

## Operating procedure for Radiological Crime Scene Management: harmonized on-site work between crime scene investigators and radiological experts

Terrorism is a growing trend nowadays. Radioactive materials can become explicit targets for crimes and for terrorist organizations, as they can be used in various weapons (such as explosives capable of dispersing radioactive material) resulting effective panic and serious economic damage. Increasing terrorism serves growing chance to have different nuclear security events like radiological terror attack.

The severity of the problem is also illustrated by the fact that international organizations (such as the International Atomic Energy Agency, the Global Initiative to Combat Nuclear Terrorism, the Nuclear Forensics International Technical Working Group, ITWG, etc.) place great emphasis on this area. They seek to draw attention to the significance and dangers of the topic in major international forums (such as the Nuclear Security Summits).

Based on our experience, nuclear or other radioactive materials can be found at more and more crime scenes in Hungary. Already the recognition of these materials can be challenging in the absence of appropriate detection tools. Their precise identification, collection and professional transport, handling and examination require special expertise.

Particular attention needs to be paid to the fact that, in a crime scene, where appropriate, radioactive material may not be "uniform" (e.g. in closed packaging or in a container, box, sealed form), but may also be present as a contamination on various surfaces such as floor, wall, table tops, clothing, etc. Radioactivity is hardly detectable in the absence of appropriate measuring instruments. It also means that the radioactive material can contaminate the traditional evidences and response personnel like crime scene investigators.

Investigation of such a crime scene requires very special preparedness, rules and procedures. An important issue is the personal, health safety (radiation protection) of crime scene investigators and the special security and safety rules for collection, transport and subsequent investigation of radiological materials and radioactive contaminated traditional forensics evidences.

In most of the countries, including Hungary, there is a problem - which makes it difficult to develop effective procedures - that people who are responsible for (traditional) crime scene investigation are not prepared for the collection, handling and analysis of radiological materials (lack of expertise and equipment). While radiology experts (nuclear physicists, radiochemists) and their facilities - mostly research institutes - are not ready and allowed to collect, handle and investigate traditional forensics evidences: neither expertise nor permission.

Therefore, in Hungary we aimed to develop common standard operating procedures between radiological and traditional forensics experts for radiological crime scene management together with method developments for handling and analysis of radioactively contaminated traditional forensics evidences.

In the program traditional and nuclear forensics experts developed a procedure how to work together at a radiological crime scene and how to collect and investigate the evidences (radiological, traditional and radiologically contaminated traditional) in the field and examine at the laboratory in glove box. Research on the effects of the radiation on traditional evidences was also carried out. The method development was also focusing on safe conditions on evidence collection using special type of sampling kits and model contamination at a scene to test the safe collection.

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### State

Hungary

### Gender

Female

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