

A Study on the National Nuclear Nonproliferation Control Education

Hyun Kyung Lee

*Korea Institute of Nuclear Nonproliferation and Control, 103-6 Munji-dong, Yuseong-gu, Daejeon, 305-732
hklee@kinac.re.kr*

1. Introduction

The ROK established a legal basis for the education on nuclear control by amending Atomic Energy Act in December 2005 in order to increase transparency of nuclear activities and ensure reliability from the international society right after the event of nuclear material experiment at KAERI in 2004.

Persons prescribed by Enforcement Decree among nuclear licensees and persons performing nuclear power-related research should take education on safeguards and export/import control. As Enforcement Regulation effectuated in July 2006, so far two times of education courses have been carried out.

Since this is just the first step toward systematic nuclear control education, it would be appropriate at this time to examine the other state's nuclear related education programmes and consider direction of nuclear control education where our state has to go.

2. Nuclear control education system

Article 105 regarding nuclear control education was newly inserted into Atomic Energy Act on 30 December 2005. In addition, following Enforcement Decree and Regulation of Atomic Energy Act came into force in June and July 2006 respectively. Enforcement Regulation of Atomic Energy Act prescribes persons who should undergo education, credit hours, education methods, curriculum and so on. In case when a person violates the provision of above articles, a fine shall be imposed on such a person.

2.1 Person liable for education

Currently, persons who have to take compulsory nuclear control education are classified into two parts: 1) Persons who are engaged in safeguards on specific nuclear materials; 2) Persons performing nuclear related research.

1) Persons who are engaged in safeguards on specific nuclear materials

There are five groups of persons who are engaged in safeguards on specific nuclear materials:

- ① Installer of nuclear power reactor
- ② Operator of nuclear power reactor
- ③ Installer of nuclear research reactor
- ④ Nuclear fuel cycle enterpriser

⑤ User of nuclear materials.

2) Persons performing nuclear related research

Persons performing nuclear related research refer to the persons in charge of the research projects that are related to research and development on the process of nuclear fuel cycle or the systems[1].

The most of the persons who are liable to nuclear control education belong to KAERI(research institute), KHNP(power reactor company), KNFC(fuel fabrication company), KEPRI(research institute) or Universities. Education courses are divided into two types. The first education course was performed in Nov. 2006 and the refresher education course was performed in May 2007.

2.2 Education Programme

Education programme by educatee are composed like following table 1.

Table 1. Education programme[2]

educatee type	credit hour		curriculum	methods
	new	refresher		
Persons who are engaged in safeguards on specific nuclear materials	not less than 16 hours	not less than 8 hours per year (but not less than 2 hours in case when a person take 3 times of refresher education)	<ul style="list-style-type: none"> ·law& international agreement related to nuclear control ·Affairs related to nuclear control policy ·safeguards on nuclear material · export & import on internationally controlled nuclear materials ·international cooperation related to nuclear control ·safeguards equipment ·affairs related reporting of nuclear material account 	theory, practice

Persons performing nuclear related research.	not less than 8 hours	not less than 4 per year (but not less than 2 hours in case when person take 3 times of refresher education)	<ul style="list-style-type: none"> ·law& international agreement related to nuclear control ·Affairs related to nuclear control policy ·safeguards on nuclear material · export & import on internationally controlled nuclear materials ·international cooperation related to nuclear control 	theory, practice
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hub for nuclear nonproliferation studies. NPSTC intends to continue to expand nuclear nonproliferation cooperation.

· *Cooperation between the University of Tokyo and JAEA*

The University of Tokyo and JAEA concluded a cooperation agreement for human resources development. Four visiting(associate) professors have been sent from NPSTC/JAEA to the University of Tokyo for nonproliferation education. Cooperation programs will be strengthened so that students can take part in the nuclear nonproliferation policy study that JAEA carries out, if they wish.[3]

4. Conclusion

Currently, domestic education on nuclear control is being conducted only for the persons liable for education compulsorily as early stage of systematic education. Hence more well organized and improved nuclear control education system should be provided by reflecting demands of educatee and introducing high quality education programmes. In addition, education programmes linking universities with other organizations like the case of Japan should be attempted so that students in university as well as persons in fields can take nuclear control education not limiting the subjects of education only to legal obligators. Also an effort to train for nonproliferation expert should be made.

REFERENCES

- [1] Enforcement Decree of Atomic Energy Act, Article 295.2, June 2006
- [2] Regulation of Atomic Energy Act, Article 106.2, July 2006
- [3] Hisaharu Dosho, Nuclear Nonproliferation Education at the University of Tokyo, Journal of Nuclear Materials Management, Vol. XXXIV, No.4. pp. 14-16, Summer 2006.

2.3 A survey on education course

Several demands investigated by posing questions are as follows:

- redundancy of contents,
- education helpful to practical business area,
- supplementary audio-visual education materials,
- shortening of education time,
- necessity of education materials.

3. Case of other State's education

3.1 Japan

- The University of Tokyo

The University of Tokyo established the Department of Nuclear Engineering and Management in the Graduate School of Engineering on April 1, 2005. At the same time, nuclear nonproliferation education programs were started in the new department to educate experts who intend to contribute to international organizations such as International Atomic Energy Agency(IAEA).

There are 24 professors in the department and three courses are offered for students. One of three courses covers nuclear nonproliferation, international safeguards, and international cooperation.

- *JAEA*

The Japan Atomic Energy Agency(JAEA) was established by merging the Japan Atomic Research Institute(JAERI) and the Japan Nuclear Cycle Development Institute(JNC) on October 1, 2005. The Nuclear Nonproliferation Science and Technology Center(NPSTC) was established as part of JAEA to conduct the studies on the strategy for nuclear nonproliferation research. The center aims to be a research