Consideration on Re-Establishment of the National Physical Protection Regime in Follow-up Measures for the 2012 Seoul Nuclear Security Summit

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1. Introduction

The main goal of the Nuclear Security Summit(NSS) was to substantially improve protection for nuclear facilities and materials among the Member States. Member States need to urgently establish effective systems of physical protection, as well as radiological emergency preparedness. The Korea government has in depth considered for solving this issue before holding the 2012 NSS in Seoul. The KINAC has reviewed the substantial countermeasures to improve the domestic system, and the proposed 'discussion on the interface between nuclear security and safety' in Seoul Communique during the 2012 NSS. This paper describes not only an approach to seek its solution, but also suggestions improving the interface between nuclear security and safety.

2. Substantial Measures for Preparing the 2012 NSS

2.1 Consolidated Security Culture

2.1.1 Liaison with Competent Authorities

Since the Fukusima accident, many people have recognized not only the importance of safety, but also that of security at nuclear facilities. In the other words, 'Safety issues' are directly connected with 'Security issues'. It is necessary to take practical measures for physical protection, as well as in depth to review the relationship between the both issues. To accomplish these tasks (namely, safety and security), it is essential for Member States(specially, competent authorities) to closely cooperate in order to establish an effective system of physical protection in accordance with international guideline of INFCIRC/ 225/Rev.5.

Korea has established a coordinated system consisting its various governmental bodies. These entities include the Nuclear Safety and Security Commission(NSSC), the National Intelligence Service(NIS), the Ministry of Defense(MOD) and the Ministry of Foreign Affairs and Trade(MOFAT).

2.1.2 Strengthened Regulatory System for Education

As mentioned above, security issues have a direct relationship with educational affairs in the nuclear field. A security culture can be achieved through a system of educational programs, human resource development and the creation of long term goals. In this context, the Korean government has strengthened educational regulations for physical protection. It has expanded the number of educatees (about eight hundreds) as well as reinforced a reporting system for post-education feedback.

2.2 Practical Actions and Its Progress

2.2.1 Strengthen Physical Protection Measures

Korea has been strengthening its physical protection measures against potential threats such as sabotage and terrorist attacks against domestic nuclear facilities (pursuant to INFCIRC/225/Rev.5). As a part of this improvement, a 'Force-on-Force Exercise' was carried out at the Kori nuclear facility in 2011, pursuant to a legal regular inspection, and a 'Table-Top Exercise' workshop was held at the Younggwang nuclear facility.

2.2.2 Threat Assessment System

Since Korea established a design basis threat (DBT) in 2009, all nuclear licensees have formulated diverse response scenarios against possible threats, based on the individual facility's DBT. In addition, Korean nuclear experts along with KINAC have been reassessing potential threats in order to renew the existing DBT, and to re-establish effective systems of physical protection in Korea. In 2012, the Korean government will introduce a new DBT for the domestic legal system.

2.2.3 Vital Area Identification and Its Protection

The Fukusima accident has given us a very important lessons in regard to the vulnerability of nuclear facilities. Therefore, it will be necessary to take practical measures to protect the vital areas of nuclear facility. Korea has been taking more active measures in solving conflict between security and safety in existing vital areas as well as improving safety systems at nuclear facilities.

2.2.4 Working groups on physical protection

In order to support the governmental mission on physical protection, KINAC has organized the 'Working Group of Physical Protection(WGPP)' to discuss tasks such as : threat assessment, vital area identification and cyber security.

3. Suggestions for Solving the Interface between Nuclear Security and Safety

3.1 Analysis for Main Contents of IAEA-INSAG 24

As part of solution for solving the interface between nuclear safety and security, IAEA-INSAG 24 emphasizes that the interface has to closely cooperate between both sides, starting from the siting stage of a nuclear facility to its maintenance stage, as described in Table 1.

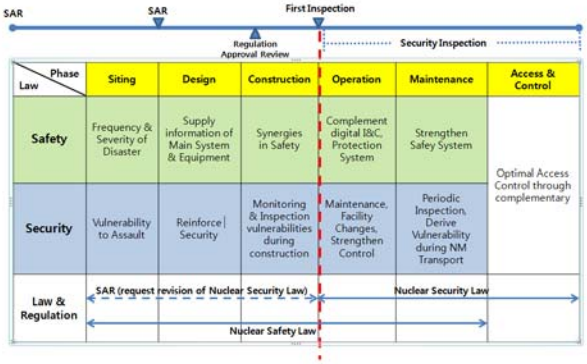

Table 1. Cooperative mechanism for solving the interface between nuclear safety and security, and the current status of Korean legal system

It means that the both sides have to share information with each other, and seek appropriate methodology to solve conflicts in each field. IAEA-INSAG 24 recommends that the both sides also have to closely cooperate in life cycle of nuclear facility.

3.2 Result Analyzed for Solving the Interface

It would be necessary, as a basic approach, for us to seek and review international norm, instruments and guideline for each field, and to make a consensus and exchange correct information on-site. As a result of this analysis, it could be suggested an initial approach for solving the interface between the both sides as following items. 1) Physical security of 13.6 session for safety analysis report, 2) Vital area identification, 3) Cyber security, 4) Nuclear forensics, etc.

3.3 Overall Schedule for Solving the Interface

As mentioned above, an overall schedule could be suggested to solve the interface between the both sides. KINAC has established an overall schedule to follow up this issue with Korean competent authorities as described in Table 2. These items will be carried out through cooperating with the working groups involved in physical protection and safety experts in near future.

Table 2. the Overall Schedule to Follow up each Item related the Interface

3. Conclusions

1. 'Safety issue' is directly connected with 'Security issue'. Therefore, it will be necessary to take practical measures in physical protection, as well as in depth review of the relationship between the both issues.

2. In this context, Korea has been taking the following measures in physical protection at all nuclear facilities, in close cooperation with NSSC, NIS, MOD and MOFAT. These measures include: carrying out a 'Table-Top Exercise', 'Force-on-Force Exercise' and strengthening 'Vital areas' at domestic nuclear facilities.

3. For solving the interface between nuclear security and safety, the following approaches is suggested : 1) Physical security of 13.6 session for safety analysis report, 2) Vital area identification, 3) Cyber security, 4) Nuclear forensics

4. KINAC has established the overall schedule to follow up the interface issue with Korean competent authorities. Each item would need to be reviewed in depth, as well as need to closely cooperate with working groups involved in physical protection and safety experts.

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