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Nuclear Forensics Activities in the Slovak Republic

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After political change in 1989 we have been facing a new type of criminal activity –smuggling of nuclear materials. The territory of Slovakia became one of possible routes for criminals, smuggling nuclear materials from former USSR countries to the western countries. Slovak Republic was established on 1st January 1993. By the Act Nr. 2/1993 the Nuclear Regulatory Authority of the Slovak Republic (UJD) was grounded.

Since 1993 all relevant ministries and regulatory bodies paid attention to the creation of an effective system to combat illicit trafficking in nuclear and other radioactive materials. In nineties, when the most cases of illicit trafficking of nuclear materials occurred, the nuclear forensics tasks were performed by the Department of Nuclear Chemistry of Comenius University in Bratislava. Nuclear materials seized on Slovakian territory were analyzed by using alpha and gamma spectrometry. We also trained customs and police officers, installed portal monitors and all involved state bodies signed a common guideline on how to proceed and cooperate in the case of a seizure of nuclear or radioactive materials.

Qualitative change occurred in 2001, when the chairmen of UJD and Joint Research Center –Institute for Transuranium Elements (ITU) signed an agreement of future cooperation in the field of combatting illicit trafficking of nuclear materials. This agreement started new era of cooperation. Regular participation of Slovakian representatives in The Nuclear Forensics International Technical Working Group (ITWG) was supported by the ITU, and, according to the agreement, we used the capabilities of ITU for nuclear forensics analyses of seized nuclear materials.

In November 2007 our Police Corps finished an undercover investigation by seizure of suspicious radioactive material. First analyses made by the Civil Protection laboratory and Department of Nuclear Chemistry showed, that suspicious material contains natural uranium. We asked the ITU to perform forensic analysis of that material. In March 2008 we sent a sample of the seizure to ITU. The forensic analysis confirmed the seized material was natural uranium. The results were used as evidence during the trial. One sample of this material was sent also to Lawrence Livermore National Laboratory, USA in 2011. Up to now we do not know the results of this analysis.

Another example of cooperation between ITU and UJD represents the joint analysis of uranium pellets coming from the seizures in nineties. The UJD sent two sets each of tree pellets to ITU and in October 2008 two experts from Slovakia partially participated in analyses of those pellets in ITU headquarter in Karlsruhe, Germany. The results of the analyses were made available in April 2009. The outcomes showed that uranium pellets most probably came from the fuel assembly stolen in Lithuania in the beginning of nineties.

Slovakian experts are fully aware of the importance of having, even limited, nuclear forensics capabilities. We are still trying to improve our laboratories with new devices and methodologies in order to be able to provide fundamental analyses of seized nuclear or radioactive materials. However, taking into account limited financial and personal sources, it seems to be more useful to continue the cooperation with ITU.

Country and/or Institution

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