



THE ROLE OF NATIONAL REGULATORY AUTHORITY IN MONITORING OF RADIOACTIVITY AND IN CASE OF SEIZURE OF RADIOACTIVE OR NUCLEAR MATERIAL

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The Radiation Protection Centre is a regulatory authority in radiation protection in Lithuania. Its main tasks are licensing of practices, supervision, control and enforcement of radiation protection requirements, dosimetric, radiometric and spectrometric measurements, evaluation of exposure and its sources, expertise and advice on optimization of radiation protection. Its activities may be divided into two main parts – regulatory and analytical ones.

Food, drinking water, environmental, wipe and other samples are monitored, the appropriate evaluation of doses is done. The data on concentrations of artificial radionuclides in different bodies are available.

The laboratory is to be accredited according to the ISO 17025 standard in the framework of Phare Twinning Project.

In case of seized radioactive or nuclear material the Radiation Protection Centre has to identify the necessary radiation protection means for members of public and emergency workers, perform measurements of dose rate and radioactive contamination, and, if necessary, evaluate doses received due to the seized radioactive or nuclear material.

Since the Radiation Protection Centre has its departments in the largest cities of Lithuania the above mentioned measures can be taken very urgently, especially the ones connected with primary evaluation of situation and identification of optimized radiation protection measures. The Radiation Protection Centre has its own possibilities of identification of radionuclides in the seized material. Such installations as HpGe spectrometers (Oxford and Canberra), equipment for radiochemical separation of U, Pu and actinides, alpha spectrometer, liquid scintillation spectrometer and neutron rem counter are available.

There were a few cases when seized material had to be analyzed also. Different sources were found in different places of Lithuania, and it was necessary to define the activity and isotopic content of these sources. The following scheme is used in such cases: measurements of dose rate and radioactive contamination in the vicinity of the seized material, evaluation what radiation protection measures shall be taken, transportation of the material to laboratory, its analysis starting with more detailed measurements of dose rate and radioactive contamination. The laboratory analysis is combined with analysis of data of the National Register of Sources of Ionizing Radiation and Occupational Exposure, which is also kept in the Radiation Protection Centre. The aim of it is definition if the seized material has not been possessed by somebody in Lithuania.

Such a system is rather simple. The main disadvantage of it is that often more complex analysis is needed for nuclear forensics. However, the data on sources of ionizing radiation available in the Radiation Protection Centre and its analytical capabilities combined with analytical possibilities of other laboratories in Lithuania may often provide the answer to questions what radiation protection measures shall be taken, what the origin and possible way

into Lithuania of the seized material is, what further steps shall be taken for identification of the material under consideration.

Despite of restricted possibilities in nuclear forensics such a system may be rather optimum case for the country with limited resources and expertise like Lithuania. The system which is used for monitoring of radioactivity allows to identify the most urgent means of radiation protection and basic characteristics of seized material.

Close relations with research centres, capable to perform the complex analysis, are very important. Lithuanian experts may take part as observers in the analysis of seized material in these research centres. However, the most urgent analysis should be done in Lithuania. For this reason the following needs may be identified: training in analysis of radioactive and nuclear materials and evaluation of doses due to them, assistance in creation of quality assurance system in laboratory, expert advice in measurement procedures.