

Nuclear and Radiological Regulation in Moldova

Artur BUZDUGAN

National Agency for regulation of nuclear and radiological activity,

Alecu Russo St., 1, MD 2068, Chisinau, Republic of Moldova

National Nuclear Security Support Centre, Technical University from Moldova, Chisinau, Republic of
Moldova

e-mail: artur.buzdugan@anranr.gov.md, artur_buzdugan@yahoo.com

Abstract - The nuclear security and safety legal framework in Moldova has changed significantly over the last 6 years. This has mainly been the result of implementation of IAEA nuclear safety and nuclear security standards, European directives, which are based on new data and evolving concepts at the international level, on adopted in May 2006 of the Law no. 111 On safe deployment of nuclear and radiological activities and establishing on established on March 2007 of a sole regulatory authority - the National Agency for the Regulation of Nuclear and Radiological Activities.

I. INTRODUCTION

Radical Moldovan legislation reform in 2006 in nuclear regulation was initiated by Law no. 111 of 11 May 2006 *On the safe deployment of nuclear and radiological activities*. The most important consequence of this law was establishes in 2007 of a single regulatory body - the National Agency for regulation of nuclear and radiological activity (the National Agency), which replaced five former regulatory body in the field. Subsequently, the implementation of this law and the provisions of the 7 International Conventions in force in Moldova in 2007, the National Agency has developed and promoted in 2007-2011 a set of laws and regulations.

II. LEGAL FRAMEWORK

By Law no. 111/2006 (replaced by Law132/2012) to the National Agency have been delegated all necessary regulatory functions on nuclear and radiological field (inspection, licensing, developing legislative framework and national policies in nuclear field). In this context it was necessary to done a total inventory in the country of ionizing radiation sources. Results of inventory process have been followed by establishing of the national register of ionizing sources, categorization of radioactive sources, planning of inspection and authorization process. Recognizing of the CoC, of other IAEA nuclear safety and security standards call for elaboration following normative acts, approved later by the Government:

- no. 1220 from 30.10.2008 about Regulation on state control and supervision of nuclear and radiological activities;
- no. 1017 from 01.09.2008 about National Register of ionizing radiation sources and of authorized legal and physical persons;
- no. 212 from 13.03.2009 about Regulation on authorization of nuclear and radiological activities.

Inventory of radioactive waste and of unused radioactive sources from the Radon type repository showed insufficient storage conditions, reporting also lack of a

concept for categorization and any management of RW. Thus, based on IAEA standards National Agency developed and Government approved the Regulation on radioactive waste management (no. 388 from 26.06.2009).

These concrete steps, put the primary normative base of the alignment of Moldova to other international conventions in the field of nuclear safety, security and safeguards of NRM (*see Table*). In these respects is highly appreciate IAEA training of the National Agency staff that contributes to development of the first national reports under the Convention on Nuclear Safety, under SQP about nuclear material, under UN SCR 1540.

III. REPERCUSSIONS OF THE NUCLEAR AND RADIOACTIVE TERRORISM ON NON-NUCLEAR COUNTRIES

No State, regardless of the status of its nuclear/non-nuclear, cannot be sure that the threats and risks of proliferation will not be applied in its territory. Unfortunately the Republic of Moldova is not an exception, confirmed by past events of illicit trafficking of NM with LEU (2010) (Fig. 1) and HEU (2011) (Fig 2 (general view), 3 (spectra) - origin of MN were Transnistria region) large lauded on the front pages of international news. The cases on illicit trafficking were mentioned in the Global Security Newswire (September, 27, 2011) and in the speech of IAEA Director General, Dr. Yukiya Amano, addressed at Seoul Security Summit of 21 March 2012. Taking into account 4 cases of radioactive contamination at the Ribnitsa Metallurgical Plant (Transnistria region), 2 above mentioned illicit traffics with NM, Bulgaria NM illicit traffic case (1999, origin of the NM being in the same Transnistria region), we concludes with regret that the territory of Moldova were selected by the non-state actors as a illicit transit corridor for NM.

Table. International instruments ratified (signed, accessed) by the Moldovan authorities		
International instruments	Signature / Instrument	Deposit/ In force
IAEA Statute	Accession	24.09.1997
Agreement on the Privileges and Immunities of the IAEA	Acceptance, 28.02.2008	22.12.2008
Treaty on the Non-Proliferation of Nuclear Weapons		11.10.1994
Safeguards Agreements between the Agency and the Republic of Moldova in connection with the NPT	Ratified, 02.03.2006	17.05.2006
SQP to the Safeguard Agreement between the Republic of Moldova and the IAEA	Ratified, 06.2011	01.09.2011
Model Protocol Additional to the Safeguard Agreement between the Republic of Moldova and the IAEA	Signed, 14.12.2011, ratified, 12.04.2012	
<i>Convention on Early Notification of a Nuclear Accident</i>	<i>Accession</i>	<i>07.06.1998</i>
Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency	Accession	07.06.1998
Convention on Nuclear Safety	Accession	05.08.1998
Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management	Accession	24.05.2010
Code of Conduct on the Safety and Security of Radioactive Sources	Applied	Reporting
IBSS for Protection Against Ionizing Radiation and for Safety of Radiation Sources.	Applied	2000
Convention on the Physical Protection of Nuclear Material & Amendment to the Convention on the Physical Protection of Nuclear Material	Accession	06.06.1998
Amendment to the Convention on the Physical Protection of Nuclear Material	Ratified, 24.04.2008	22.12.2008
International Convention for the Suppression of Acts of Nuclear Terrorism	16.09.2005	18.04.2008
CTBTO Treaty	24.09.1997	16.01.2007
UN Security Council Resolution 1540	Sustained	Reporting
Vienna Convention on Civil Liability for Nuclear Damage	Accession	07.05.1998



Fig 1

THE RISKS AND THREATS

The risks and threats arising from new instruments of international terrorism is also the proliferation of nuclear weapons. Is not neglected the spread of radiological dispersive device, containing radionuclide's, which due to the big psychological effect of the weapon can be attributed to mass influencing arms. These risks and threats conduct to serious threats to the national security and stability. Starting from axiom, that the issue of national security is primarily the task of the State, was

approved the National Security Concept of Moldova, which, among the major risks, reiterated:



Fig 2

- the separatist regime on the left bank of the Dniester river (Transnistria region),
- international terrorism,
- the consequences derived from human activity (with the NRM), as well as organized crime and corruption

Following this Concept, three years away was approved the National Security Strategy which must serve as a basis

for the elaboration and approval of respective narrow field strategies.

V. COMBATING ILLICIT TRAFFICKING IN NRM.

Combating of illicit trafficking in NRM is a very important area which partners from inside the country and from

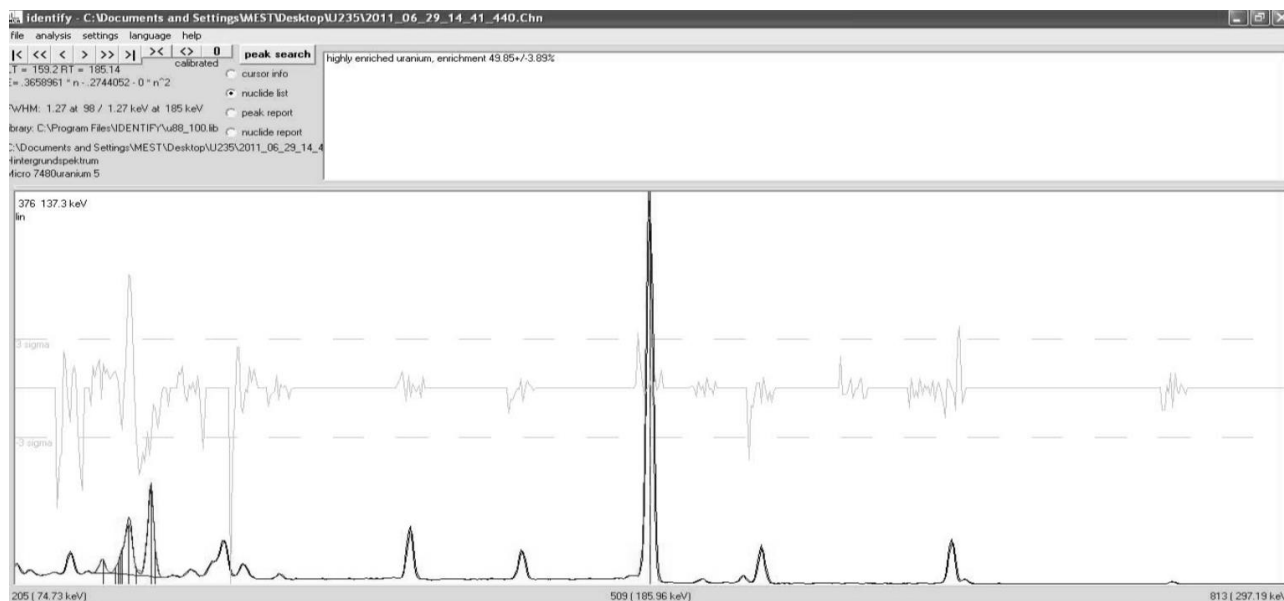


Fig. 3

IV. PHYSICAL PROTECTION OF NRM AND NR FACILITIES.

Activity in this direction may be classified as one of the critical element in ensuring NRM security. The NARNRA tries to ensure legal aspects of this subject. Thus, was elaborated the draft of the Regulation about physical protection of NRM. Since 2009 four physical-protection systems at nuclear/radiological sites from Moldova have been upgraded with technical, financial, and administrative support from the IAEA (through donor contributions to the Nuclear Security Fund) and from USA DoE. To reduce the risk that radioactive sources could be stolen and used for radiological dispersal devices, the US Government and IAEA assists our operators in upgrades the physical protection of high activity radioactive material. In the framework of the Tripartite Initiative on the Securing and Managing of Radioactive Sources (among the IAEA, the Russian Federation, and the United States) was secured radioactive sources with total activity about 2,120 TBq.

OSCE support give us possibilities to take measures for safely disposal in of a hundreds radioactive sources from the Transnistrian region. We hope that this process will continue and all unused sources from the enterprises will be pick up and safely disposal at the specialized repository.

Nuclear forensics is a key element of national response preparedness. It is necessary to determine which domestic laboratory working in nuclear field and corresponds to be nominating as the main nuclear forensic laboratory. Also it is need to establish a national database in nuclear forensic. Recently have been initiate education in this field by support of the IAEA, ITU and SSM (Sweden).

abroad has paid on the recent decade, because of the availability of transit routes in combination with non-controlled border segment controlled by Transnistrian authorities. The relevant programs have been performed (Fig. 4-7) in Moldova mainly of international assistance from the IAEA, European Commission, US DoE, US NRC and Sweden STRALSAKERHETSMYNDIGHETEN



Fig. 4 Domestic Table Top Exercise



Fig. 5 Leuseni/Albitsa EU Border Crossing



Fig. 6 Pedestrian RPM for Chisinau Int. Airport



Fig. 7 Mobile Laboratory. SSM donation

To have a more fully picture of these we underline, that we activate in these fields according to established partnership through followings Action Plans or Program/Projects between:

- the Government of the Republic of Moldova and the Government of the USA on combating illicit traffics of NRM;
- the IAEA Nuclear Security Office and NARNRA on Integrated Nuclear Security Support Plans;
- the IAEA Safeguards Department and NARNRA of the Road Map about implementation of the Additional Protocol requirements;
- the IAEA Department of Technical Cooperation and Moldova partners about national/regional projects;
- the USA DoE and US NRC and domestic operator/authority for polyvalent technical assistance;
- the UNICRI & EC and domestic authorities in the frame work of the initiative of CoE;
- the NARNRA, other operators about works in the framework of the GTRI;
- the NARNRA and Romanian National Commission for Control of Nuclear Activities (CNCAN);
- the NARNRA and ITU from Karlsruhe (Germany);
- the NARNRA and Sweden Radiation Safety Authority (SSM), and others.

EXPORT/IMPORT CONTROL

At present we recognized that domestic export control is sufficiently effective tool of state policy in the field of dual use materials and technologies. This control is done by the Ministry of Economy through interministerial State Commission. In view of the recently ratification of the Additional Protocol is necessary to upgrade this activity for better covers the requirements follows from that ratification.

In this view, NARNRA signed with Custom Service the Memorandum of Cooperation which mentions the necessity of export/import strictly control of NRM, its permission exclusive on the base of NARNRA authorization, and periodical information of NARNRA about flux of goods. All these actions contributes to the upgrade of domestic infrastructure responsible for *safeguards, material control and accountancy, physical protection of NRM and NR facilities, combating illicit trafficking in NRM.*