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Hungarian Procedure for Radiological Crime Scene Management

Nuclear or other radioactive materials can be a target of criminal acts and terror attacks, as these materials can be effective tools used in a variety of radiological weapons as in radiological dispersal devices (RDD) or in radiological exposure devices (RED). These weapons can be effective for panic generation and causing economical demage at a state. Illicit trafficking and smuggling of nuclear or other radioactive materials is a real existing problem worldwide. The importance of radiological threat can be recognized through that the major international organizations such as the International Atomic Energy Agency (IAEA) or the Global Initiative to Combat Nuclear Terrorism (GICNT) place great emphasis on this area and seek to raise awareness of the threat and consequences of nuclear terrorism because increasing terrorism results in growing chance to have different nuclear security events like a radiological terror attack or other possibilities for different type of radiological crime scenes. Besides, all nuclear or other radioactive materials found out of regulatory control needs investigation behind in order to find linkages between the material and people, places and events. That is nuclear forensics is a crucial tool of a state's Nuclear Security Infrastructure in order to support the investigation [1].

The safe and secure collection of these materials at a crime scene, together with ensuring chain of custody is the area of radiological crime scene management (RCSM) [2] which should be supported by nuclear forensics through the in-field categorization of the material to plan the safe and secure transport, to inform the receiving laboratory and to ensure chain of custody also during the nuclear forensic examination. RCSM is a relatively new and emerging area in all over the world, only a few states have developed operating procedure for RCSM.

In Hungary, a Nuclear Security Working Group has been established in 2016 with agreement and participation of all the relevant comepeten authorites as the Hungarian Regulatory Body, Hungarian Police, Counter Terrorism Centre, Disaster Management, Bomb Squad, Traditional Forensics Institute, Defense Forces, Health Services and others. At that time Hungary commetted to establish its national Nuclear Security Response Framework and the RCSM procedure. In the frame of a national project funded by the Hungarian Ministry of Interior, the RCSM procedure was developed in cooperation of the Hungarian Police Criminal Forensics Departament and the Centre for Energy Research, Nuclear Forensics Laboratory. 400 investigators were trained for the RCSM procedure in Hungary, in 2019 and this training was integrated into the crime scene investigation educational program of the Hungarian Poice Academy. Besides, the procedure was published [3] in English in 2020 and successfully demonstrated at the International Conference on Nuclear Security of the IAEA in February 2020 (ICONS2020) and at the 65th General Conference of the IAEA in Seprember 2021 in Vienna.

The Hungarian RCSM procedure has some unique characteistics, law enforcement and scientists cooperating work at the scene (strong scientific support by nuclear forensic experts and nucelar physicists), a special dressing procedure and contamination control. During the development of the operating procedure, Hungary has also established close connection between RCSM and nuclear forensics through HPGe in-field categorization of the material collected at the scene.

This work will present the Hungarian Operating Procedure for Radiological Crime Scene Management, some real cases as case studies, its successful demonstration at international events, as well as its proper application during the 7th Collaborative Material Exercise, organized by the Nuclear Forensics International Technical Working Group (ITWG), „Crime-Scene-in-the-box".

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