

A Study on the Improvement of Nuclear Forensics Legal Regime in Korea

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1. Introduction

Preventing nuclear and radiological terrorism is to prevent terrorists from accessing the nuclear material and other radioactive material that goes into a nuclear weapon [1].

In this aspect, nuclear forensics is a critical component of security of these materials and an effective investigatory tool in providing evidence for the prosecution of these malicious acts related to the illicit materials [2]. Because nuclear forensic enhances a State's ability to assess and establish linkages between nuclear and radioactive materials, and those who have attempted to transport, possess, or use it without legitimate State control [3]. However, nuclear forensics is not yet reflected in the domestic laws [4].

Therefore, in this study, we examined related international laws and other important efforts. We compared legal regime improvement options between amending existing legislations and introducing new legislation. Then, based on the analysis, we suggested draft provisions of highest level national legislation on nuclear forensics.

2. Analysis

2.1. Review of related international laws and other important efforts

2.1.1. Amendment to the Convention on the Physical Protection of Nuclear Material (Amendment to the CPPNM)

Table I. Related Provisions of the Amendment to the CPPNM

Article 2 A

1. Each State Party shall establish, implement and maintain an appropriate physical protection regime applicable to nuclear material and nuclear facilities under its jurisdiction, with the aim of:

- (b) ensuring the implementation of rapid and comprehensive measures to located and, where appropriate, recover missing or stolen nuclear material; when the material is located outside its territory, that State Party shall act in accordance with article 5;

Article 5

2. In the case of theft, robbery or any other unlawful taking of nuclear material or credible threat thereof, State Parties shall, in accordance with their national law, co-operation and assistance to the maximum feasible extent in the recovery and protection of such material to any State that so requests.

Amendment to the CPPNM, adopted on 8 July, 2005, makes legally binding for expanded cooperation between and among States regarding rapid measures to locate and recover stolen or smuggled nuclear material, mitigate any radiological consequences of sabotage, and prevent and combat related offences [5]. The relevant provisions of this convention are shown in the Table I.

2.1.2. Seoul Communiqué

Seoul Communiqué was adapted on 27 March, 2012, as an outcome of 2012 Seoul Nuclear Security Summit. It emphasized nuclear forensics as the national measures for reducing and preventing the threat of nuclear terrorism. The relevant provision of this communiqué is shown in the Table II.

Table II. Related Provision of Seoul Communiqué

Nuclear Forensics

10. We recognize that 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. In this regard, we encourage States to work with one another, as well as with the IAEA, to develop and enhance nuclear forensics capabilities.

In this regard, they may combine the skills of both traditional and nuclear forensics through the development of a common set of definitions and standards; undertake research and share information and best practices, as appropriate. We also underscore the importance of international cooperation both in technology and human resource development to advance nuclear forensics.

2.2. Suggestions

2.2.1. Comparison of options: Amending existing act vs. Introducing new act

“The Act on measures for the protection of nuclear facilities, etc. and prevention of radiation disasters” is designed to prevent the illicit transfer of nuclear material and sabotage of nuclear material and facilities. This Act does not deal with radiological terrorism and does not deal with radioactive materials. The Act coping with the radioactive materials is “the Act on prevention of radiation disasters” [6]. The subject of nuclear forensics is not only nuclear material but also radioactive materials. So, to reflect forensics in the

domestic laws through amending the existing acts, we must amend these two Acts. Another approach is to amend “the Act of the Anti-Terrorism for the Protection of Citizens and Public Security”. In this Act, terrorism using with nuclear materials or/and radioactive materials is clearly defined as shown in Table III. And this Act includes the provisions on creation and operation of joint investigation team where a nuclear terrorist attack has occurred. However, the details for nuclear forensic are not included.

Table III. Related Provisions of the Act of the Anti-Terrorism

Article 2 (Definitions)

(1) The term “terrorism” means an act threatens the national security and safety of citizens falling under any of the following items;

5. Any of the following acts related to nuclear materials (referring to “nuclear materials” as defined in Article 2 (1) of the Act on Measure for the Protection of Nuclear Facilities, etc. and Prevention of Disasters Act; the same shall apply hereinafter), radioactive material (referring to a “radioactive material” as defined in Article 2 (5) of the Nuclear Safety Act; the same shall apply hereinafter); and a nuclear facility (referring to a “nuclear facility” as defined in Article 2 (2) of the Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Disasters Act; the same shall apply hereinafter):

- a. Destroying a nuclear reactor and damaging human life, body or property, or endangering public safety;
- b. Causing danger to human life or body by improperly manipulating radioactive material, etc, a nuclear reactor and related facilities, nuclear fuel cycle facilities or radiation generating device;
- c. Accepting, carrying, possessing, keeping, using, transporting, remodeling, disposing or dispersing nuclear materials ; and
- d. Destroying or damaging nuclear materials or a nuclear facility, or causing such, or interfering with the normal operation of a nuclear facility, resulting in discharge of radioactive materials or radiation leak

Enactment of an Act on Nuclear forensic would be comprehensive approach [6]. But the process is much complex than Amending. Therefore amending the acts is more reasonable option.

2.2.2. Draft provisions

Based on the Nuclear Legislation Implementation Kit, presented by the Republic of Indonesia to the 2014 Hague Nuclear Security Summit, we suggest the draft provision of highest level national legislation on nuclear forensics as shown in Table IV ; [8]

Table IV. Draft provision on nuclear forensics

Investigations and enquiries, prosecution and extradition

If the Nuclear Safety and Security Commission receives information that an offence under this Act has been committed or is being committed in the territory of the Republic of Korea or that a person who has committed or who is alleged to have committed such an offence may be present in the Republic of Korea, the Nuclear Safety and Security Commission shall investigate the facts contained in the information, in accordance with national law and the code of criminal procedure of the Republic of Korea. The Nuclear Safety and Security Commission is authorized under this Act to apply nuclear forensics to an investigation under this Section.

3. Conclusions

We reviewed the analysis of international laws and other important efforts on nuclear forensics to improve of domestic legislations on the nuclear forensics. Through the review of current international movement on the nuclear forensics, we concluded as follows;

- (a) The state government must be responsible for the nuclear forensics
- (b) Appropriate administrative regulations on nuclear forensics is required within the highest level legislation
- (c) The purpose of the nuclear forensics is to counter nuclear terrorism, the role of Nuclear Safety and Security Commission (NSSC) must be clarified within the law

The improvement measures proposed in this study will lay the foundation for future legislative amendments as they seek to strengthen the national nuclear forensics capabilities against nuclear terrorism and to prepare for the enter into force of Amendment to the CPPNM.

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