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Nuclear Forensics Awareness and Understanding

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Nuclear forensics is a relatively new and certainly a fascinating discipline in science gaining its attractiveness from the exploration of the unknown. As stated in the Communiqué of the Nuclear Security Summit held 2012 in Seoul “nuclear forensics can be an effective tool in determining the origin of detected nuclear and other radioactive materials and in providing evidence for the prosecution of acts of illicit trafficking and malicious uses.” It also resolved that “States are encouraged to work with one another, as well as with the IAEA, to develop and enhance nuclear forensics capabilities.”

In order to respond effectively in case of a nuclear security event States should possess nuclear forensics capabilities as integral part of their national response plan. Nuclear forensic capabilities are not limited to analytical means; they include the legal and regulatory framework, technical infrastructure and human capital.

Based on a sound understanding of the opportunities offered by nuclear forensic investigations and its limitations, policy makers can establish the basis for implementing nuclear forensic capabilities at national level. Decision makers of different authorities and organizations need to cooperate in order to ensure the integration of available resources in an efficient response mechanism with appropriate technical nuclear forensics required by measurement experts and law enforcement.

Each State should seek to acquire nuclear forensic capabilities enabling to provide competent authorities with relevant information on the nature of the nuclear security event and on the main characteristics of the interdicted material. Such capabilities are often referred to as nuclear forensics core capabilities. The information obtained by core capabilities has typically immediate relevance to the law enforcement investigations. They might, for instance, give answers to following basic questions: What is the material? Is it ours? Besides conducting the preliminary assessment of the material and determining if national laws have been broken, the core capabilities help in larger scale to strengthen overarching nuclear security controls, enable rapid and appropriate response, and in case advanced nuclear forensic analyses are desired, enable States to request and receive international assistance.

This paper will also highlight how to achieve global awareness in nuclear forensics through capacity building and various international co-operation projects.

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