

Evaluating National Nuclear Safeguards System Implementation in the Republic of Moldova

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INTRODUCTION

Strengthening the multilateral system of Nuclear Safeguards by the International Atomic Energy Agency (IAEA), imposed by the increasing cross-border illicit trafficking of nuclear material has led Republic of Moldova to ratify on 1 June 2012 the Additional Protocol (AP) (INFCIRC/690) to the Agreement of Nuclear Safeguards in relation with the Non Proliferation Treaty. This was followed by the adoption in the Parliament on 8 June 2012, of the new Law no. 132 of 08.06.2012 on the safe conduct of nuclear and radiological activities, which extends the power of the National Agency for Regulation of Nuclear and Radiological Activities (NARNRA) and establishes the new chapter „Nuclear Guaranties” with detailed measures to strengthen the Nuclear Safeguards in the country. Moldova does not have any ongoing activities relating to the nuclear fuel cycle and has no plans for the construction of any kind of nuclear facilities.

The main location where most of the nuclear material under IAEA safeguards is located is Radioactive Waste Storage and Oncology Hospital. The inventory contains: depleted uranium used as a shielding in radiotherapy equipment, plutonium sources, low enriched uranium as chemicals, and small quantities of high enriched uranium seized from illicit trafficking.

METHODS

The NARNRA implements safeguards measures in relation to nuclear materials by:

- development and promotion in the Government of the national normative acts in the field;
- establishing the system for inspecting of nuclear material;
- implementing inventory-taking and reporting procedures for quantities of Nuclear material;
- implementing authorization and monitoring procedures for the movements of nuclear material;
- implementing procedures for reporting quantities of nuclear material to the IAEA;
- maintaining and updating the national register of nuclear materials.

RESULTS

Have been obtained some good practices:

- Routinely performed national inspections

Based on the approved plans, NARNRA routinely conducts national inspections independently from the IAEA, in order to ensure compliance with the country's legislation and international obligations.

These inspections typically address several different areas such as radiation safety, emergency preparedness and physical protection, including safeguards (nuclear material accounting, reporting and control). The results are recorded in protocols and archived at NARNRA.

- Maintaining and updating the national register of nuclear materials

Nuclear organizations has valid authorizations to conduct nuclear and radiological activities. The designated radiation protection officers are responsible for radiation safety And for accounting of radioactive sources and nuclear material. The ledgers kept, reflect both movements and inventories of radioactive sources and nuclear material.

Historically, nuclear materials are “registered” within the unified national system of accounting for and control of radioactive sources and nuclear materials. The first steps of separate registration of nuclear material and radioactive sources (to reflect the requirements of the Comprehensive Safeguards Agreement (CSA), especially with modified SQP) have been already made through the Government Decree 1017/2008 on Regulation about National Registry of ionizing radiation sources and of authorized physical and legal persons, revised in 2014 and introduction of the special forms for nuclear material in the National Register.

All nuclear material authorization holders are required to account for and control nuclear material and provide NARNRA annually with physical inventory of nuclear material as of 31 December.

- Consolidation of physical protection

Within the country, strengthened arrangements of physical protection measures, combating illicit trafficking and communication and interaction between different state authorities involved in nuclear security issues are made.

One example is the former laundry facility of Radioactive waste storage, which has been reconstructed, with the assistance of the IAEA and USA, into a radioactive waste conditioning facility.



Also the construction of a new radioactive waste storage facility has been finalized, which is now equipped with a new physical protection system.



- implementing authorization and monitoring procedures for the movements of nuclear material

The export/import regulatory control in Moldova are performed through relevant licensing procedures of the Interdepartmental Commission (IC) of Ministry Economy, which approves licenses for import, export and re-export, and permits for transit of strategic goods, and in general meet the export/import requirements of the CSA and AP. NARNRA needs to request monthly from the IC information on such exports and imports.

Any activity involving radioactive sources and nuclear materials is subject to authorization issued by NARNRA, normally for a period of 5 years.

- Annual and quarterly presentation to the IAEA of the reports on SQP and the Additional Protocol (AP)

AP declarations are prepared by NARNRA based on the information received from authorization holders, ministries and other organizations upon request from NARNRA.

Both the Nuclear Materials Accounting reports (annual updates of physical inventory and annual information on international transfers) and AP declarations are processed at NARNRA and sent to the IAEA through Ministry of Foreign Affairs and Moldova's Permanent Mission in Vienna.

- Cooperation with IAEA

Close working contacts have been established between NARNRA and the Department of Safeguards of IAEA. It was developed and agreed the Joint Action Plan for implementing the provisions of the Additional Protocol to the Safeguards Agreement - an essential aid in fulfilling the country's international obligations. The IAEA International SSAC Advisory Service (ISSAS) mission was conducted from in September 2013 to review Moldova's State System of Accounting for and Control of Nuclear Material (Moldova's SSAC). No visa requirements for IAEA officials with a United Nations Laissez-Passer performing activities under the CSA and AP.

- Systematic capacity building of NARNRA staff

Basic technical resources in the area of measurement and/or detection technique are available. In this area, NARNRA also provides relevant training to the staff of other organizations involved.

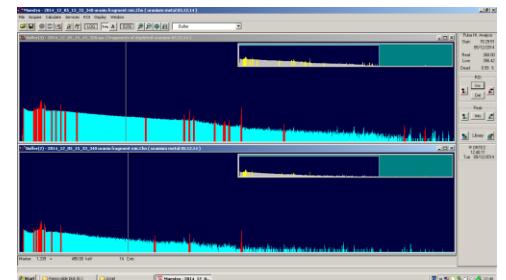
Consequently, NARNRA and operators have sufficient capabilities (both the necessary equipment and trained staff) for detection and characterization of radioactive and nuclear materials. The currently available and used equipment in the country includes: personal dosimeters, various types of α -, β -, and γ detectors, contamination monitors and different γ - spectrometers based on Na-I and Ge-detectors.

- Training provided to other organizations (with IAEA support)

Was carried out the pitch exercises on improving the procedure for reacting at radiological emergencies.



Discovered several cases of illicit trafficking of nuclear material in the country. At the request of the General Prosecutor, Mobile Experts Team has conducted nuclear material analysis, following the detection of illicit trafficking of nuclear materials.



FINDINGS

- NARNRA should become a member of the Interdepartmental Commission or be invited to participate at the meetings and deliberations that are relevant for the implementation of the CSA and AP;
- Requesting further legislative assistance from the IAEA;
- Set up a plan for identification and characterization of nuclear material which may be found after decommissioning of the radioactive waste, record and report this, as appropriate, to the IAEA as nuclear material subject to safeguards under the CSA;
- Additional human resources are necessary for NARNRA in order to strengthen support for implementation of its safeguards related functions, to full Implementation of the AP and planned improvements of nuclear security measures at relevant locations.