NUCLEAR FORENSICS: FURTHER DEVELOPMENT AND STABILITY IMPROVEMENT

A.D. Saveliev
State atomic energy corporation “Rosatom”
Moscow, Russia
Email: ALDSavelyev@rosatom.ru

The establishment and further development of nuclear infrastructure as well as nuclear security regime in the countries, which are commencing the execution of their nuclear power or research program, is accompanied by objective difficulties related to their limited opportunities and competences. Given the IAEA recommendations and approaches, first, clear coordinating mechanisms need to be established and strategic and current tasks and plans of operation of the competent authorities and organizations, either existing or being created, need to be determined.

The general purpose of the state nuclear security regime is protection of individuals, property, society and environment from adverse consequences of the events related to the nuclear security. To achieve this purpose, countries should establish and put into force an effective and proper nuclear security regime and also ensure its operation and stability to prevent, detect and respond to such events. A nuclear security regime covers nuclear and other radioactive materials regardless of whether such materials are under or beyond regulatory control. Each country must ensure the undertaking of prompts and comprehensive measures to detect and, if applicable, recover the lost or stolen nuclear material.

The system of combating illicit trafficking of radioactive materials provisionally includes two main areas: the documentary area, i.e. information and organizational interaction between the competent authorities involved in the process, and the practical one, i.e. direct performance of forensic and other examinations.

An analysis of the events on nuclear forensics, in which Russian specialists have participated, allows to conclude that:

- the model of establishing the documentary area of the system of combating illicit trafficking of radioactive materials is similar in most of the countries, mainly based on the IAEA recommendations and does not require further clarifications;
- it is necessary to support and develop exactly the practical area of the system of combating illicit trafficking of radioactive materials both within a country and on the international platforms.

The practical approach of the Russian Federation to development of combating illicit trafficking of radioactive materials system

The Russian Federation is guided by the Article 5 of the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities (as amended in 2005) in the process of development of combating illicit trafficking of radioactive materials system.

Combating illicit trafficking of radioactive materials system includes a set of bilateral agreements between competent authorities responsible for response to events of illicit trafficking of radioactive materials. Agreements define responsible units of the competent authorities, procedure of required information provision.

In accordance with the item c) part 2 article 5 Convention, The system participants provide the information upon official request of foreign competent authorities about possible affiliation of founded radioactive materials with the Russian Federation facilities.

The national point of contact in the IAEA ITDB in Russian Federation is designated. The analysis of incident notification forms provided to ITDB shows, that most of notifications fall under group 3 - Confirmed or likely absence of an act of Trafficking/Malicious Use (including attempts thereof). The Russian Federation argues that the Term of reference ITDB and group principles should be revised in compliance with the Convention - In the case of a credible threat of sabotage of nuclear material or a nuclear facility or in the case of sabotage thereof, States Parties shall, to the maximum feasible extent, in accordance with their national law and consistent with their relevant obligations under international law, co-operate as follows:

(a) if a State Party has knowledge of a credible threat of sabotage of nuclear material or a nuclear facility in another State, the former shall decide on appropriate steps to be taken in order to inform that State as soon as possible and, where appropriate, the International Atomic Energy Agency and other relevant international organizations of that threat, with a view to preventing the sabotage.

In order to implement the practical area within the system, number of laboratories was designated. Each of these laboratories provides the support of investigation process by arranging and implementing of forensic and other expert examinations for identification/characterization of nuclear materials, radioactive substances and radioactive waste withdrawn from illicit trafficking or furnished within the framework of international cooperation

Since the establishment, support and development of the practical area require the availability of the relevant competences, it is appropriate to pay more attention to it in future, both within a country and in its international activity, by:

- conducting various training sessions and seminars on practical issues;
- practice exchange;
- joint development and improvement of radioactive materials identification techniques;
- dissemination of the techniques among the countries concerned;
- development of training programs;
- carrying out training in various formats;
- strengthening the role of the Global Initiative to Combat Nuclear Terrorism.

A special attention needs to paid to the international cooperation on nuclear forensics issues. Most of the nuclear forensics' issues are known to be of sensitive nature, so the issues of non-proliferation of confidential information and ensuring national security of each country play the key role. That is why further development of international information interaction on nuclear forensics issues must be based, above all, on the national legislation, conclusion of agreements between countries and reliability of the data being transferred.