procedure for inspection of radiotherapy; and
- Procedure for inspection of radioactive waste storage.

In the framework of the regional project supported by the European Commission through the pre-accession instrument of European Union, IPA multi-beneficiary project "Further strengthening of the nuclear regulatory bodies of Albania, North Macedonia, Bosnia and Herzegovina, Serbia, Kosovo (under UNSCR 1244/1999) and Montenegro", advices for updating existing procedures has been given.

4.1.5 Article 7 (2) (iv) Enforcement of applicable regulations and terms of licences

Pursuant to provisions of the Inspection Supervision Law ("Official Gazette of the Republic of Montenegro", no. 039/03, "Official Gazette of Montenegro", no. 076/09, 057/11, 018/14, 011/15, 52/16), Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16), Law on Administrative Procedure ("Official Gazette of Montenegro", no. 056/14, 020/15, 040/16, 37/17), Misdemeanour Law ("Official Gazette of Montenegro", no. 001/11, 006/11, 039/11, 032/14, 43/17, 51/17) and on the basis of the Criminal Code of Montenegro ("Official Gazette of the Republic of Montenegro", no. 070/03, 013/04, 047/06, "Official Gazette of Montenegro", no. 040/08, 025/10, 073/10, 032/11, 064/11, 040/13, 056/13, 014/15, 042/15, 058/15, 44/17, 49/18), in the period **from 15 June 2019 to 15 July 2022**, inspector for protection against ionizing radiation:

- conducted **447 inspection supervisions** to control persons performing radiation activities;
- issued **215 Decisions** regarding taking of certain measures and actions to remove established irregularities, measure the level of individual external exposure of professionally exposed persons, conducting health examination of professionally exposed persons who work in a radiation zone, dosimetry examinations, control of working environment and measuring for the purpose of implementation of the programme of quality assurance and control for sources of ionizing radiation, as well as obtaining the Decision on fulfilment of prescribed conditions for using sources of ionizing radiation;

Regarding administrative procedure and a possibility to appeal which, inter alia, reflect independence of work of the competent institution, the Law on Administrative Procedure envisages that any individual or organisation whose right has been violated by the decision of the first-instance authority (in this case the Environmental Protection Agency or Administration for Inspection Affairs) may appeal to the second-instance authority (Ministry of Ecology, Spatial Planning and Urbanism) within 15 days from the date of the Decision. Appeal is the general remedy for instituting the administrative procedure at the second instance. The second-instance procedure may not be instituted without filing an appeal, nor can it be implemented ex officio. The above Law regulates general administrative procedure and unless special regulations in the field of environment protection regulate these matters, provisions of this Law shall apply in the decision-making process.

By order of the inspection, radioactivity checks are carried out on goods during importation in cooperation with LLC "Center for Ecotoxicological Research" and the Institute for Ferrous Metallurgy JSC Nikšić, in such a way that certain types of goods are controlled for radioactivity at the invitation of the inspection, and on the basis of legal acts. Every time a certain shipment of scrap metal appears at the border crossings, the inspection visits the border crossings as necessary, as well as during regular controls. In the event that an increased level of radiation is detected during the control of certain goods, the authorized person secures the location and informs the inspection, which immediately goes to the spot and, together with the customs authorities, return the goods to the owner of the shipment. In the period from 15 June 2019 to 15 July 2022, a total of **157,454 controls on radioactivity were carried out for the import/export or transit of metals, metal products and raw materials, as construction products** (73,644 performed by LLC "Center for Ecotoxicological Research" and 83,810 by the Institute for Ferrous Metallurgy JSC Nikšić), according to the Control List and the List of Goods Subject to Radioactivity Control.

Based on the fact that the application of ionizing radiation is complex and that its improper use can lead to endangering human health and the environment, it is necessary to constantly work on professional training and periodic verification of the professional competence of exposed persons, as well as employees in competent institutions, including in the ranks of inspection service. Emphasizing the importance of constant improvement of employees, this norm is an integral part of the new Draft Law on protection against ionizing radiation, radiation and nuclear safety and security. In addition, it is regulated that the costs of conducting professional training for employees from competent state institutions are provided from the budget of Montenegro.

Regarding the training plan for inspectors, as well as other employees from the competent institutions that make up the regulatory body in the field of protection against ionizing radiation, the Strategy for protection against ionizing radiation, radiation safety and radioactive waste management envisages the adoption of a special professional training program in the field of radiation and nuclear safety and security and protection against ionizing radiation, which could be adopted on a multiyear basis, in accordance with the recommendations of the International Atomic Energy Agency (IAEA).

It is important to point out that the professional qualification and periodic verification of the professional qualification for the implementation of ionizing radiation protection measures for all other persons, who perform radiation operations and/or activities or are connected with ionizing radiation, will be carried out by a legally authorized person on the basis of the Professional Training Framework Program and periodic professional qualification checks, which will be an integral part of the Rulebook on professional training, which should be adopted by the Ministry of Ecology, Spatial Planning and Urbanism, with the previously obtained opinion of the state administration body responsible for education and the state administration body responsible for health.

Until the preparation of a multiyear training plan, ionizing radiation protection inspectors will continue with continuous training provided by the International Atomic Energy Agency and the European Commission, as well as on the basis of cooperation within the framework of signed bilateral agreements.

4.2 Article 8 Regulatory body

„1. Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7 of this Convention, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.
2. Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organisation concerned with the promotion or utilisation of nuclear energy.“

The national regulatory body for ionizing radiation protection, radiation and nuclear safety and security is structured within the Ministry of Ecology, Spatial Planning and Urbanism, Environmental Protection Agency, Administration for Inspection Affairs and Ministry of Interior. A clear division of responsibilities is provided under the Decree on State Administration Organization and Manner of Work adopted by the Government of Montenegro. Inter-institutional cooperation is regulated by the State Administration Law.

According to the Decree on State Administration Organization and Manner of Work, the Ministry of Ecology, Spatial Planning and Urbanism, among others, performs tasks relating to creating policies and legislation, drafting and adoption of by-laws, for all aspects of ionizing radiation protection and radiation safety, and radioactive waste management. Also, it leads the policy of international cooperation, concluding of international treaties, following up on international standards, negotiations, coordination and implementation of international conventions and agreements, monitoring process of accession to the European Union, harmonization with international standards, regulations and recommendations, etc.

Ministry of Ecology, Spatial Planning and Urbanism coordinates other competent institutions at the national level, as an umbrella institution that leads policy in this area and that reports to the European Commission and the International Atomic Energy Agency on various aspects in this area, including the negotiation process for membership in the European Union, reporting on the implementation of Council directives in this area, as well as reporting on the implementation of international legal instruments.

The Law on Environment, the Law on Ionizing Radiation Protection and Radiation Safety and the Decree on State Administration Organisation and Manner of Work provide that expert and related administrative activities in the field of ionizing radiation protection and radiation safety should be performed by the Environmental Protection Agency (issuing licences, systematic examination of radioactivity in the environment, keeping central register-database, etc.). The Environmental Protection Agency issues licences for trading in sources of ionizing radiation and radioactive material, for performing radiation activity, for performing temporary radiation activity, licence to manage radioactive waste storage, we well as licences to legal entities providing protection against radiation, all under the Law on Ionizing Radiation Protection and Radiation Safety.

The Ministry of Interior has the Directorate for Protection and Rescue which, within its scope of work, Division for risk management establishes a database for dangerous goods under provisions of the Law on Transport of Dangerous Goods, which provides that the

Ministry of Interior shall issue compliance for transport of radioactive material, which is furnished to the Environmental Protection Agency for the purpose of issuing licences.

In the case of accidents that may cause a state of emergency (state of emergency) in the country, the Ministry of Interior is responsible. At the national level, a Coordination Team for Protection and Rescue was established, and for the territories of municipalities - municipal teams for protection and rescue. The Coordination Team is headed by the Prime Minister, and the members are the Director of the state administration body for protection and rescue and the Ministers of the Ministries (the Ministries of the environment, health, social welfare, agriculture, defense, transport, the ministry of foreign affairs, etc.). The coordination team manages the activities of participants of protection and rescue during the implementation of established tasks. Operational coordination of the activities of protection and rescue participants is carried out by the Operational Headquarters for Protection and Rescue, headed by the head of the state administration authority responsible for protection and rescue. The operational headquarters operationally coordinates the implementation of measures and activities and procedures for protection and rescue and cooperates with the bodies of neighboring countries responsible for management and coordination in protection and rescue and assesses the degree of threat and the possibility of a state of emergency. In these activities, in addition to the Ministry of Interior - Directorate for Protection and Rescue and the Environmental Protection Agency, the following participate: Ministry of Defense - General Staff of the Army of Montenegro, Ministry of Health, (Clinical Center of Montenegro, Health Centers, Emergency Center, Institute for Public Health); and LLC "Center for Ecotoxicological Research".

The Ministry of Interior (Directorate for Protection and Rescue) issues approvals for Plans at the local level (municipal and corporate), which must be harmonized with the National Action Plan in the event of a radiation accident. In addition to the above, the Ministry of Interior issues approvals for Protection Plans for mandatorily protected facilities in accordance with the Law on the Protection of Persons and Property ("Official Gazette of Montenegro", No. 043/18).

With the adoption of the Law on Amendments to the Law on Inspection Supervision, the Administration for Inspection Affairs was established, which includes the largest number of inspection services, including the environmental inspection, which is the competent inspection for the implementation of the provisions of the Law on Protection against Ionizing Radiation and Radiation Safety.

In addition to the above institutions, the legislation and regulations concerning trade and control under the Law on Foreign Trade, Law on Control of Export of Dual-Use Products, Law on Foreign Trade in Weapons and Military Equipment are implemented by Ministry of Economic Development and Tourism, Ministry of Defense, Police Administration and Customs Administration of Montenegro and competent inspection services.

By decision of the Director of the Agency, on 24 April 2012, the Advisory Committee for Protection against Ionizing Radiation and Radiation Safety was formed as an expert and advisory body. The Advisory Committee, among other things, participated in giving: recommendations on the procedure for issuing licences for activities of protection against ionizing radiation; opinions on laws and by-laws; opinions regarding medical exposures to ionizing radiation; recommendation for the systematization of workplaces in the field of radiation protection; opinions on the necessary training and improvement

of personnel in the field of protection against ionizing radiation; opinions when issuing more complex licences that require a special safety analysis; opinions on the program of systematic examination of radioactivity in the environment; opinions regarding international conventions in the field of protection against ionizing radiation and radiation safety, etc.

As the mandate of the Advisory Committee has expired by measure 16 from the Action Plan of the Strategy for protection against ionizing radiation, radiation safety and management of radioactive waste for the period 2017-2021, it is proposed to re-elect or appoint new members of the Advisory Committee.

State institutions, which constitute the national regulatory body in the field of radiation and nuclear safety and security and protection against ionizing radiation, have a program Budget and are financed from the Budget of Montenegro, in accordance with the Law on the Budget, which is adopted annually, and the Law on budget and fiscal responsibility.

The national regulatory body in the field of radiation and nuclear safety and security and protection against ionizing radiation has autonomy in carrying out its tasks. The tasks of all four competent institutions are divided in accordance with the Decree on the organization and operation of the State Administration, as well as through the parent laws on protection against ionizing radiation and radiation safety, inspection supervision, transportation of dangerous substances, protection and rescue, and protection of persons and property.

As for independence of regulatory bodies, we point out that pursuant to the Decree on State Administration Organisation and Manner of Work, supervision of legality and suitability of work of administration authorities is performed by Ministries (in this case the Ministry of Ecology, Spatial Planning and Urbanism supervises the Environmental Protection Agency). In performing supervision, the Ministry: suspends acts adopted outside administrative procedure when they are contrary to the law and other regulations and proposes to the Government to abolish or annul them; gives proposals for appointing and dismissing heads of independent administration authorities whose work it supervises; requests reports and notifications of particular matters under the competence of administration authorities; gives expert guidelines, clarifications, instructions and advice for application of regulations under the competence of administration authorities; gives assessment of the situation regarding progress reports; defines individual tasks of administration authority; indicates weaknesses and illegalities in the work of administration authority and gives proposals for overcoming them; warns administration authority of observed work irregularities, initiates suspension of the administrative authority whose work it supervises and performs other control of work and actions of administrative authority, in accordance with regulations.

Also, in accordance with the Decree on State Administration Organisation and Manner of Work, supervision of the legality and suitability of work and legality of administrative acts for individual administrative fields under the competence of the **Administration for Inspection Affairs** is conducted by the Ministries competent for a particular administrative field (supervision of administrative acts of ecological inspection is performed by the Ministry of Ecology, Spatial Planning and Urbanism).

Supervision of coordinated work of inspections of the Administration for Inspection Affairs is performed by the Government, through the Ministry of Public Administration.

Montenegro represents a small system with limited use of radioactive sources and sources of ionizing radiation, and the formation of an independent state administration body is not sustainable at this time.

Regarding influence of, for example, budget control, mechanisms have been put in place to control spending of approved annual budget, primarily through the Law on Budget and Fiscal Accountability, Law on Public Procurement, and through the system of inspections of the State Audit Institution, which controls all spending units. Also, control mechanisms have been put in place separately within each institution in which internal audit control is in place.

Regarding reporting obligation, competent institutions report to the Government of Montenegro once a year about the progress achieved in all fields they are responsible for, **and all document are publicly available**. In addition, the Environmental Protection Agency reports to the Ministry of Ecology, Spatial Planning and Urbanism on its work, as appropriate, while the Administration for Inspection Affairs reports to the Ministry of Public Administration.

In four competent institutions (Ministry of Ecology, Spatial Planning and Urbanism, Ministry of Interior, Environmental Protection Agency and Administration for Inspection Affairs), a total of **six civil servants are employed** in the field of protection against ionizing radiation and radiation safety.

In addition to one employee (graduate physicist) in the Ministry of Ecology, Spatial Planning and Urbanism, two lawyers from the Directorate for Ecology also participate in the drafting of the legal framework, who monitor other segments of the environment.

The Environmental Protection Agency employs three (3) officers in the Department for Radiological and Nuclear Safety and Security and Protection from Ionizing and Non-Ionizing Radiation.

One (1) inspector is employed in the Administration for Inspection Affairs for protection against ionizing radiation.

One (1) employee is employed in the Ministry of Interior (Directorate for Protection and Rescue).

Aware of the complexity and obligations, especially those that will be brought by the future Law on Protection against Ionizing Radiation, Radiation and Nuclear Safety and Security, it is necessary to plan certain financial resources to strengthen the capacities of the Ministry of Ecology, Spatial Planning and Urbanism, the Environmental Protection Agency, the Administration for Inspection Affairs, the Ministry of Interior, as well as other inspection services, in accordance with the obligations especially from the European agenda, in order to enable the full implementation of the regulations, especially bearing in mind that in these institutions, mostly the same employees also deal with protection against non-ionizing radiation.

The Program of Accession of Montenegro to the European Union 2022-2023 within the framework of the negotiating chapter 15 - Energy (adopted at the session of the Government of Montenegro on 26 January 2022, pages 107 and 108), as well as in accordance with the Roadmap for the fulfillment of the closing benchmarks for the temporary closure of negotiations in the Negotiating Chapter 15 - Energy (adopted at

the session of the Government of Montenegro on 9 December 2021, pages 8 and 9) which are aligned with the Negotiating Position for Chapter 15 - Energy, the area of Nuclear Safety and Radiation Protection, the employment of officials is foreseen in the Ministry of Ecology, spatial planning and urbanism (2), the Environmental Protection Agency (5), the Administration for Inspection Affairs (3) and the Ministry of Interior (1).

4.3 Article 9 Responsibility of the licence holder

„Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility.“

The primary responsibility for safe and secure management of radioactive sources, including radioactive waste management, rests on the holder of the license for performing radiation activity and the holder of the license for radioactive waste storage management, pursuant to the provisions of the Law on Ionizing Radiation Protection and Radiation Safety (“Official Gazette of Montenegro”, no. 56/09, 58/09, 40/11, 55/16). The provisions therefore cover also the responsibility to ensure a safe and secure handling of disused sealed radioactive sources. High activity sealed radioactive sources are returned to the manufacturer/supplier or they are kept stored in central storage facility when restitution to the manufacturer/supplier is not possible. The Chapter VI of the Law on Ionizing Radiation Protection and Radiation Safety (“Official Gazette of Montenegro”, no. 56/09, 58/09, 40/11, 55/16), Articles 37-40, includes provisions defining radioactive waste management, whereas more detailed conditions for radioactive waste management are defined by the respective secondary legislation. The Law also stipulates that license holders shall report to the Environmental Protection Agency any change related to the operation of ionizing radiation sources, termination of use of ionizing radiation sources as well as the manner of their keeping and storage and any change in relation to prescribed conditions based on which the license has been issued (Article 25).

4.4 Article 10 Priority to safety

“Each Contracting Party shall take the appropriate steps to ensure that all organisations engaged in activities directly related to nuclear installations shall establish policies that give due priority to nuclear safety.“

Provisions of Article 37 of the *Law on Ionizing Radiation Protection and Radiation Safety* (“Official Gazette of Montenegro”, no. 56/09, 58/09, 40/11, 55/16) stipulate general safety requirements that need to be met during the process of radioactive waste management. These requirements are described in detail by license holders (for performing radiation activity and/or for radioactive waste storage management) in the Safety Report, which is only one part of the documentation necessary for meeting the conditions for obtaining the license for radioactive waste storage management. Established requirements include: analysis and description of the storage facility site (demography, topography, meteorology, hydrology, geology, seismicity, impact of surface and groundwaters, environmental protection), technical characteristics of the storage facility, analysis of safety of the storage facility, working conditions and restrictions, methods and devices for ionizing radiation protection, radioactive waste data, plans, measures and procedures in case of a radiation accident, quality assurance

and control programme, overview of measures of physical security of the storage facility, description of organization of regular operation of the storage facility. The Law also requires that all applied protection measures for radioactive waste management are harmonized with internationally recognized criteria, standards and guidelines. Moreover, Article 37 stipulates that radioactive waste generated during the performance of radiation activity should be as low as possible by activity and by volume.

Article 27 of the *Law on Ionizing Radiation Protection and Radiation Safety* ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16) stipulates that the holder of the license for performing radiation activity has the obligation to establish and implement the Quality assurance and control programme for ionizing radiation protection measures, depending on the radiation activity performed by such license holder, i.e. depending on activities carried out by the legal entity in the area of ionizing radiation protection.

Quality assurance programmes are established by the LLC "Centre for Ecotoxicological Research"- (CETI). CETI is a well-equipped and well-organized institution that carries out most of the radioactivity level measurements in Montenegro, and it has both human resources and organisational capacities to manage the radioactive waste storage facility. CETI has set up one of the best equipped laboratories in the region with full calibration standards for all measurement techniques, it has experienced staff for radiological measurements, decontamination, measurements for radiological surveillance of the workplaces in radiotherapy nuclear medicine, radiation protection and has established the Quality Management System certified in accordance with ISO 9001:2000 standard and the laboratory accredited according to the ISO/IEC 17025 standard.

The Centre for Ecotoxicological Research LLC takes part in international inter-laboratory comparative research and tests and in implementation of national and regional projects supported by the IAEA, many of which are related to radioactive waste management.

It is important to underline that the Centre for Ecotoxicological Research LLC developed all necessary procedures, both for the purpose of obtaining the license and for the purposes of management of disused sealed radioactive sources, including radioactive lightning rods. The Centre for Ecotoxicological Research LLC also developed all necessary procedures for the conditioning of disused sealed radioactive sources.

For the purpose of implementation of laws and secondary legislation in this area, the Environmental Protection Agency developed the guidance for applicants for licenses defined by the Law, available on the Agency's web page.

Also, the Strategy for Ionizing Radiation Protection, Radiation Safety and Radioactive Waste Management for the period 2017-2021 with the Action Plan for the period 2017-2021, unlike the previous Strategy, it devotes a **special chapter to radiation and nuclear safety and to safety and security culture.**

The Strategy emphasizes that in order to adequately protect the health of occupationally exposed persons, persons responsible for protection against ionizing radiation (radiation protection officers), employees of the competent state and administrative bodies in the field of protection against ionizing radiation, as well as the population, it is necessary to constantly work on improving the safety culture. Namely, a safety culture is a set of traits, attitudes, and behaviors that are established in application of ionising radiation sources, both at the institution level and at the level of individuals contributing to safety, as well as those who are active participants in carrying out certain activities with sources of ionizing radiation within the institution, as well as others that may be

directly or indirectly threatened by possible accidents or incidents occurring within the institution where the sources of ionizing radiation are used. The Strategy emphasizes the importance of adhering to the fundamental principles of safety culture (in accordance with the IAEA SF-1 standard "Basic Safety Principles"), which are: individual and collective commitment in the field of radiation and nuclear safety; responsibility for all levels of safety, both for the individual and for the whole institution; constantly raising awareness of what it means and what contributes to the implementation of a safety culture at all levels.

It is also important to emphasize that for the first time, the Strategy for the Protection against Ionizing Radiation, Radiation Safety and Management of Radioactive Waste for the period 2017-2021 with the Action Plan for the period 2017-2021 also deals with the concept of security culture. Specifically, it is emphasized that security culture represents the establishment of certain characteristics and attitudes, both at the individual and institutional levels that regulate issues related to: protection against theft or illegal seizure of nuclear or radioactive materials, malicious activity in nuclear or radiation facilities and malicious action during transport of nuclear or radioactive materials. Considering that the responsibility of the state in this matter is the greatest, relevant state institutions should establish a regulatory and legal framework that requires all institutions that are users of ionizing radiation sources, which store or transport radioactive or nuclear materials, to establish all measures that ensure their security through licencing process.

Taking into account the COVID-19 pandemic, the time period for the implementation of activities from the Action Plan of the Strategy has been extended.

Every new radioactive source found, the owner of which is unknown, **represents a successful step in improving the protection of human health and the protection of the environment** from the harmful effects of ionizing radiation that may come from radioactive sources that are not under regulatory control or supervision. Accordingly, any activity in terms of finding and adequate management (storage or return to the owner if the owner is subsequently found) of a source without an owner represents an important link in the system of protection against the harmful effects of ionizing radiation. In this regard, Montenegro emphasizes **good practice related to found radioactive sources and materials that were outside regulatory control,** i.e. without owners, which are shown in table 2.

Table 2: Data on discovered illegal shipments of radioactive material

No.	Radionuclide	Type of source/material found	Quantity	Activity (MBq)	Owner/ Shipping	Date of discovery	Date of storage
1.	$Eu^{152/154}$	Radioactive lightning rod	1 pcs	2620	Recycling center	26/4/2013	19/6/2014
2.	$Eu^{152/154}$	Radioactive lightning rod	1 pcs	1078	Jugoprodukt	20/10/2010	20/6/2013
3.	Ra^{226}	Instrument with radium paints	1 pcs	/	Jugoprodukt	20/10/2010	15/8/2013
4.	Ra^{226}	Instrument with radium paints	29 pcs	/	Otpadaš		24/10/2013
5.	Ra^{226}	Instrument with radium paints	33 pcs	/	De An	2014	09/2/2015
6.	Ra^{226}	Instrument with radium paints	14 pcs	/	De An	2014	9/2/2015
7.	Ra^{226}	Instrument with radium paints	13 pcs	/	SS Alga	2019	19/6/2019/

Note: In addition to the above-mentioned data, the International Atomic Energy Agency is also provided with data marked as confidential, which are reported as part of the implementation of the Law on Ratification of the Agreement between Montenegro and the International Atomic Energy Agency on the Application of Safeguards in Connection with the Treaty on Non-Proliferation of nuclear weapons, the Additional Protocol to the Agreement between Montenegro and the International Atomic Energy Agency on the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons and the Protocol to the Agreement between Montenegro and the International Atomic Energy Agency on the Application of Safeguards in Connection with the Treaty on non-proliferation of nuclear weapons (Official Gazette of Montenegro - International Treaties, number 16/10 of 28 December 2010).

In case of discovery of a source without an owner (*orphan source*), Article 37 of the Law on Protection from Ionizing Radiation and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16) established that the costs of their storage will be provided from the budget of Montenegro. In accordance with the current regulations, the Administration for Inspection Affairs through the environmental inspection conducts inspection supervision, i.e. controls the source until its safe storage, finds the owner, if possible, and undertakes prescribed legal measures against him/her. Therefore, in the case of finding an orphan source, if the inspector cannot establish the ownership, he/she files a misdemeanor or criminal complaint against an Unknown Person and orders the measure of storing the source in a radioactive waste storage facility.

If the owner is determined subsequently, the state will request compensation for storage costs from the owner, and the inspection will apply punitive measures. If the owner is immediately determined, then the inspector orders either misdemeanor or criminal measures and issues an order to place the lost source in a safe place with the owner or in a radioactive waste storage, if the source is no longer intended to be used. In most cases, it is impossible to find the owner of a lost resource.

It is important to point out that Montenegro does not produce radioactive sources, and therefore, after the source is returned to the producer, it is under the jurisdiction of another country and its management is regulated by the legal framework of that country.

Therefore, in Montenegro there is in practice a good organization when a source without an owner (orphan source) is discovered, however, it is necessary to improve the system in that part and formalize it by establishing an official **Team for discovering orphan sources**. The Ministry of Ecology, Spatial Planning and Urbanism, in cooperation with the relevant institutions, will form a Team for the discovery of orphan sources, which will be obliged to prepare a Work Plan. After that, in the discovery of orphan sources, it is necessary to develop a formal procedure for the involvement of certain state bodies and institutions, such as for example: Police Administration, Customs Administration, Administration for Inspection Affairs, Forensic Center of Montenegro, Environmental Protection Agency, ITDB contact person, National Security Agency, Ministry of Ecology, Prosecutor's Office, etc.

Regarding the **management of disused sealed radioactive sources**, Montenegro, in the previous period 2012-2020, **achieved great progress related to the management of disused sealed radioactive sources.** Namely, in the territory of Montenegro in the 1960s and 1970s, radioactive lightning rods were installed as protection against large-scale lightning strikes. They were installed in residential buildings, schools, kindergartens, health institutions, farms and factories. These radioactive lightning rods (RAG) protect a larger area only if there is a radioactive source of a certain power in them. Therefore, radioactive sources must be regularly replaced with new ones in order to maintain their effectiveness in terms of lightning protection. These lightning rods no longer represented adequate protection against lightning strikes, because the area of protection they protected decreased due to their reduced activity. Today, they are no longer installed in the world, neither in our country, and in some countries their use is prohibited, such as in Montenegro by Article 19 of the Law on Protection from Ionizing Radiation and Radiation Safety. Although they are too weak to perform their function, radioactive lightning rods represent a radiological risk for the environment, which is why they should be removed or replaced by other technologies (electronic lightning rods, etc.). Although, while installed, radioactive lightning rods do not pose any danger to people living in buildings, however, there is always the possibility that either by mistake, bad weather or intentional removal, radiation sources may come into contact with the population and the environment. That is why it was decided to remove the radioactive lightning rods in Montenegro and store them in the radioactive waste storage facility built for that purpose.

In 2009, the Ministry of Ecology, Spatial Planning and Urbanism and the Environmental Protection Agency nominated a project approved by the European Commission as part of the IPA 2009 Nuclear Safety and Radiation Protection Program **"Management of sealed radioactive sources including radioactive lightning rods and strengthening the effectiveness of the regulatory infrastructure in the area of radiation protection in Montenegro, North Macedonia and Kosovo** (according to UNSCR 1244/1999)", with a total value of 1,350,000 euros. The aim of the project was to reduce radiological risks arising from unsafe and unsecure management of sealed radiation sources and radioactive lightning rods in Montenegro, the Republic of North Macedonia and Kosovo (according to UNSCR 1244/1999). The implementation of the project started in 2011 and ended in 2014. The project had four phases of implementation. The first two phases of the project, for which the implementing agency was ENCO from Austria, on behalf of a consortium composed of representatives of the Nuclear Safety Administration of Slovenia, the Institute for Occupational Safety from Ljubljana and the State Institute for Radiological and Nuclear Safety of Croatia, were successfully implemented and were aimed at creating preconditions for the implementation of the last phase of the project (enactment of regulations, readiness of institutions to

implement all provisions of regulations and establish a licensed storage of radioactive waste).

The project included the removal of radioactive lightning rods from the territory of 17 municipalities of Montenegro and the capital Podgorica (Bar, Berane, Bijelo Polje, Budva, Danilovgrad, Herceg Novi, Kotor, Kolašin, Mojkovac, Nikšić, Plav, Pljevlja, Plužine, Rožaje, Tivat, Ulcinj and Žabljak), strengthening the effectiveness of the management of sealed radioactive sources for all competent institutions and entrepreneurs/legal entities, as well as raising awareness in the field of radiation protection in Montenegro. According to the decision of the European Commission, the last two phases of the project were implemented by LLC "Center for Ecotoxicological Research" during 2013. After the signing of the Agreement between CETI and the European Commission, the equipment was acquired and all the necessary conditions were created for the realization of the III and IV phases of the project. Those phases of the project related to the procurement of the necessary equipment and the removal, dismantling and storage of radioactive lightning rods in the storage of radioactive waste, as well as the collection, transport and storage of disused sealed radioactive sources from temporary storage facilities in the territory of Montenegro to the storage of radioactive waste.

In accordance with the Agreement signed with the European Commission on 29 March 2013, LLC "Center for Ecotoxicological Research" was obliged, beginning from 1 August 2013, to remove, transport and store radioactive lightning rods in the storage of radioactive waste, as well as to collect, transport and store all disused sealed radioactive sources from temporary storage facilities on the territory of Montenegro. The value of the signed contract is EUR 454,000 and the deadline for the implementation of the project is 12 months. The project was completed in April 2014 by sending the last Report to the European Commission.

The Ministry of Ecology, Spatial Planning and Urbanism and the Environmental Protection Agency were the main supervisors of the legal compliance of all activities during the preparation of the Contract and they played this role during the implementation of the Project. The Agency, as well as the Administration for Inspection Affairs - Environmental Inspection, carried out control and supervision with the aim of ensuring that all relevant safety regulations related to: removal, transport and storage of radioactive sources are fully fulfilled. The Ministry of Interior (Directorate for Protection and Rescue) was also involved in the process of monitoring the implementation itself, which, together with the aforementioned institutions and the European Commission, monitored the implementation of this important and demanding project, in accordance with the competences of the Directorate relating to the supervision over the implementation of: the Law on Protection and Rescue, the Law on Transportation of Hazardous Materials and the National Action Plan in the Event of a Radiation Accident.

Within this project, **a total of 8,470 disused sealed radioactive sources and materials were collected, including radioactive lightning rods, compasses fire/smoke detectors with radioactive isotope**, which were safely and securely stored in the radioactive waste storage. It is extremely important to emphasize that all activities performed during the implementation of the Project were done in a safe and secure manner and in accordance with: **Quality Assurance Program (QAP), Safety Report, Standard Operating Procedures and ALARA principle**. All sources of radiation were removed/taken over with the written consent of their owners, that is, holders of the sources. Pictures 1 and 2 show the removal of radioactive lightning rods from hotels in Petrovac and Bečići (Budva municipality).

It is important to point out that after removing the radioactive lightning rods, the installation of electronic lightning rods was done in parallel.

Picture 1: Removal of the radioactive lightning rod from the Hotel Castellastva in Petrovac

Picture 2: Removal of the radioactive lightning rod from the Hotel Mediteran in Bečići

Safe and secure management of radioactive radiation sources is a basic activity that achieves the preservation and protection of life and health of current and future generations and the protection of the living and working environment. It is important to point out that Montenegro implemented the most demanding phase of the project with its own capacities - removal, transportation and storage of radioactive lightning rods and disused sealed radioactive sources.

Montenegro, with the support of the IAEA, continued activities on the management of radioactive sources, i.e. their conditioning. Within the interregional project INT9176 "Strengthening the control of disused sealed radioactive sources in the Mediterranean" a **total of 1,367 different sealed sources were conditioned**, of which: 71 radioactive lightning rods, 27 disused radioactive sources from industry and 1,269 calibration sources. In addition, what is very important is that the employees of LLC "Center for Ecotoxicological Research"-CETI, whose work activities are related to the storage of radioactive waste, acquired the necessary knowledge and experience when it comes to the process of conditioning disused sealed radioactive sources.

Pictures 3, 4, 5 and 6 show a Photo Story taken from the official homepage of the International Atomic Energy Agency.

Picture 3.

Picture 4.

Picture 5.

Picture 6.

In the storage of radioactive waste, it is necessary to additionally perform conditioning of the two remaining sealed radioactive sources of cesium 137Cs through cooperation with the International Atomic Energy Agency.

Montenegro continuously deals with the management of disused radioactive sources, fire/smoke detectors that contain a radioactive isotope, radioactive waste, as well as orphan sources. So in the **period from 1 October 2017 to 31 July 2020** LLC "Center for Ecotoxicological Research" **collected, safely and securely stored 344 fire detectors, 13 orphan sources and 7 disused radioactive sources taken from various practices, as shown in Table No. 3.**

Table 3: Collected and stored sources for the period from 1 October 2017 to 31 July 2020.

No.	Type of radioactive waste/disused radioactive source	Radionuclide	Number of pieces of radiation source	Unit activity (GBq)	Total activity (GBq)
1.	Radioactive smoke detectors	Am^{241}	344	0,003	0.9
2.	Sources used in science and research	Ni^{63}	4	0.55	1.1
		Kr^{85}	2	0.46 and 0,9	1,36
3.	Sources used in medicine	Sr^{90}	1	0,21	0,21
4.	Control of scrap metal/orphan sources	Ra^{226}	13	-	-

Regarding the further management of disused sealed radioactive sources and radioactive materials/waste, it is necessary for the Ministry of Ecology, Spatial Planning and Urbanism, in cooperation with relevant institutions, to prepare an Analysis on the further management of disused sealed radioactive sources and radioactive waste, before adopting a new strategic framework.

4.5 Article 15 Radiation protection

"Each Contracting Party shall take the appropriate steps to ensure that in all operational states, the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits."

Primary responsibility for performing radiation activity, including radioactive waste management rests with the holder of the licence for performing radiation activity and holder of the licence to manage radioactive waste storage, in accordance with provisions of the *Law on Ionizing Radiation Protection and Radiation Safety* ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16).

Article 4 of the *Law on Ionizing Radiation Protection and Radiation Safety* ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16) regulates basic principles which are applied in performing radiation activities. The basic principle **justification of application** provides that each radiation activity should be planned and implemented in such manner that the use of ionizing radiation sources provides more benefit than the overall damage. The principle **optimization of ionizing radiation protection provides that** each radiation activity must be performed in such manner that the exposure to ionizing radiation shall be as low as objectively possible, considering economic and social factors, while the principle concerning **limitation of individual exposure provides that** radiation activity must be planned in such manner that the individual exposures shall always be under prescribed limits. Article 8 of the Law defines measures of ionizing radiation protection for the purpose of human life and health protection and environmental protection against harmful effect of ionizing radiation, while Articles 11 and 12 of the same Law regulate measurements for the purpose of ionizing radiation exposure level estimation and exposure limits, for professionally exposed persons, persons attending schools and performing scientific research, and population.

Limits in terms of exposure of professionally exposed persons and the population are set in more detail by several regulations, the most important being: *Rulebook on the limits of exposure to ionizing radiation* ("Official Gazette of the Federal Republic of Yugoslavia", no. 32/98) and the *Rulebook on the limits of radioactive contamination of the environment and decontamination procedures* ("Official Gazette of the Federal Republic of Yugoslavia", no. 9/99). These Rulebooks are harmonized with ICRP 60 recommendation of the International Commission on Ionizing Radiation Protection.

Holders of licences for performing radiation activities, who own radioactive sources or radioactive waste in a storage, perform these activities on the basis of issued licence and are obliged to comply with provisions of the *Law on Ionizing Radiation Protection and Radiation Safety* ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16), regulations and findings of regular inspection controls (supervision). This includes keeping sources in safe and secure conditions, thereby ensuring that doses for workers and population are below prescribed limits (which are in line with recommendations of the International Commission on Ionizing Radiation Protection - ICRP and EU Directives).

Pursuant to Article 9 of the Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", no. 56/09, 58/09, 40/11, 55/16), the Environmental Protection Agency prepares proposal of annual Programme of systematic examination of radioactivity in the environment, which is adopted by the Government of Montenegro on the proposal from the Ministry of Ecology, Spatial Planning and Urbanism. The Programme of systematic examination of radioactivity in the environment, which has been performed since 1999, is performed to establish presence of radionuclide in the environment and assess the level of exposure of the population to ionizing radiation in normal conditions, and in case of suspected radiation accident and during radiation

accident. **Due to the consequences of the COVID-19 pandemic and financial constraints, it was not implemented for 2021.**

The programme is prepared in accordance with the Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro". No. 56/09, 58/09, 40/11, 55/16), Decision on systematic examination of the radionuclide contents in the environment (Official Gazette of the Federal Republic of Yugoslavia 45/97), Rulebook on the limits of radioactive contamination of the environment and decontamination procedures ("Official Gazette of the Federal Republic of Yugoslavia", no. 9/99), Rulebook on the limits of exposure to ionizing radiation ("Official Gazette of the Federal Republic of Yugoslavia", no. 32/98), Rulebook on conditions to be fulfilled by legal entities for performing systematic examination of radionuclide in the environment ("Official Gazette of the Federal Republic of Yugoslavia", no. 32/98) and the Rulebook on intervention and derived intervention levels and measures of protection of the population, domestic animals and agriculture (veterinary medicine, crop production and water management) in case of emergency ("Official Gazette of the Federal Republic of Yugoslavia", no. 18/92 and "Official Gazette of Serbia and Montenegro", no. 1/2003 - Constitutional Charter). The systematic examination of radionuclide is performed in: the air, soil, rivers, lakes and the sea, solid and liquid precipitation, construction material, drinking water, provisions and feed, general use products. In addition, measuring includes intensity of absorbed dose of gamma (γ) radiation in the air and the level of radon exposure in residential areas is examined. The methods of measuring specific activities of radionuclide in samples from the environment include: gamma (γ) spectrometry, measuring total alpha (α) and beta (β) by gas proportional counter and measuring of Sr-90 by radiochemical separation by liquid scintillation counter, which are compliant with applicable methods and recommendations of the IAEA. The programme of systematic examination of radioactivity in the environment establishes places, time intervals, types and methods of systematic examination of radioactivity in the environment. Since it is impossible to plan places, time intervals, types and methods of systematic examination of radioactivity in the environment in case of suspected radiation accident and during radiation accident, certain funds are planned in this case for extraordinary radioactivity monitoring.

Costs of radioactivity monitoring (regular and extraordinary) and assessment of the level of exposure of the population to ionizing radiation are covered from the budget of Montenegro. A legal entity that the Environmental Protection Agency selects through public tender launched under the Law on Public Procurement ("Official Gazette of Montenegro", no. 42/11, 57/14, 28/15, 42/17) implements the Programme of systematic examination of radioactivity in the environment and is obliged to submit to the Agency the Report on monitoring radioactivity in the environment until 1 March of the current year for the previous year. In case of radiation accident, the legal entity is obliged to immediately notify the Agency. After that, the Environmental Protection Agency prepares consolidated Information about the environment condition with Proposal of measures for mitigating negative environmental impact with the Action Plan, which includes other segments of the environment, which is adopted by the Government of Montenegro on the proposal from the Ministry of Ecology, Spatial Planning and Urbanism. On the basis of the Conclusion of the Government of Montenegro, the Ministry and the Agency inform the Government about implemented activities from this Plan.

In the **period 8-9 June 2022** TAIEX regional workshop "Monitoring environmental radioactivity by sampling and laboratory analyses: current state and needs" was realized. It was organized by the Ministry of Ecology, Spatial Planning and Urbanism and

European Commission. The countries of the Western Balkans took part in the workshop. The aim of the regional workshop was: **analysis of the state** of environmental radioactivity monitoring; **recognition of the need** for further strengthening of administrative and technical capacities for the implementation of monitoring in the countries of the Western Balkans in accordance with the obligations from the EU acquis; **strengthening regional cooperation** and networking in the field of radiation and nuclear safety, as well as the **exchange of experiences**.

4.6 Article 16 Emergency preparedness

"1. Each Contracting Party shall take the appropriate steps to ensure that there are on-site and off-site emergency plans that are routinely tested for nuclear installations and cover activities to be carried out in the event of an emergency. For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.

2. Each Contracting Party shall take the appropriate steps to ensure that, in so far as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the states in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.

3. Contracting Parties which do not have a nuclear installation on their territory, in so far as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency."

4.6.1 Article 16 (1) Emergency plans and programmes

In addition to the Strategy for Disaster Risk Reduction with a Dynamic plan of activities for the implementation of the Strategy for the period 2018-2023, which was adopted by the Government of Montenegro at the session held on 21 December 2017, and the Law on Protection and Rescue ("Official Gazette of Montenegro", br., 13/07, 05/08, 86/09, 32/11, 54/16), the following secondary legislation were also adopted:

- Rulebook on the content and methodology of preparation, method of harmonization, updating and keeping studies of risk assessment on the basis of which protection and rescue plans are drawn up ("Official Gazette of Montenegro", no., 31/17) and
- Rulebook on the Detailed Content and Methodology of Drafting, Method of Harmonizing, Updating and Keeping Protection and Rescue Plans ("Official Gazette of Montenegro", no. 34/17).

Disaster Risk Reduction Strategy with a Dynamic plan of activities to implement the Strategy for the period 2018-2023 was developed by multisectoral working group of representatives of relevant institutions. The strategy aims at reducing and preventing the occurrence of new risks, strengthening the capacities of society and state institutions in response to various types of natural and technical technological hazards. The main objectives of this Strategy are: raising citizens' awareness and encouraging institutions to carry out activities in the field of disaster risk reduction; strengthening the capacity to manage risks from natural and other disasters; integrating disaster risk reduction in

policies, programs and plans, and creating safe and resilient communities. The Strategy specifically addresses nuclear and radiation accidents.

In addition to the Law on Protection and Rescue ("Official Gazette of Montenegro", no. 13/07, 05/08, 86/09, 32/11, 54/16), which constitutes a general legal framework for dealing with a natural disaster, technical and technological accidents and other accidents, there are other laws for which the area of protection and rescue is not the primary competence, but indirectly regulated certain issues that are important for this area.
This applies in particular to: Law on the Environment, Law on Ionizing Radiation Protection and Radiation Safety, Law on Waters, Law on Hydro-Meteorological affairs, Law on Forests, Law on Foreign Trade in Arms and Military Equipment, Law on Spatial Planning and Construction of Structures, Law on Occupational Safety and Health, Law on the Red Cross of Montenegro, etc.
For the protection and rescue system it is important the implementation of the National Sustainable Development Strategy until 2030 (NSSD), which is **Montenegro's long-term development strategy defining solutions for the sustainable management of four groups of national resources: human, social, natural and economic, as a priority overall sustainable development of Montenegrin society**. Objectively and integrally considering the sustainability of national development, Montenegro is among the first countries in the world to fully accept and integrate into the national system the requirements of the United Nations (UN) established by the UN Agenda for Sustainable Development by 2030.

Pursuant to the Law on Protection and Rescue protection and rescue plans **are developed at the three following levels: national, municipal and entrepreneurial.** Municipal and entrepreneurial plans are aligned with the National Action Plan in case of a Radiation Accident.

Holders of licenses for performing radiation activity and of the license for radioactive waste storage management, pursuant to the provisions of the Law on Protection and Rescue and the Law on Ionizing Radiation Protection and Radiation Safety, must have in place adequate action plans in case of emergency. **Approval of plans is given by the Directorate for Protection and Rescue** of the Ministry of the Interior, and it is submitted to the Environmental Protection Agency for the purpose of issuing a license for radiation activity.

The operational coordination of the response to a radiation and nuclear accident is carried out by calling the **Operational Headquarters for Protection and Rescue**, which is composed of representatives of relevant ministries, state bodies and state administration bodies appointed by the Government.

The territory of the municipality in the case of emergency events caused by excessive radiation is managed by the **Municipal Team for Protection and Rescue**, which consists of the president of the municipality, who is the leader of the team; the commander of the protection service who is the deputy head of the team and members: a representative of the organizational unit of the Ministry responsible for protection and rescue operations, elders of local government bodies, responsible persons in companies and other entities whose activities are related to protection and rescue from radiation and nuclear risks, as well as a representative of the Red Cross. Upon invitation, elders and representatives of other municipal bodies, representatives of other organizations and institutions, as well as experts in the field of protection and rescue, may participate in the work of the Municipal Team.

Holders of licenses for performing radiation activity and of the license for radioactive waste storage management, pursuant to the provisions of the Law on Protection and Rescue and the Law on Ionizing Radiation Protection and Radiation Safety, must have in place adequate action plans in case of emergency. Approval of plans is given by the (Directorate for Protection and Rescue) Ministry of the Interior, and it is submitted to the Environmental Protection Agency for the purpose of license issuing.

The national plan for action in the event of a radiation accident provides a good overview of preparedness and response for all aspects caused by emergency situations due to excessive radiation. This plan, along with other protection and rescue plans, is updated with the latest events and knowledge. The national plan for action in the event of a radiation accident aims to assess existing and future radiation and nuclear risks, establish a concept of organized action by state and other institutions in the event of a radiation and nuclear accident, prevent accidents by preventive action, mitigate the consequences, as well as develop the preparedness of appropriate state capacities and the entire social community in cases of their occurrence in the immediate and distant future.

In the Disaster Risk Reduction Strategy with the Dynamic Action Plan for the period 2018-2023, in chapter 3.2, "Nuclear and radiation accidents", it is stated that Montenegro is surrounded by nuclear power plants from Slovenia, Hungary, Bulgaria, Slovakia and others, and that it may be threatened by transnational leakage. There are three nuclear power plants within a radius of 600 km around the territory of Montenegro: Krško in Slovenia (one reactor with 696 MW of electrical power), Paks in Hungary (4 reactors, each with 475 MW of electrical power) and Kozloduy in Bulgaria (2 reactors each per 1000 MW of electric power). In addition to the above, there are several nuclear power plants at a distance of up to 1,000 km from the territory of our country, so that Montenegro can be affected by a cross-border nuclear accident. However, from the point of view of accident response planning, nuclear power plants located at a distance of less than 300 km are particularly significant. The territory located within a radius of 300 km from the nuclear power plants is a zone of application of protective measures in agriculture and restriction of the use of goods and foodstuffs. In the National plan for action in the event of a radiation accident, in which the IAEA's previous standard GSR Part 2 "Preparedness and response in the event of a radiological or nuclear hazard" was implemented, categories III, IV and V of the threat are included.

The National Plan addresses obvious and potential radiation risks and covers the following categories of threats:

- **Threats of III category** are events inside the facility (i.e. events requesting an urgent preventive action within the facility, but not likely to cause negative effects outside the facility; among other things, these are facilities (devices) where, in case of loss of protection, the external dose does not exceeds 100 mGy/h at a distance of 1m);

- **Threats of category IV** (e.g. external dose exceeding 100 mGy/h at a distance of 1m). These events are events that may require implementation of protection measures and activities on an unforeseeable location, especially during the transport and displacement of hazardous sources, such as radiographic radioactive sources, satellites with hazardous sources, waste iron treatment plants for, sources used in measuring and processing techniques…);

- **Threats of category V (**e.g. widespread contamination derived from categories I or II, facilities from abroad).

The National Plan also includes provisions offering a possibility of expert assistance to threatened institutions-organisation. The events of special interest, which are described in the National Plan are also all such events relating to nuclear-powered vessels or detonation of radiological dispersal devices - dirty bombs (RDD).

Regarding category V, the National Plan describes a case of widespread contamination from category I and II plants from abroad. In this case, the deposition of radionuclides can lead to exceeding doses and the application of protective actions (generic interevent levels GIL) and ingestion (generic action levels GAL) at large distances from category I and II facilities. The main focus is on the control of food, foodstuffs and other products and the implementation of extraordinary monitoring of the environment. In case of contamination on a wider scale, the population will receive information about the factual situation and measures to be taken, by the media (TV, radio, newspapers in accordance with Directive 59/2013 (formerly 89/618/Euratom)). The communication will be prepared by the Operational Headquarters - Protection and Rescue Directorate of the Ministry of Interior in coordination with the Environmental Protection Agency and the Ministry of Ecology, Spatial Planning and Urbanism, based on the data collected from the teams that monitor radioactivity.

Also, in the National Action Plan in the event of a radiation accident the case of importing contaminated food or materials is described as well. Contaminated food may result in exceeding the generic GAL action levels for restriction in food use. Uncontrolled or unknown use of contaminated iron (steel) and other products can lead to doses that exceed professional limits. Accidental inclusion of abandoned sources in metal waste can lead to significant adverse public reactions and consequences for the economy. In coordination with the relevant institutions (Customs Administration, Police Administration, Ministry of Agriculture, Administration for Food Safety, Veterinary and Phytosanitary Affairs, Ministry of Health, Institute for Public Health, etc.), the public will receive information about possible restrictions on food and other foodstuffs and products and about measures to be taken.

Intensive preparation of the new National Plan for protection and rescue from radiation and nuclear accidents is underway, the preparation of which is coordinated by the Ministry of Interior, Directorate for Protection and Rescue, into which GSR Part 7 "Preparedness and response in case of radiological or nuclear hazard" will be transposed.

It is important to point out that Montenegro has established **Operation Communication centre 112** (number for emergency interventions), whose officers use prescribed standard operating procedures (SOP).

As already emphasized in the previous reports on the implementation of obligations arising from the Convention on Nuclear Safety, the provision of Article 35 of the Law on Ionizing Radiation Protection and Radiation Safety ("Official Gazette of Montenegro", No. 56/09, 58/09, 40/11, 55/16) defines obligation of establishing early notification system for radiation accident which may lead to the state of emergency, which threatens or may threaten the territory of Montenegro.

In Montenegro, a network of six GDR stations has been installed on the territory of the municipalities: **Pljevlja, Nikšić, Berane, Herceg Novi, Bar and on the territory of the**

Capital City Podgorica, for which the Environmental Protection Agency previously selected suitable locations, in cooperation with the representatives of the municipalities, the Capital City of Podgorica and the Institute for Hydrometeorology and Seismology. However, it is necessary to additionally configure the station network in order to officially send the data to the European Radiological Data Exchange Platform (EURDEP).

The Ministry of Ecology, Spatial Planning and Urbanism and the Environmental Protection Agency have launched a new project approved by the European Commission, within the framework of which **three (3) additional stations will be delivered to Montenegro**, **in order to thicken the network**. Also, **additional equipment for on-line monitoring of radioactivity will be delivered for the Ministry, the Agency and the Center for Ecotoxicological Research (CETI) and the necessary training for officials will be conducted.** The procedure for the procurement of equipment by the European Commission is underway, after the tender procedure has been carried out. In the meantime, the Agency has **determined three new locations** (**Žabljak, Kolašin and Cetinje)** and completed all preparatory construction works for the installation of new stations and equipment.

The Ministry of the Interior, the Directorate for Protection and Rescue, since 2008 has been the 11th member of the ARGOS Consortium. **However, Montenegro has decided to replace the ARGOS system with the JRODOS system**, and for this purpose it will use, together with other Western Balkan countries, benefits of the European Commission project „Strengthening the Capacity of the Western Balkans for Radiological and Nuclear Emergency Preparedness and Response: Technical Support for Decision Making". In addition to Montenegro, the beneficiaries of this project will be: Albania, Bosnia and Herzegovina, Kosovo (according to UNSCR 1244/1999), North Macedonia and Serbia.

In March 2021, Montenegro established the JRODOS team, which will use the JRODOS system, which, together with the available radiological and meteorological data, models the eventual dispersion of radioactivity that may occur in the event of a nuclear accident. In accordance with the newly **emerging situation in Ukraine and possible radiation and nuclear threats**, the Ministry of Ecology, Spatial Planning and Urbanism, as the umbrella competent institution for the field of radiation and nuclear safety and security and protection against ionizing radiation, **formed a Working Team for the coordination and monitoring of the state of radioactivity.**

The system for risk assessment and forecasting (modeling) in the case of radiation and nuclear accidents (JRODOS), which represents real-time decision-making support, primarily contributes to timely action for the protection of human health and the environment, and at the same time represents an obligation of Montenegro within the Negotiating Chapter 15 – Energy, sub-area **Nuclear energy, nuclear safety and radiation protection**. In addition, the JRODOS system represents an obligation that completes the fulfillment of Articles 35, 36 and 38 of the Treaty on EURATOM. In addition to the above, the activities of JRODOS are foreseen in the Action Plan for the implementation of the Disaster Risk Reduction Strategy for the period 2018-2023 and the National Action Plan in the event of a radiation accident.

It should be emphasized that the Parliament of Montenegro adopted the Law on Confirmation of the Agreement between the European Atomic Energy Community (EURATOM) and non-member states of the European Union on the participation of non-member states of the European Union in the Community system for the early exchange of information in the event of a radiological emergency (ECURIE), after which it joined

the ECURIE platform by nominating a national contact point (OKC 112), a national correspondent and a national competent institution (Ministry of Ecology, Spatial Planning and Urbanism). In November 2018, the ECURIE exercise was held in which Montenegro participated for the first time. In March 2019, ECUIRE training was organized for the members of the OKC 112 Operational Communication Center, which was held by a representative of the European Commission from the Department for Radiation Protection (Radiation Protection & Nuclear Safety Emergency Preparedness & Environmental Monitoring) from Luxembourg.

In addition, **Montenegro has upgraded the special information** (so-called alert information) in a WebEcurie application, after which the first ECURIE communication test was performed on 6 June 2019.

Also, Montenegro is part of the International Nuclear Event Scale (INES), the Unified System of Information Exchange in Incidents and Emergencies (USIE) for early warning of incidents that include radioactive sources with potential transboundary impact.

In line with foreign policy priorities, Montenegro is strongly committed to maintaining international peace and security, combating organized crime, terrorism and the proliferation of weapons of mass destruction (WMD). This commitment has been recognized in numerous strategic documents, the Defense Strategy, the National Security Strategy, the Strategy for the Prevention and Suppression of Terrorism, Money Laundering and Terrorism Financing and in the Non-Proliferation Strategy of weapons of mass destruction (WMD), thereby translating foreign policy priorities into strategic commitments. As a Party of almost all the major international legal instruments in the field of preventing the spread of WMD, Montenegro is committed to fulfilling the obligations arising from them. Among other things, an appropriate normative - legal and institutional framework aimed at preventing non - state actors from owning, producing, transporting or using any type of WMD, or the means to deliver them, has been established. In addition, any activity that may contribute to the proliferation of WMD is prohibited and an effective system of control of foreign trade in arms, military equipment and dual-use goods has been established.

Following the adoption of the Action Plan for the Implementation of UN Security Council Resolution 1540, which aims to prevent the WMD from taking possession of non-state actors, primarily terrorists, for the 2014-2018 period, in January 2015, the National Coordination Body for the implementation of the Action Plan was established.
The work of the mentioned body was coordinated by the Ministry of Foreign Affairs. In May 2016, the Action Plan for the Protection against Chemical, Biological, Radiological and Nuclear Threats and Risks (CBRN) for the period 2016-2020 was adopted, which together with the Action Plan for Resolution 1540 provides an effective basis for the prevention and suppression of the spread of WMD, as well as for responding to potential CBRN accidents.
Montenegro is also a Party of the Hague Code of Conduct for Ballistic Missile Proliferation (HCOC); Global Nuclear Terrorism Initiatives (GICNT); Proliferation Security Initiatives (PSIs) and the International Partnership against Impunity for the Use of Chemical Weapons. Montenegro applied for membership in the Vasenar Arrangement on Conventional Arms Export Control.

In addition, Montenegro is a Party to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BTWC) and the Convention on the Prohibition of the

Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC).

In September 2016, the Government of Montenegro adopted the WMD Non-Proliferation Strategy for the period 2016-2020. The overall objective of the Strategy is to prevent Montenegro from participating in the dissemination of the WMD, and it is envisaged that this objective will be achieved through the implementation of individual activities: preventing the illegal development, procurement, production, trade and use of the WMD; strengthening prevention; a preparedness to respond quickly and effectively to a possible crisis and to strengthen international cooperation, each of which contains measures for implementation. With the adoption of the Strategy, the national framework has been completed, i.e. the necessary components have been completed and the conditions for successful coping with the proliferation of WMD have been created, so the emphasis is now on their comprehensive implementation.

The Action Plan for the implementation of the Strategy, adopted by the Government of Montenegro at its session held in June 2017, is based on the Action Plan for the Implementation of UN Security Council Resolution 1540, as well as on the CBRN Action Plan. The National Coordination Body for the WMD Non-Proliferation Strategy, established by the Government of Montenegro, at its session held in July 2017, is in charge to monitor the implementation of the WMD Strategy and the Action Plan for its implementation, the 1540 Action Plan and the CBRN Action Plan.

In order to streamline national architecture and its efficiency, the **WMO National Non-Proliferation Coordinating Body** has replaced the National Coordinating Body to monitor the implementation of the UN Security Council Resolution Action Plan for 1540, as well as the National Implementation Team of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC).

In addition to the 1540 Action Plan and the Chemical Weapons Convention, the National Authority for WMD Non-Proliferation has expanded its scope of competence, so it covers the implementation of the HBRN Action Plan, the Action Plan for the Implementation of the Strategy, as well as activities and obligations in the domain of the Biological Weapons Convention (BWC), the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and other numerous obligations arising from this domain (Montenegro is a member and actively participates in international initiatives for the non-proliferation of WMD), and for which there are no established bodies in charge of monitoring the implementation.

The preparation of the Roadmap for the prevention, suppression and protection against chemical, biological, radiological and nuclear threats and risks (CBRN), prevention and suppression of the proliferation of weapons of mass destruction and the means for their delivery, and prevention of their reaching the hands of non-state actors (2022-2027), is ongoing. Its preparation is coordinated by the Ministry of Foreign Affairs, and it will replace the WMD Strategy.

Guide for actions in case of accidents with dangerous material[1] has been prepared for members of services who respond first to accidents. The instructions provided in the

[1] According to Article 37 of the Protection and Rescue Act, the Directorate for Protection and Rescue of the Ministry of Interior establishes programmes for equipment and development of the protection and

Guide include lists of dangerous material of the most recent recommendations of the United Nations, and of other national and international regulations. The Guide is primarily intended as assistance to those arriving first to the place of accident to be able to identify quickly specific threats imposed by particular substances and protect themselves and other citizens in the initial phase of such incident. Also, Instructions provide general information about public security measures in a particular situation, as well as information concerning emergency isolation at the place of incident. They also list special precautionary measures in case of an incident involving fire, leakage of or exposure to chemical or radioactive material. The agreements signed in the field of protection and rescue against natural and other disasters contribute to and facilitate substantially the cooperation with countries in the region and beyond in case of a disaster.

One of the most important activities of the Ministry of Interior - Directorate for Protection and Rescue in the reporting period was the establishment of the National Platform for Disaster Risk Reduction, as a standing forum for exchange of opinions, expressing views, giving proposals and presenting achievements that contribute to minimizing risks of disasters in all areas of human activity.

On 15 December 2021, the document - **Disaster Risk Assessment of Montenegro** was completed, in the preparation of which 94 experts from various state bodies, administrative bodies, academic and NGO communities participated. The drafting of the document was **supported by the European Commission, and the drafting was coordinated by the Ministry of Interior, Directorate for Protection and Rescue**. The risks of a radiological and/or nuclear accident were assessed and developed (Assessment of the Disaster Risks of Montenegro, pp. 825-889) by a group of experts in which participated representatives of the Ministry of Interior, Ministry of Ecology, Spatial Planning and Urbanism, the Agency for Environmental Protection and Center for Ecotoxicological Research. The assessment covers three scenarios, the loss of a sealed high-activity radioactive source (category 2) and a transboundary accident caused by the Paks Nuclear Power Plant (NPP) accident in Hungary. However, nuclear security risks in the sense of nuclear terrorism have not been developed, and they should be developed within a separate document.

4.6.2 Article 16 (2) Information of the public and neighbouring States

Although Montenegro does not have nuclear installations, **there is a system in place for informing the public and neighbouring countries in the case of a nuclear accident**. A detailed description of responsibilities and manner of management is provided in the National Plan of Action in the Case of a Radiation Accident. **The preparation of a new National Plan for protection and rescue from radiation and nuclear accidents is underway.**

rescue system in Montenegro, gives instructions for management in protection and rescue and proposes measures to those participating in protection and rescue

Also, as a contracting party to the Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention) and the Protocol on Strategic Environmental Impact Assessment in a Transboundary Context (SEA Protocol) and the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Issues (Aarhus Convention), Montenegro is exchanging information with neighbouring countries whose installations might have environmental impact in a transboundary context. In addition, the ECURIE platform will also be used to inform the population and countries in the region, especially the EU Member States.

Regarding international legal instruments in this field, it is important to point that Montenegro is a contracting party to the Convention on Early Notification of a Nuclear Accident ("Official Gazette of the Federal Republic of Yugoslavia - International Treaties", no. 015/89-3) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency ("Official Gazette of the Federal Republic of Yugoslavia - International Treaties", no. 004/91-29).

Ratified agreements in the field of protection and rescue from natural and other disasters significantly contribute to and facilitate cooperation with countries in the region and beyond, in the event of disasters. In this regard, Montenegro is a contracting party and signatory to 21 agreements and memoranda in the field of protection and rescue from natural and other disasters, which are listed in Annex 2 of this Report.

4.6.3 Article 16 (3) Emergency preparedness for Contracting Parties without nuclear installation

Based on the Decree on State Administration Organisation and Manner of Work, Law on Protection and Rescue, the Ministry of Interior is the institution responsible, inter alia, for preparing, adopting, implementation and updating of national plans for all types of hazards (including nuclear-radiological hazard), as defined by the Strategy for Disaster Risk Reduction with a Dynamic plan of activities for the implementation of the Strategy for the period 2018-2023.

Plans at local level (municipal and operational) must be harmonized with the National Plan, which is verified by issuing of approval by the Ministry of Interior (Directorate for Protection and Rescue). The National Plan of Action in Case of a Radiation Accident was prepared and adopted by the Ministry of Interior in March 2010 in accordance with the IAEA methodology and recommendations, and the development process involved experts of all competent institutions of Montenegro. The Ministry of Interior coordinates implementation of the National Plan of Action in Case of a Radiation Accident through the Coordination Team. As mentioned, the drafting of the new National Plan is underway.

For emergencies that are not defined by the national scale of values, the preparation of responses to radiation and nuclear accidents is carried out by calling the Operational Headquarters for Protection and Rescue, composed of: Ministry of the Interior - Directorate for Protection and Rescue, Environmental Protection Agency, Ministries of Defense - General Staff of the Army of Montenegro, Ministry of Health (Clinical Center of Montenegro, Health Centers, Emergency Center, Institute for Public Health); LLC "Center for Ecotoxicological Research", Police Directorate, Custom Directorate, Bureau of Hydrometeorology and Seismology, Water Directorate, Food Safety and Phytosanitary Affairs Directorate, Red Cross and others.

The Directorate for Protection and Rescue participates every year in exercises which test the capacities for preparation and response to emergencies in the country and in the region. Annual programme contains types of exercises, goals and participants.

During 2018 and 2019, ConvEX exercises (ConveX 1 and ConveX 2) were conducted by the IAEA with contact persons of member countries using the USIE platform.

5. Section D: Activities envisaged to improve safety

As stated in the Second National Report on the Implementation of the Obligations arising from the Convention on Nuclear Safety, **Montenegro indicated that most of the planned activities were implemented.**

In the following period, it is necessary **to continue activities on the implementation of open challenges and suggestions.**

In the following period, in the field of protection against ionizing radiation, radiation and nuclear safety and security, it will continue with the dedicated implementation of the obligations defined by the Convention on Nuclear Safety, the strategic and legal framework of Montenegro.

The strengthening of administrative and technical capacities will continue.

Activities on the management of disused radioactive sources and radioactive waste will continue, and work will be continued on raising the awareness of license holders about their responsibilities, as well as raising the awareness of citizens, through the organization of round tables, workshops and education on safety and security culture.

6. Section E: ANNEX 1 – List of international agreements/memorandums to which Montenegro

has acceded in the field of radiation and nuclear safety and security, nuclear liability and protective measures

1. Law on Ratification of the Vienna Convention on Civil Liability for Nuclear Damage ("Official Gazette of the Federal Republic of Yugoslavia – International Treaties", No. 005/77);
2. Law on Ratification of the Convention on the Physical Protection of Nuclear Material ("Official Gazette of the Federal Republic of Yugoslavia – International Treaties", No. 009/85-309);
3. Decree on Ratification of the Convention on Early Notification of a Nuclear Accident ("Official Gazette of the Federal Republic of Yugoslavia – International Treaties", No. 015/89-3);
4. Convention on Assistance in the Event of a Nuclear Incident or Radiological Emergency, Vienna ("Official Gazette of the Federal Republic of Yugoslavia – International Treaties", No. 004/91-29);
5. Law on Ratification of the Treaty on Non-Proliferation of Nuclear Weapons ("Official Gazette of Socialist Federal Republic of Yugoslavia – International Treaties", No. 010/70-313);
6. Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space and Under Water ("Official Gazette of the Federal Republic of Yugoslavia – International Treaties", No. 011/63-580);
7. Decree on Ratification of the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and Ocean Floor and in the Subsoil Thereof ("Official Gazette of the Federal Republic of Yugoslavia – International Treaties", No. 033/73-957);
8. Comprehensive Nuclear Test Ban Treaty with the Protocol ("Official Gazette of Serbia and Montenegro – International Treaties", No. 4/04-3);
9. Agreement on the Privileges and Immunities of the International Atomic Energy Agency (in force since 30 October 2006, by succession since 21of March 2007);
10. Statute of the International Atomic Energy Agency ("Official Gazette of the Socialist Federal Republic of Yugoslavia – International Treaties", No. 001/58-64);
11. Law on Ratification of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management ("Official Gazette of Montenegro – International Treaties", No. 02/10 of 16 March 2010);
12. Law on Ratification of the Agreement between Montenegro and the International Atomic Energy Agency for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons, Additional Protocol to the Act on Ratification of the Agreement between Montenegro and the International Atomic Energy Agency for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons and the Protocol to the Agreement between Montenegro 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 Montenegro – International Treaties", No. 16/10 of 28 December 2010);
13. Law on Ratification of the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage ("Official Gazette of Montenegro – International Treaties", No. 16/10 of 28 December 2010);

14. Law on Ratification of the Convention on Supplementary Compensation for Nuclear Damage (“Official Gazette of Montenegro – International Treaties”, No. 3/11 of 16 March 2011);
15. Law on Ratification of the Convention on Nuclear Safety (“Official Gazette of Montenegro – International Treaties”, No. 003/2015 of 26 March 2015);
16. Law on Ratification of Amendments to the Convention on the Physical Protection of Nuclear Material (“Official Gazette of Montenegro - International Treaties”, No. 004/16 of 25 March 2016;
17. International Convention for the Suppression of Acts of Nuclear Terrorism (“Official Gazette of Serbia and Montenegro - International Treaties”, No. 02/06-3);
18. Law on Ratification of the Agreement between the European Atomic Energy Community (EURATOM) and non-member states of the European Union on the participation of non-member states of the European Union to the Community System for the Early Notification and Information Exchange System for Radiological Emergencies. (ECURIE) (“Official Gazette of Montenegro - International Treaties” , No. 002/17 of 21 March 2017);
19. Law on Ratification of the Joint Protocol on the Application of the Vienna Convention and the Paris Convention (“Official Gazette of Montenegro - International Treaties”, No. 012/18 of 31 December 2018);
20. Law on ratification of the Protocol of 2005 to the Protocol for the suppression of unlawful acts against the safety of fixed platforms located on the continental shelf ("Official Gazette of Montenegro - International Treaties", No. 009/19 of 17 October 2019);
21. Law on ratification of the Protocol of 2005 to the Convention for the suppression of unlawful acts against the safety of maritime navigation ("Official Gazette of Montenegro - International Treaties", No. 009/19 of 17 October 2019).

7. Section F: ANNEX 2 - List of international agreements/memorandums to which Montenegro has acceded in the field of protection and rescue

1. Agreement between the Government of Montenegro and the Council of Ministers of Bosnia and Herzegovina on Cooperation in Protection against Natural and Civil Disasters ("Official Gazette of Montenegro - International Treaties", No. 14/12) - entered into force on January 14, 2013 Montenegro - International Treaties", No. 1/13);
2. Agreement between the Government of Montenegro and the Government of the Republic of Croatia on cooperation in protection against natural and civil disasters ("Official Gazette of Montenegro - International Treaties", No. 2/13);
3. Agreement between the Government of Montenegro and the Government of the Republic of North Macedonia on cooperation in protection against natural and other disasters ("Official Gazette of Montenegro - International Treaties", No. 7/09);
4. Agreement between the Government of Montenegro and the Government of the Hellenic Republic on cooperation in protection against natural and other disasters ("Official Gazette of Montenegro - International Treaties", No. 15/10);
5. Agreement between the Government of Montenegro and the Government of the Republic of Slovenia on cooperation in the field of protection against natural and other disasters ("Official Gazette of Montenegro - International Treaties", No. 11/10);
6. Agreement between the Government of Montenegro and the Government of the Republic of Serbia on cooperation in protection against natural and other disasters ("Official Gazette of Montenegro - International Treaties", No. 9/11);
7. Agreement between the Government of Montenegro and the Government of the Slovak Republic on cooperation and mutual assistance in case of natural and other disasters ("Official Gazette of Montenegro - International Treaties", No. 3/13) - entered into force on 2 July 2013 („Official Gazette of Montenegro - International Treaties", No. 6/13);
8. Agreement between the Government of Montenegro and the Cabinet of Ministers of Ukraine on cooperation in the field of protection against natural and other disasters ("Official Gazette of Montenegro - International Treaties", No. 9/14);
9. Agreement between Montenegro and the European Union on the participation of Montenegro in the Civil Protection Mechanism of the European Union ("Official Gazette of Montenegro - International Treaties", No. 3/15);
10. Memorandum of Understanding on the Institutional Framework for the Initiative for Disaster Prevention and Preparedness in Southeast Europe ("Official Gazette of Montenegro - International Treaties", No. 8/15);
11. Memorandum of Understanding of the Ministry of Internal Affairs - Directorate for Emergency Situations and the Ministry for Emergency Situations of the Republic of Armenia in the field of prevention and response to emergencies ("Official Gazette of Montenegro - International Treaties", No. 7/14);
12. Memorandum of Understanding between the Ministry of Interior - Directorate for Emergency Situations and the Presidency of the Council of Ministers of the Republic of Italy - Civil Protection Service ("Official Gazette of Montenegro - International Treaties", No. 7/14);
13. Memorandum of Intent in the field of prevention and liquidation of emergency situations between the Ministry of Civil Protection of the Russian Federation,

emergency situations and liquidation of the consequences of natural disasters and the Ministry of Internal Affairs of Montenegro;

14. Protocol on Explosive Remnants of War to the Convention on the Prohibition or Restriction of the Use of Certain Conventional Weapons with Excessive Traumatic Effect or Action Irrespective of the Purpose ("Official Gazette of Montenegro - International Treaties", No. 4/16);
15. Agreement between the Government of Montenegro and the Council of Ministers of the Republic of Albania on cooperation and mutual assistance in emergency situations ("Official Gazette of Montenegro - International Treaties", No. 11/18);
16. Agreement between the Government of Montenegro and the Government of the Republic of Turkey on Cooperation and Mutual Assistance in the Field of Emergency Situations ("Official Gazette of Montenegro - International Treaties", No. 5/19);
17. Decision on publishing the Agreement between the Government of Montenegro and the Government of the Republic of Azerbaijan on Cooperation in the Field of Emergency Situations ("Official Gazette of Montenegro - International Treaties ", No. 10/19);
18. Decision on the publication of the Agreement between the Government of Montenegro and the Government of the Republic of Bulgaria on cooperation in case of disasters ("Official Gazette of Montenegro - International Treaties ", No. 7/20);
19. Memorandum of Understanding between the Government of Montenegro and the ITF Institution for Strengthening Human Security of the Republic of Slovenia in the field of mine action, destruction of conventional weapons and physical security and stockpile management;
20. Memorandum of Cooperation on the implementation of the project "Cross-border fire protection“;
21. Memorandum of Understanding between the Ministry of Interior of Montenegro and the Norwegian People's Aid regarding the implementation of the Land Clearing Program from areas contaminated with cluster munition remnants.