

REPUBLIC OF MOLDOVA
NATIONAL AGENCY ON REGULATION OF NUCLEAR
AND RADIOLOGICAL ACTIVITIES



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

Chisinau, 2016

**THE FOURTH NATIONAL REPORT
OF THE REPUBLIC OF MOLDOVA
FOR THE SEVENTH REVIEW MEETING
OF THE CONVENTION ON NUCLEAR SAFETY**

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A. GENERAL DISPOSITIONS

It is a well-known fact that safety in general is one of the primary aims and pillars for sustainable development of all the states. Nuclear safety is not a concern only of national interest, since consequences could have trans-boundary effects. Therefore, the international community has to express the interest in this issue, and actively participate through different international instruments which are aimed to regulate or coordinate nuclear safety activities.

The Republic of Moldova attaches great importance to nuclear safety and sustains the policy of the International Atomic Energy Agency (IAEA) in this field.

The Convention on Nuclear Safety entered into force for Republic of Moldova on 26 February 1998. The Republic of Moldova also is a party to the Convention on Physical Protection of Nuclear Material, its Amendments, Convention on Early Notification in Case of Nuclear Accident, Convention on Assistance in Case of Nuclear Accident or Radiological Emergency, Vienna Convention on Civil Liability for Nuclear Damage, Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. In addition, Republic of Moldova since 2005 is part of nonbinding international acts - Code of Conduct on the Safety and Security of Radioactive Sources and its Associated Guidance on the Import and Export of Radioactive Sources.

The Republic of Moldova promotes strong non-proliferation policy, and is a party to the Non-Proliferation Treaty. Therefore, the Republic of Moldova ratified the Comprehensive Safeguards Agreement with SQP. The amendment to SQP was accepted through Law No. 142 of 14 July 2011 on ratification of Agreement by exchange of letters between Republic of Moldova and the IAEA. SQP amendment is in force since 1 September 2011 (INFCIRC/690/Mod.1 and Corr.1).

The Additional Protocol to the Safeguards Agreement with the IAEA was accepted and signed on 14 December 2012, ratified in the Parliament by Law No. 80 of 12 April 2012 and promulgated by President by Law No. 63-VII of 10 May 2012. The

Additional Protocol entered into the force for Republic of Moldova on 1 June 2012 (INFCIRC/690/Add.1).

The Republic of Moldova has no nuclear power plants and research reactors and has no plans to introduce in the near future nuclear energy as an option for power generation or any research instrument.

Regardless of the fact that the Republic of Moldova has no nuclear facilities according to the definition given in the Convention on Nuclear Safety, our country is surrounded by nuclear power plants in the neighbouring countries: Romania and Ukraine. It means that Moldova has to take the appropriate steps for the preparation and testing of emergency plans.

Ionizing radiation such as X-ray equipment and radioactive sources are used in various scientific, medical, biological and industrial applications. All applications are under the State control and supervision by the National Agency for Regulation of Nuclear and Radiological Activity (*further National Agency*).

B. ARTICLE-BY-ARTICLE REPORT

Article 6. Existing nuclear installations

Each Contracting Party shall take the appropriate steps to ensure that the safety of nuclear installations existing at the time the Convention enters into force for that Contracting Party is reviewed as soon as possible. When necessary in the context of this Convention, the Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact.

There are no nuclear facilities according to the definition given in the Convention on Nuclear Safety in Republic of Moldova.

Article 7. Legislative and Regulatory Framework

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

The legislative and regulatory framework shall provide for:

- (i) the establishment of applicable national safety requirements and regulations;*
- (ii) a system of licensing (authorization) with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a license;*
- (iii) a system of regulatory inspection and assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licenses;*
- (iv) the enforcement of applicable regulations and of the terms of licenses, including suspension, modification or revocation.*

The basic law for establishing the regulatory framework for Safety, the Law on the safe conduct of nuclear and radiological activities, was approved on 2006 and reviewed in 2012.

The Law on the safe conduct of nuclear and radiological activities (further - Law no. 132 of 8 June 2012) has the following objectives:

- a) to prevent the proliferation of nuclear weapons, materials and equipment associated with the proliferation of nuclear weapons and other explosive devices containing radioactive material;
- b) to establish mechanisms to ensure the safety of nuclear and radiological activities and maintain them at an adequate level in all sectors where ionising radiation sources are used;

- c) to prevent the unauthorised conduct of nuclear and radiological activities;
- d) to protect personnel, the public, property and the environment against the adverse impact of ionising radiation, in accordance with international standards concerning radiation protection and the safety of nuclear and radiological activities;
- e) to prevent the misappropriation and illegal trafficking of nuclear and radioactive materials and physical protection of nuclear and radiological facilities.

Article 6. of the Law no. 132 of 8 June 2012 establishes regulatory functions, as follows:

- a) authorisation;
- b) development and approval of the framework of laws and regulations in the field of nuclear and radiological safety and security;
- c) keeping records of ionising radiation sources and nuclear materials;
- d) state inspections and oversight;
- e) implementing enforcement measures for breaches of current legislation;
- f) non-proliferation of nuclear weapons monitoring and compliance with international treaties.

Additionally, the Law no. 132 of 8 June 2012 (Chapters, IV and V) establishes the system of authorization, inspection and enforcement for all radiological activities within the country and in Chapter IX is describe The National Policy and Main Principles in Radioactive Waste Management.

All the regulations developed and approved by the Government, in order to implement the provisions of the Law no. 132 of 8 June 2012, are listed in Annex I to present report.

Article 8. Regulatory Body

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, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.

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 organization concerned with the promotion of nuclear energy.

According to the Article 8 of the Law no. 132 of 8 June 2012 on the safe conduct of nuclear and radiological activities, the regulatory body in the nuclear and radiological activities is the National Agency for Regulation of Nuclear and Radiological Activities.

Additionally, according to the Governmental Decision no. 458 of 24 July 2015, regarding the Regulation on the organization and functioning of the National Agency for Regulation of Nuclear and Radiological Activities, its structure and staff limit, the National Agency is the regulatory body in the field, and according to the Law no 41-XVI from 02 March 2006, regarding ratification of the Agreement between the Republic of Moldova and IAEA of the application the guaranties follow the NPT, is the responsible government body for it implementation.

Special provisions of the Article 9 (2) states effective separation between the functions of the regulatory body and those of any other body or organization concerned with the promotion, management and use of ionising radiation sources.

Article 10 of the Law no. 132 of 8 June 2012, states that the National Agency is an administrative authority established by the Government attached to the Ministry of the Environment, with the status of a legal entity, which has a stamp with the State Emblem image, name in the state language and treasury accounts.

Pursuant to current legislation, the National Agency has the necessary level of independence in the exercise of its functions as specified in this law. The structure and regulations of the National Agency is approved by the Government.

The National Agency financing is provided from the state budget and from other sources in accordance with legislation.

The mission and basic functions of the National Agency, are listed in Article No. 11 the mentioned above Law as follows:

- a) to develop and implement state policy in the nuclear and radiological sector, to consult public authorities in accordance with their areas of competence, to draw up the draft of national policies, national strategies and legal framework, their promotion according to the juridical procedure and measures adoption for the effective regulation of nuclear and radiological activities;
- b) to monitor the implementation and enforcement of the provisions of international treaties to which the Republic of Moldova is party and of national legislation governing this sector;
- c) to develop and propose, according to the established legal procedure and by article 7 of this law, legislative instruments and other statutory instruments governing this field;
- d) to keep the record of nuclear and radiological activities on the basis of notifications, their authorization on the basis of assessment of applications for radiological authorizations and compliance with requirements in terms of radiation protection, nuclear and radiation safety, security of nuclear and radiological facilities and nuclear guarantees;
- e) to conduct state inspections and oversight in order to check nuclear and radiological safety conditions and security conditions at nuclear and radiological facilities;
- f) to draw up certificates of inspection and issue the necessary stipulations, to elaborate and examine reports concerning infringements within the nuclear and radiological activities sector, and to take mandatory enforcement measures against individuals and legal entities;
- g) to ensure that the decision-making process in the regulation of nuclear and radiological activities is transparent;
- h) to issue and/or recognize security certificates for installations with ionising radiation sources (equipment, packaging, containers or means of transportation for radioactive sources, including radioactive waste) in accordance with this law;

- i) to certify or recognize nuclear and radiological experts by issuing level III permits to operate;
- j) to assess knowledge and to issue or recognize level I and II permits to operate issued by entities recognized by the National Agency to personnel operating in the nuclear or radiation sector and to radiation protection officers;
- k) to propose amendments and/or additions to statutory instruments when it is necessary to bring them into the line with international treaties and standards in this sector;
- l) to manage the National Register of Ionizing Radiation Sources and Authorized Individuals and Legal Entities;
- m) to provide assistance free of charge for the detection of orphan radioactive sources;
- n) to recognize the technical support organizations, national and international experts and staff certification and training institutes by adding them to the relevant register and publishing it on the webpage of the National Agency;
- o) to coordinate and monitor the implementation of international technical support projects for the nuclear and radiological safety and security sectors;
- p) to sign, as stipulated by law, bilateral or multilateral agreements with similar authorities in this field in third countries;
- q) to prepare and submit national reports to the competent international bodies in accordance with the international treaties to which the Republic of Moldova is a party;
- r) to participate as an integral part of the national response system in the event of a nuclear or radiation emergency;
- s) representation as the national regulatory body - the national point of contact with the IAEA pursuant to international nuclear and radiological treaties, with nuclear regulatory bodies in third countries.

Article 9. Responsibility of the License Holder

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

Article 48 of the Law no. 132 of 8 June 2012 states that authorization holder is obliged to take the precautionary measures stipulated by standards, regulations and rules concerning radiation protection, nuclear and radiation safety and security of nuclear and radiological facilities.

Additionally, Article 50 of the Law no. 132 of 8 June 2012 states the following responsibilities of the authorization holder:

- (1) breaches of the provisions of statutory instruments regulating nuclear and radiological activities shall incur disciplinary, civil, contravention or criminal liability, as applicable.
- (2) authorizations shall be fully liable for breaches of requirements concerning nuclear and radiation safety and security and for breaches of this law and other statutory instruments applicable to this sector.
- (3) unauthorised pursuit of nuclear and radiological activities or illegal trafficking of nuclear and radioactive materials, nuclear or radiological installations or facilities, explosive nuclear devices or components thereof which may cause harm to the public or environment shall trigger cessation of the activity, seizure or the enforcement of other measures provided for by law.
- (4) seized ionising radiation sources shall be kept at the expense of the authorised individual or legal entity at a safe location sealed off by the National Agency, in accordance with nuclear and radiation safety and security requirements, so as not to endanger the life and health of the public, cause radioactive contamination of

property, environment or facilitate illegal trafficking, until legal measures have been taken.

(5) the holder of the authorisation shall, in accordance with the Civil Code or Penal Code, be solely liable for caused damage during or after nuclear or radiation incidents or accidents, which have led to the death, injury or harm the health of one or more persons or the destruction, damage or temporary impossibility of any property item.

(6) Liability for damage caused to persons within the territory of the Republic of Moldova as a result of the transiting of nuclear material, nuclear or radiation incidents or accidents, which occur outside the territory of the Republic of Moldova, shall be enforced on the basis of the Convention on Civil Liability for Nuclear Damage of 21 May 1963, to which the Republic of Moldova is a party.

Article 10. Priority to Safety

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

The subject of the Law no. 132 of 8 June 2012 is the safe conduct of nuclear and radiological activities for exclusively peaceful purposes, in accordance with the obligations arising out of the international treaties to which the Republic of Moldova is a party.

The aims of the mentioned Law are:

- to prevent the proliferation of nuclear weapons, materials and equipment associated with the proliferation of nuclear weapons and other explosive devices containing radioactive material;
- to establish mechanisms to ensure the safety of nuclear and radiological activities and maintain them at an adequate level in all sectors where ionizing radiation

sources are used; - to prevent the unauthorized conduct of nuclear and radiological activities;

- to protect personnel, the public, property and the environment against the adverse impact of ionizing radiation, in accordance with international standards concerning radiation protection and the safety of nuclear and radiological activities;

- to prevent the misappropriation and illegal trafficking of nuclear and radioactive materials and to protect the security of nuclear and radiological facilities.

Article 11. Financial and Human Resources

Each Contracting Party shall take the appropriate steps to ensure that adequate financial resources are available to support the safety of each nuclear installation throughout its life.

Each Contracting Party shall take the appropriate steps to ensure that sufficient numbers of qualified staff with appropriate education, training and retraining are available for all safety-related activities in or for each nuclear installation, throughout its life.

These requests are included in the Article 20 of the Law No. 132 of 8 June 2012 according to which authorization shall be issued only if applicant fulfils the following conditions:

- demonstrate the professional qualifications by holding the relevant qualification certificates recognized by the National Agency and designate, by the way of an administrative decision, a person responsible for radiation protection;

- take measures to prevent and limit the consequences of nuclear or radiation incidents and accidents with possible adverse effects on the life and health of personnel, public environment, property of third parties or state assets, in accordance with the provisions of current legislation;

- ensure that personnel responsible for the safe operation of the installation hold a permit to operate for the relevant activity, in accordance with the provisions of this law;
- hold insurance or any other financial guarantee to compensate them for a possible damage; the amount, nature and stipulations of the insurance or other guarantee shall be in accordance with the international treaties to which the Republic of Moldova is party;
- ensure that the necessary measures are taken to prevent interference of any kind or to eliminate disruption due to any third parties in the decision-making process during the construction and operation of an installation or item of nuclear or radiological equipment;
- have an own financial fund adequate to decommission and manage radioactive waste generated by their own activity.

Article 12. Human factors

Each Contracting party shall take the appropriate steps to ensure that the capabilities and limitations of human performance are taken into account throughout the life of a nuclear installation.

Not applicable for the Republic of Moldova due to non-existence of nuclear installations.

Article 13. Quality Assurance

Each Contracting Party shall take the appropriate steps to ensure that quality assurance programs are established and implemented with a view to providing confidence that specified requirements for all activities important to nuclear safety are satisfied throughout the life of a nuclear installation.

Article 20 of the Law No 132 of 8 June 2012 establishes that all activities and practices shall be carried out by respects following requirements:

- establish and maintain, in their own activity, a nuclear and radiological activity quality assurance and control system approved by the National Agency;
- establish and maintain their own control system in accordance with requirements concerning radiation protection, nuclear and radiation safety, security of the facility and readiness for emergency intervention in the event of nuclear or radiation incidents or accidents, which may occur in respect of the installations or equipment and ionizing radiation sources.

Detailed requirements for QA programme need to be developed and approved.

Article 14. Assessment and Verification of Safety

Each Contracting Party shall take the appropriate steps to ensure that:

comprehensive and systematic safety assessment are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessment shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;

Verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of a nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.

There are safety assessment requirements in place for Radioactive Waste Management Governmental Decree No 388 from 26.06.2009 concerning of Radioactive Waste Management and for Medical use of radioactive sources. For other radiological activities Requirements have to be developed and approved.

Verification for safety of all ionizing radiation sources is done by the National Agency during the authorization procedure and inspection.

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 exceed prescribed national dose limits.

In conformity with the Article 49 of the Law No 132 of 8 June 2012 the authorized individuals and legal entities are obliged:

- to maintain nuclear and radiation safety, protection against ionizing radiation and the physical protection of nuclear and radioactive materials;
- to keep meticulous records of nuclear and radioactive materials and all ionizing radiation sources used or produced in their own activity;
- to comply with all of the requirements on their radiation authorization and report any deviations from the limits and requirements stated on the authorization to the National Agency;
- to conduct the activities for which they have been authorized;
- to devise their own system of requirements, regulations and instructions to ensure that the authorized activities are conducted without incurring risks of any kind.

Results of the state control and supervision performed by the Inspectorate of the National Agency confirm that Convention's requirement to keep radiation exposure to the workers, the public and the environment is in full compliance.

The limit on the effective dose for occupational exposure is 20 mSv in any single year. As the exception, a limit of 50 mSv per year, provided that the average annual dose over any five consecutive years, including the years for which the limit has been exceeded, does not exceed 20 mSv.

The limit on the effective dose for public exposure is 1 mSv in a year.

Article 16. Emergency Preparedness

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 the activities to be carried out in the event of an emergency.

For new nuclear installation above a low power level agreed by the regulatory body.

Each Contracting Party shall take the appropriate steps to ensure that, insofar 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.

Contracting Parties which do not have a nuclear installation on their territory, insofar 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.

The Article 49 of the Law No 132 of 8 June 2012 establishes that the authorized persons must have:

- an effective response plans to deal with design basis threats through interaction between the relevant departments in the event of nuclear or radiation emergencies;
- personnel who are prepared and trained for response activities;
- their own intervention plans for nuclear or radiation incidents or accidents;
- their own quality assurance and control system for the maintenance of nuclear or radiation safety and security in the activities conducted;
- a system for notifying the National Agency within the time-limits established by current statutory instruments of nuclear or radiation incidents or accidents which take place and cause harm to individuals or legal entities, economic losses and radioactive contamination of the environment, and of the possibility that a nuclear or radiation incident or accident may occur.

The preparedness and plans are periodically tested in the form of exercises. The ways for alerting the public and the Service of Civil Protection and Emergency Situations and neighbouring countries are in place.

There are bilateral agreements signed between the Republic of Moldova and Ukraine as well as the Republic of Moldova and Romania at the Governments levels.

Article 17. Sitting

Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:

for evaluating all relevant site-related likely to affect the safety of a nuclear installation for its projected lifetime;

for evaluating the likely safety impact of a proposed nuclear installation on individuals, society and the environment;

for re-evaluating, as necessary, all relevant factors referred to in sub-paragraphs (i) and (ii) so as to ensure the continued safety acceptability of the nuclear installation;

for consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the likely safety impact on their own territory of the nuclear installation.

Article 20 (g) of the Law no. 132 of 8 June 2012 states as a condition for authorization issuing that the applicant shall have a location for the nuclear or radiological installation or item of equipment, which satisfies technical requirements and current legal framework in the field of radiation protection and

nuclear and radiation safety, and public interests with regard to the non-contamination of water, air and soil, and which does not affect the operation of other installations (or facilities) located nearby. This location must be agreed on with the National Agency.

Article 18. Design and construction

Each Contracting Party shall take the appropriate steps to ensure that:

- i. the design and construction of a nuclear installation provides for several reliable levels and methods of protection (defence in depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;*
- ii. the technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;*
- iii. the design of a nuclear installation allows for reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.*

Not applicable, as Republic of Moldova doesn't have plan to construct a nuclear facility.

Article 19. Operation

Each Contracting Party shall take the appropriate steps to ensure that:

the initial authorization to operate a nuclear installation is based upon an appropriate safety analyses and a commissioning program demonstrating that the installation, as constructed, is consistent with design and safety requirements; operational limits and conditions derived from the safety analyses, tests and operational experience are defined and revised as necessary for identifying safe for operation;

operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;
procedures are established for responding to anticipated operational occurrences and to accidents;
necessary engineering and technical support in all safety-related fields is available throughout the lifetime of a nuclear installation;
incidents significant to safety are reported in a timely manner by the holder of the relevant license to the regulatory body;
programs to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organizations and regulatory bodies;
the generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.

Not applicable for the Republic of Moldova due to non-existence of nuclear installations.

C. ACTIVITIES TO IMPROVE SAFETY

Proceeding from the above reporting under the applicable articles for a country having no nuclear installations on their territory, we conclude that Republic of Moldova is in compliance with its obligations according to the Convention on Nuclear Safety. However, the main concern of the country remains still updating of the legislation in this area.

As a priority the Republic of Moldova set the transposing of the Council directive 2013/59/EURATOM of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation.