Abstract

Latvia is developing infrastructure to ensure adequate system for safety and security of radioactive and nuclear materials, radiation sources and nuclear facilities within its Radiation and Nuclear Safety legal framework. The first phase of implementation was to establish and develop further relevant legal acts, but in the same time there was a need to improve the technical capabilities for the control of goods movement across the border and the need to establish the relevant educational system. The Ministry of Environmental Protection and Regional Development (MEPRD) started to participate in this process from the early beginnings when the problem of illicit trafficking was foreseen. After the technical expertise carried out by the Environmental Data Centre the first border guards and customs control points were equipped with portable measurement devices. By assistance of Nordic countries and USA this system is under constant development, but full scope conceptual analysis of entire problem is not yet finished. The need for further development of the training capabilities, as well as information sharing among all relevant institutions and awareness building for decision-makers still remains.

1. Introduction

The security and safety of radiation sources (including radioactive materials, nuclear materials, all other type of man-made sources of ionising radiation) are closely linked to the illicit trafficking phenomenon. There are two main tasks:

- To ensure that all radiation sources belonging to the entities in the country are under state control, the illicit movement of them (non-authorised activities) has to be detected in the early stages.
- To ensure that cross-border movement of any such source is under control, undeclared materials have to be stopped at the border.

The rapid changes in political and economical systems in late eighties and early nineties increase the severity of this problem. Definitely it is not a new phenomenon and the radiological accident in Brazil – Goiania serves as a good example. But the amount of incidents where the control over the sources at the facilities was lost and the increase of smuggling events with radiation sources are significant enough to draw the attention of the society towards the radiation safety. As a proof, one can refer to joint activities of the IAEA and several international organisations in drafting the new Basic Safety Standards [1] where Safety of Radiation Sources was included even in the title of this document.

2. Implementation of safety fundamentals for safety of radiation sources in national legislation

Law “On Radiation Protection and Nuclear Safety” is the basic document for implementation the radiation protection and nuclear safety objective [2]. The purpose of the
Law is to protect people and the environment against harmful effects of ionising radiation. Article 11 of the law prescribes the necessary actions for ensuring the supervision:

- Job supervisors shall provide with all necessary information to the Radiation and Nuclear Safety Inspectorate (RNSI),
- The police shall provide the assistance necessary for the purposes of supervision,
- Customs services shall control the import, export of radioactive substances and nuclear materials, and provide with necessary information to the RNSI concerning the transfer of such substances and materials across the state borders.

Those provisions serve as the basis for sharing responsibilities between authorities, and establish the primary scheme for exchange of information.

For the further securing of adequate awareness system for safety and security of radioactive and nuclear materials the law was amended with new term “undeclared ionising sources”. This term clarifies the issue and is essential for customs Services and border guards.

Specific requirements for physical protection, that the facility shall meet before licence application for any activities with radiation sources were incorporated in the Regulations of the Cabinet of Ministers “On Issuance of Licences and Permits for Activities with Radioactive Substances and other Ionising Radiation Sources” [3]. Chapter IV establishes the requirement – “in order to obtain a licence or permit, the physical protection of materials or facilities shall be ensured first”. These Regulations also establish the system for authorisation and accountancy of sources, which is a vital element to ensure State control over location of sources.

The Regulations on Protection against Ionising Radiation [4] (national BSS) Chapter III “Defence System, Requirements and Programs” determine the obligation to create an accounting system for all radiation sources and introduces technical safety requirements including “defence in depth” as well as some specific issues for physical protection.


It is not surprising, that new draft Regulations on Safe Transport of Radioactive Materials [7], which are based on IAEA ST-1 [8] have several articles on physical protection.

To establish a legal system for border control, the Cabinet of Ministers has accepted specific regulations for dosimetric control [9]. As a matter of fact sufficient expertise and experience in this field was not available before, for this reason the MEPRD had drafted the new (significantly improved) version for this document. This draft incorporated questions about staff training, technical requirements for measurement devices, reporting system and information circulation [10].

3. Preventive measures against illicit trafficking on the borders

According to the Cabinet Regulations on system for dosimetric control the border guards have the responsibility to detect undeclared movement of radiation sources across the national borders. To fulfil this obligation they definitely need adequate technical capabilities and relevant training. To characterise the situation in Latvia, it has to be noticed that all border-crossing points are equipped with portable dose meters, but only part of all highways across to the borders are equipped with stationary monitoring gates. The Riga’s international airport has some portable devices; the border guards are using portable measurement devices to control harbours and railroads. There are two movable laboratories, besides several institutions can be involved in examination of the discovered smuggling objects or found lost sources.

The training of border guards in first stages were managed by international assistance, namely Swedish Radiation Protection Institute (SSI), USA Department of Energy (DOE),
Finish Radiation Safety Authority (STUK). These activities mainly were under umbrella of bilateral co-operation or IAEA Co-ordinated Technical Support Plan for NIS. Staff of the Latvian Nuclear Research Centre was directly involved in the training activities for border guards organised by the USA.

What are the following steps after disclosure of undeclared radiation sources in cargo or personal property on border? This is where the activities of customs officers should begin, because according to the Customs Law, only customs officers may investigate the cargo. This part of activities on border still needs to be improved because there are certain technical issues related to organisation of control, especially for railroad, and in some cases also for cars and ships or aircrafts. This issue was taken for considerations during drafting of working procedures. The Government established a working group, which analysed the arrangement for implementation of border control system. The experts from border guards, Customs, transport administrations from different branches, police and radiation safety authorities were involved in these activities.

The training for customs officers is arranged in the Customs Institute jointly with the Technical University. The main activities for improvements of the staff training for both institutions – Border Guards and Customs are oriented to improve the capacity of the teachers as the less expensive and most sustainable option. Principle “train the trainers” is widely used in many fields, especially it is relevant for border guards because only a part of them are professionals, the majority of the them are in this position only during their state service time.

A smuggling case in Ludza (small city close to border with Russia) can serve as a practical example of working system. In April 1996 a group of people was discovered who had illegally imported low enriched uranium with intention to sell in “black market” in West countries. After the investigations two persons were prosecuted and imprisoned.

4. Preventive measures against illicit trafficking inside of country

As it is shortly described above – the legal infrastructure is based on Law and regulations of the Cabinet of Ministers. According to the main principles the owner of source has responsibility for implementation of all relevant requirements. Taking into consideration that the owner himself may not be the expert in radiation safety, the key person for radiation safety is “job supervisor”. For facilities with large sources or significant amount of smaller sources the national BSS requested to ensure adequate number of radiation safety experts. For same facilities with extensive use of radiation sources BSS requests to establish specialised radiation safety divisions.

University of Latvia usually arranges the post graduate training, but specific training on physical protection of nuclear facilities up to now is not available in Latvia. Under USA DOE support program one training event was arranged for staff of Nuclear Research Centre and subordinated institutions of Ministry of Environmental Protection and Regional Development. Only few Latvian experts received training under IAEA-USA DOE programmes in this field.

5. International co-operation

The main activities for improvement of safety and security of sources are under umbrella of IAEA Co-ordinated Technical Support Plan for NIS. The main donor states for Latvia are Sweden, USA and Finland. Some activities were described above, therefore only some major events have to be mentioned:

- Physical protection upgrades at the Nuclear Research Centre,
- Installation of the Radiation monitoring gates on the East borders of Latvia,
- Installation of the Radiation monitoring gates on the main transit highway “Via Baltic”.

169
Further activities are related to Latvia’s participation in the IAEA Illicit Trafficking Database program. The Ministry of Environmental Protection and Regional Development is the national co-ordinator of these activities. All received relevant information is transmitted to the Ministry of Interior (Security Police) and Customs Board.

The Swedish Nuclear Power Inspectorate (SKI) initiated further action plan for improvement safety and security of sources. Certain activities will be under technical support program, but also all-relevant institutions in Latvia will be involved in this program. First major event shall be a joint workshop of Swedish, Norway, Latvian and Finland experts together with top-level State officials from relevant ministries. During the two days meeting participants shall have to assess problems and work out the basis for conceptual action plan. Such procedure should also raise the awareness of decision-makers about the needs to improve the situation and apparently will facilitate the further co-operation among institutions and also neighbouring states.

6. Conclusions and main activities for future

The job supervisors at the facilities play the major role for the stabilisation of the system inside the country, only then the State can improve the situation by its well-developed supervision system. To achieve this goal any reasonable actions must be taken to develop the Safety Culture at the top level in the state. Regulatory bodies have to use all available methods to transmit and explain information about potential impact of the “lose of control over the radiation sources”. This task is of utmost importance for the states in transition to a market economy, because Parliaments and Governments of these states have specific priorities in this period, but the past experience is not adequate with the present situation. A state with stable political and economic situation may find it much easier to increase the financial and manpower resources to prevent illicit trafficking for relatively short period of time. Moreover usually the private business facilities already have established the necessary security procedures and State institutions have sufficient power for the enforcement measures.

7. References