# Role of the IAEA in Coordination of International Cooperation in the Area of Nuclear Security: Noteworthy Joint Efforts and ProgramMEs of the Agency and the Russian Federation

N. KOZLOVA

Rosatom State Atomic Energy Corporation (Rosatom State Corporation)

Moscow, Russian Federation

Email: [NVKozlova@rosatom.ru](mailto:NVKozlova@rosatom.ru)

D. ULANOV

Rosatom State Atomic Energy Corporation (Rosatom State Corporation)

Moscow, Russian Federation

G. LEBEDEV

JSC “IUEC”

Moscow, Russian Federation

Email: [GALebedev@rosatom.ru](mailto:GALebedev@rosatom.ru)

**Abstract**

The paper emphasizes the IAEA capability to solve the vast set of tasks in the area of peaceful atomic energy use, emphasized the role of the Agency in coordination of international cooperation and technical assistance to the Member States upon their requests in arrangement of their national nuclear security systems and measures. Importance of these activities is undeniable and the paper supports that. The necessity to be guided by the commitment to accommodate the interests of the Member States to the fullest extent possible in order to use the human, financial and intellectual resources of the Agency Member States and the IAEA with the maximum efficiency, as well as appropriateness of flexibility and readiness for conversation in the common interests is noted. The paper expresses the necessity to comply with such basic principles of international cooperation in the area of nuclear security, which includes sole responsibility of any country for nuclear security within its territory; provision of assistance to any country only upon its request; protection of sensitive information and maintenance of non-legally binding status of the nuclear security documentation. The aim of the report is to enhance awareness of the IAEA Member States with regard to the available capabilities and programmes of the IAEA Secretariat. For such purpose, paper reviews various mechanisms and projects implemented by the IAEA Secretariat with the assistance of the Russian Federation. The report presents information on technical assistance and help provided by the Russian side to the partner states in the area of nuclear security in full accordance with the IAEA recommendations and approaches. The examples of current successful cooperation and plans for further interaction are provided. Paper specifies the basic principles and priorities of Russian Federation in support of the IAEA Secretariat activities.

## **INTRODUCTION**

The IAEA is a professional and technical organization playing the central role in the international cooperation and technical assistance to the Member States upon their requests in arrangement of their own national nuclear security systems and measures. The Agency is recognized as the organization capable to solve the vast set of tasks in the area of peaceful atomic energy use. The 63rd General Conference of the IAEA welcomes Member States’ contribution towards raising the awareness of the nuclear security activities of the Agency, with confidentiality considerations in this regard [1].

The aim of the paper is to confirm the IAEA central role in globally strengthening the nuclear security framework, coordinating international activities and assisting upon requests to the Member States in their efforts to establish efficient and sustainable national nuclear security regimes. The report strives to enhance awareness of the Member States with regard to the available capabilities and programmes of the IAEA Secretariat. For this purpose, paper presents inter alia examples of projects implemented by the IAEA Secretariat with Russian Federation assistance and the information on technical help provided by the Russian side to the partner states in the area of nuclear security in full accordance with the IAEA recommendations and approaches.

## **INTERNATIONAL COOPERATION IN THE AREA OF NUCLEAR SECURITY: Role of the IAEA and Basic principles**

The IAEA General Conference affirmed the Agency’s central role in strengthening the nuclear security framework globally and in coordinating international activities in the field of nuclear security [1]. It also recognized the central role of the Agency in developing comprehensive nuclear security guidance documents and providing assistance to Member States on request in support to the efforts of these States to fulfil their responsibilities to ensure the security of civilian nuclear and other radioactive material.

As the head of the Russian delegation noted at the 63rd session of the General IAEA Conference, «tasks the IAEA faces with are complex and diverse. But we are sure that the IAEA can cope with them» [2]. He also mentioned availability of the good basis for increase of the IAEA contribution into implementation of both current and new agenda for international cooperation at present day. Russia has consistently supported the Agency, and it now continues active cooperation with the Agency. It is stated in the speech of A. Likhachev, Director General of Rosatom State Corporation, at the plenary assembly of the 63rd session of the General IAEA Conference that the Agency may further rely on support of the Russian Federation in the future [2].

Physical protection of nuclear materials and nuclear facilities has always been and remains the cornerstone of nuclear security. The Member States of the Convention on Physical Protection of Nuclear Material and Nuclear Facilities as amended in 2005 shall arrange, implement and maintain the proper physical protection regime based on the threat assessment performed by the state with due regard for any new challenges and have the mechanism for flexible and timely improvement of the national physical protection regime.

Responsibility of the state for arrangement, implementation and maintenance of its physical protection regime is the key fundamental principle. Besides, the state should establish requirements for protecting the confidentiality of sensitive nuclear security information [3]. Those requirements should also include protection of such information from unauthorized disclosure during international cooperation and in contrast not to establish barriers for such cooperation. International partnership should be approached responsibly and with provision of reasonable protection of sensitive information.

## **AVAILABLE CAPABILITIES AND PROGRAMMES OF THE IAEA SECRETARIAT**

The IAEA Secretariat is carrying out extensive activities aimed to support the Member States upon their requests in the area of nuclear security, for capacity building and competence enhancement. The Agency facilitates worldwide accession of the maximum possible number of states to the Convention on Physical Protection of Nuclear Material (CPPNM) and its Amendment, which includes workshops on universalization of Amendment to CPPNM. The Secretariat develops non-legally binding documents – comprehensive recommendations on Nuclear Security. The Agency arranges missions upon the Member States request, dedicated towards evaluation and assessment of various aspects of national nuclear security regime (IPPAS). It also develops and implements integrated nuclear security support plans (INSSP). One of the top priority in nuclear security is human resource and capacity building, thus in 2018 the Agency conducted 105 training events. The IAEA Secretariat supports States’ efforts for protection of nuclear material in use and storage, helps with security of major public events and maintains Illicit Trafficking Data Base (ITDB) for nuclear material. Extensive work is being done thought the IAEA Nuclear Security Fund (NS Fund). In 2018, the Agency accepted financial pledges to the Nuclear Security Fund amounting to over €22 million. Regularly hosted international conferences on nuclear security arranged by the Agency enable the Member States to demonstrate their achivments technologies and development, to exchange valuable experience and to consolidate their efforts in order to provide nuclear security on global scale. The IAEA Nuclear Security Series is crucially important, especially for embarking countries. It facilitates arrangement of the national security system in a balanced and comprehensive manner with due regard for the individual needs and certain threats [4].

More detailed information on the IAEA activities in nuclear security could be found in the IAEA Annual Reports.

### The IAEA Nuclear Security Plan and the Nuclear Security Foundation

In March 2002, The Board of Governors approved the first Nuclear Security Plan – comprehensive document for protection against nuclear terrorism. At the same time, IAEA has established the mechanism of States’ voluntary contribution, the Nuclear Security Fund, in order to facilitate implementation of the Nuclear Security Plan. The Board of Governors approved the subsequent Plans in 2005, 2009 and 2013 [5].

This document lies within priorities of the Member States, fixed in the decisions and resolutions of the Agency's Policy-Making Organs as well as with the system of priorities for the publications of Nuclear Security Series, established in accordance with the recommendation of the Nuclear Security Guidelines Committee (NSGC). The International Conference on Nuclear Security: Obligations and Actions was held in December 2016 at the Headquarters of the IAEA in Vienna. On the first day of that Conference, the ministers adopted the declaration, which was also taken into consideration for finalizing the Nuclear Security Plan from time to time [5], [6].

The IAEA assists to the efforts of Member States for arranging efficient and sustainable national nuclear security regimes as well as supports in fulfillment of Member State’s obligations under any related international legal documents within the framework of the Plan and upon the Member State’s requests. This Plan does not implies assignation of any liabilities to the States. [5]

### Examples of various mechanisms and projects implemented by the IAEA Secretariat with the assistance of the Russian Federation

The IAEA, using financial support of Russian Federation, carries out different important activities. That includes projects within the framework of Nuclear Security Fund, Russian Safeguards Support Programme, Technical Cooperation Programme, Programme for Infrastructure Development and Personnel Training in the countries that have made the decision on construction of the first NPP, International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) and Programme of Action for Cancer Therapy (PACT). Russian Federation, fulfilling its obligations, keeps up and running world's first IAEA nuclear fuel bank - stock of low-enriched uranium in Angarsk. The total amount of Russian contributions to the Agency's budget in 2019 exceeded 17 million EUR.

The programme of safe and secure peaceful use of atomic energy requires careful planning, preparation and investment into development of the sustainable national nuclear infrastructure. In view of this, the Russian Federation annually contributes over 600 thousand USD and up to 30 million RUR (contribution in kind) for implementation of the projects within the framework of the IAEA Technical Cooperation Programme on Nuclear Infrastructure Development. In accordance with the Agreement between Russia and the IAEA these funds are used for the personnel training in the countries building or planning to build nuclear power plants. More than 550 specialists took part in 41 training events arranged by Russia and the IAEA in 2017-2019.

Agreement on Russian voluntary contribution towards the Nuclear Security Fund, signed in 2010, marked new step in fruitful cooperation between Russian Federation and the IAEA. In 2015 the Agreement, including annual financial contributions, was extend for another 6 years. Within the framework of such arrangements, Russia annually convey around 1 million USD for implementation of IAEA activities in the area of nuclear security as well as research and development works, to competence enhancement and implementation of joint projects to assist the Member States.

These activities are guided by the intent to accommodate the interests of the Member States to the fullest extent possible, which leads to necessity of spending Russian voluntary contribution funds most efficiently. In this context, Russia is open and ready to demonstrate flexibility in cooperation with the IAEA and Member States in common interests. To achieve such goal, it is necessary to respect the sovereign right of each Member State to make independent decisions in regards to arrangement of the national nuclear security regimes.

The Agency Secretariat upon the requests of the concerned states, approval by the Russian Federation and at the expense of the Russian voluntary contribution to the Nuclear Security Fund carries out, among others, the following activities. The projects presented here are the examples and could be useful for concerned Member States.

* Assistance to Member State in the area of physical protection of NPPs. Under this project, the IAEA provides national training course on physical protection of nuclear materials and facilities, the training course of the Agency on accounting for and control of nuclear materials for the purposes of nuclear security and technical visit to Russia on basis of training needs, specified by the state.
* Another framework project provides assistance to Member State in arrangement of its national infrastructure. In 2020 it is expected to carry out the first meeting in order to discuss the needs of this state and the available opportunities for assistance in more details, including but not limited to development of the joint road-map.
* Improvement of the physical protection system of nuclear facilities of a state. The task provides funds for procurement of the required equipment, its delivery and installation for the State as well as training the facility personnel with regard to operation and maintenance of the installed physical protection devices.
* Assistance in reliable, safe and secure storage of radioisotope thermoelectric generators (RTGs) with expired service life. It is a large-scale project providing direct practical works in the Member States as well as consolidation and publication of the information on the available experience, technologies and methods for reliable handling of RTGs.
* The Nuclear Security Fund contains allocated funds for establishment the Agency’s Nuclear Security Support Center for Member State upon its request. That includes procurement of required equipment and personnel training in order to develop competence and practical knowledge.
* Russian Federation regularly provides the Agency with venue in the Rosatom Technical Academy for the IAEA events, including training courses and workshops, which are dedicated towards human resources development as well as exchanging experience on arrangement and maintenance of nuclear security. These international and regional events are intended for wide and diverse audience: the management personnel, the professional staff and students. Many of these trainings contain practical classes, conducting on training site “Polygon” in Obninsk, where participants are working with various physical protection devices and measures. One of the essential principles of such activities is that it does not promote any particular nuclear security measures (including physical protection) or any manufacturer of the equipment. “Polygon” is equipped with immense variety of nuclear security detection devices, the training process is organized in a way to provide participant with fundamentals of nuclear security system establishment and principles of its effective functioning. Thus, trainees are able to independently identify the aspects suitable for their own State’s demands as well as specifically for the facility.
* Russian Federation supports the IAEA in development of training materials and arrangement of training courses for the employees of higher educational institutions. The specific character of these activities is to share our experience and the best practices in usage of the available Member State’s nuclear facilities for develop their own training programmes and independent development of national human resources.
* Russian Customs Academy carrys out regional IAEA courses on radiation detection methods for the members of supervisory authorities from foreign countries responsible for counteracting illicit trafficking of nuclear and other radioactive materials. The courses are hosted by training centers for customs surveillance over fissile and radioactive materials at Vladivostok and St. Petersburg. These courses are aimed to share the best practices with regard to prevention of illicit trafficking of radiation-hazardous items across the national borders. The courses are focused not only to enhance theoretical knowledge of the specialists but also to improve their practical skills. The participants work with actual radiation control equipment at the operating airport and harbor border crossing points as well as exercise in the customs surveillance zone of the functioning temporary storage warehouses at the border of the Russian Federation. In 2021, it is planned to carry out the pilot IAEA drills in prevention of illicit trafficking of radioactive materials across the national borders.
* Russian Federation supports the Agency in development and conducting training courses for specialists of the competent authorities in charge of the nuclear security regulation. These courses are both for beginners and advanced specialists. The subject matter of these events also varies from physical protection of nuclear materials and nuclear facilities, accounting and control of nuclear materials to physical protection, accounting and control of radiation sources and radioactive substances. The Russian regulatory body also organized the workshop on issues related to inspection of physical protection, accounting and control of radioactive substances and radiation sources. Another workshop is planned for 2021.
* Some joint projects of Russia and the IAEA are aimed to enhance competence in the area of responding to incidents with nuclear and other radioactive materials out of the regulatory control. In particular, scientific and research work is carried out in the area of nuclear forensic analysis. The results of the work will be available for the IAEA and all Member States. There are also various events arranged for experience exchange and discussion of the best practices in identification of radioactive materials outside the regulatory control. Thus, three regional IAEA seminars on nuclear forensic analysis have been conducted in Russia and Kazakhstan since 2017, and this practice is expected prevail. The foreign specialists are able attend the classes in one of the Russian laboratories. Russian Federation also continue the research with IAEA on peculiarities of nuclear forensic analysis in investigation of biological samples. Attending the drill on forensic analysis of radioactive materials may be interesting for many Member States.

### Information on technical assistance and help provided to the partner states by the Russian Federation in the area of nuclear security

Russian Federation provide assistance to the partners in development their national capacity building not only via IAEA activities but also directly. Primer example of bilateral aid is collaborative works within the framework of the projects for establishment of Nuclear Science and Technology Centres. In 2016 and 2018 our partners hosted several technical visits of Russian experts in order to assess the development level of existing nuclear infrastructure, including nuclear security. As the result of each visit, States received specific recommendations. These works were carried out in full accordance with the IAEA standards and recommendations.

Rosatom State Corporation developed the Basic proposal for establishment physical protection system for any nuclear facility, applicable to regular and small NPPs as well as to the Centre for Nuclear Science and Technology. The Basic proposal is based on the fundamental principles of the Convention on Physical Protection of Nuclear Material and Nuclear Facilities and the IAEA Recommendations on nuclear security. The proposal could be elaborated and adjusted in accordance with individual demands of the customer, presenting the comprehensive solution for establishment of physical protection system.

## **CONCLUSION**

In conclusion, the following has to be highlighted: due to the balanced and elaborate approach, unauthorized actions with nuclear material have never resulted in any catastrophic consequences. It lies in our power to uphold this in the future.

Russian Federation is open to international cooperation and ready not only to facilitate exchange of the advanced experience within the framework of standard events and training courses but also adapt any of them to the needs of the particular concerned state. It is also considered to train the specialists in accordance with the principle "train the trainers". Russia is ready to assist the partners in arrangement of their national infrastructure and organization of physical protection at particular facilities, if the state is interested in this. Russian Federation is open to conversation with the IAEA Secretariat and the Member States and ready to assist the partners.

References

[1] Nuclear Security. Resolution adopted on 19th of September, 2019 during the seventh plenary meeting, GC(63)/RES/8, IAEA, Vienna (2019), <https://www.iaea.org/sites/default/files/gc/gc63-res8.pdf>

[2] A.Ye. LIKHACHEV, Speech of A.Ye. Likhachev, Director General of Rosatom State Corporation, at the plenary assembly of the 63rd session of the General IAEA Conference, 63rd session of the General IAEA Conference (Vienna, Austria, 2019), <https://www.iaea.org/sites/default/files/19/09/gc63-russia_rus.pdf>.

[3] CPPNM unofficial consolidated text,  
<https://www.iaea.org/sites/default/files/18/08/accpnm-unofficial-consolidated-text.pdf>

[4] The Annual Report for 2018, IAEA, GOV/2019/15, Date: 26th of April, 2019, <https://www.iaea.org/opic/annual-report-2018>;

[5] Nuclear Security Plan for 2018-2021, Report of Director General, <https://www-legacy.iaea.org/About/Policy/GC/GC61/GC61Documents/English/gc61-24_en.pdf>

[5] Ministerial declaration on the International Conference on Nuclear Security: Commitments and Actions, 5th-9th of December, 2016, <https://www.iaea.org/sites/default/files/16/12/english_ministerial_declaration.pdf>.