

Comparative study on home and abroad regulation system regarding DU

Jae Beom Park, Kyong-Woo Lee,

National Nuclear Management and Control Agency, P.O. Box 114, Yuseong, Daejeon, 305-600, Korea

jbpark-nnca@kins.re.kr

1. Introduction

Depleted Uranium(DU) is a by-product of the enrichment of natural or reprocessed uranium. DU means uranium in which the abundance of the isotope uranium-235 is less than that occurring in natural uranium. Most of stocks of depleted uranium was made of result of enrichment operations. As of end of 2003, world stock of depleted uranium are estimated at around 1.2million uranium ton¹. This stockpile has been contained primarily in the form of uranium hexafluoride in metal cylinders and stored at enrichment facilities. Depleted uranium is a potentially valuable resource, with identified uses as an energy source and in shielding and industrial applications. International Atomic Energy Agency(IAEA) did not urge to establish the law supervising the small-quantity nuclear material including depleted uranium. Recently, IAEA has requested Korea to establish and manage the law ruling all nuclear materials through the INFCIRC/153. Korea has tried their best to accomplish the international standard of small quantity nuclear material including depleted uranium.

2. Comparative study on the regulation system

2-1 France

The French regulatory system related to protection and control of nuclear material is an original system based on detailed and comprehensive regulations, taking into account in a specific way the small users of

nuclear material. Each articles regarding small quantity nuclear material are as below.

Law no. 80-572 of 25 July 1980

- licenses are required by anyone to undertake activities in the following fields : import, export, storage, use and transport of nuclear materials. At this stage, no categorization for the quantity.
- Responsibility for the nuclear materials.
- Penalty system

Decree no. 81-512 of 12 May 1981

Order of 14 March 1984

The declaration regime applies to quantities of depleted uranium or thorium, greater than 1kg and not greater than 500kg.

2-2 Australia

As a note of background, the way that Australian Safeguards & Non-Proliferation Office(ASNO) maintains control and knowledge of nuclear material in Australia, is through a permit system - as required under the Nuclear Non-Proliferation (Safeguards) Act 1987². Every possessor of nuclear material must have a permit.

- These permits list a number of reporting requirements such as (a) yearly inventory reports, (b) export/import notifications, (c) domestic retransfer notifications etc.

Most universities have small amounts of nuclear material in chemistry labs or geology labs. Most big

¹ Management of depleted uranium

² Nuclear Non-Proliferation Regulations 1987, Australia

universities in Australia have had a permit from ASNO for more than 15 years.

2-3 Japan

Domestic legal system in Japan comprises “The law for the regulations of nuclear source material, nuclear fuel material and reactors” (shorten name is “Reactors Regulation Law”), “Ordinance for the enforcement of the law for the regulation of nuclear source material, nuclear fuel material and reactors” (“Ordinance”), and “Regulation for use of international controlled materials” (“Regulation”).

The rules for notification of business discontinuance are prescribed in Article 65 and Article 66 of “Reactors Regulation Law”, and Article 5 and Article 6 of “Regulation”. Penal provisions are prescribed in those Articles from Article 78 to Article 83.

Reporting system for exempted DU

- Domestic legal system requires accounting report, such as ICR, MBR, and PIL for all nuclear material, even for the exempted DU. That means that exempted DU is exempted only from the IAEA Safeguards Accounting System, but not from the SSAC system.

2-4 Korea

On the basis of the another countries’ experience, Korea is trying to upgrade control process for the small quantity nuclear materials.

Korea periodically gathering the data for the small quantity nuclear materials. There are several articles regarding small quantity nuclear material as below.

Nuclear Laws of the Republic of Korea

- Article 2(Definition) 17 clause :
- Article 3(Internationally Controlled Materials) 8 clause

- Article 103 (Report, Inspection, etc.) 4 clause , 6 clause

Enforcement Degree of the Atomic Energy Act

- Article 324(Persons Subject to Report and Submission of Documents)

Notice of the Ministry of Science and Technology No. 2004-4

- Article 2(Special nuclear Materials Subject to Accountancy and Control)

3. Conclusion

We should study foreign regulation systems for study of small-quantity nuclear material in domestic. On the foundation of the study, we should satisfy all the requirements for regulation system regarding small quantity nuclear material and present reasonable guidelines to holders which have small quantity nuclear materials.

REFERENCES

- [1] Study for exempted and unreported nuclear material, Korea Association for Promotion of Nondestructive Testing (2004.5).
- [2] Reactors Regulation Law, Japan
- [3] Management of Depleted Uranium, Joint Report by the OECD Nuclear Energy Agency & the IAEA (2003)
- [4] Nuclear Non-Proliferation Regulations 1987, Australia
- [5] The French Approach for Control and Protection of Nuclear Materials in the Industrial, Medical and Research Fields, 2001, L. Pillette-Cousin,