

Comparative study on the Nuclear Energy Laws of Korea and Japan

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1. Introduction

Nuclear materials are commonly used for civil and military purposes. These materials are used in medical, industrial and research fields. Applications for depleted uranium include radiation shielding material used in radiological-camera devices, protecting people from radioactive sources used in the medical and industrial fields. Industrial gamma radiography uses sealed radioactive sources.

Depleted Uranium(DU) is a by-product of enriched or reprocessed uranium. DU refers to uranium in which the isotopes of uranium-235 are less than that occurring in natural. Most stocks of depleted uranium were made of result of enrichment operations.

The IAEA requested that Korea establish and manage laws governing all nuclear materials through the INFCIRC/153. Korea has tried its best to meet this international standard of regulating nuclear materials, including small quantity nuclear materials. The government has also ask KINAC to establish a system for monitoring nuclear material in the industrial fields.

Regarding this issue, it is beneficial to make an in depth study of Japan's regulation system. Because Japan has a similar industrial structure and law system, surveying Japan's system for DU management can be a good guide to establish a management system for small quantity nuclear materials in Korea.

2. Regulation system of the Japan for SQNM

The domestic legal system in Japan is comprised of :
“The law for the regulations of nuclear source material, nuclear fuel material and reactors”(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 the notification of business discontinuance are prescribed in Article 65 and Article 66 of the Reactors Regulation Law, and Article 5 and Article 6 of Regulation. Penalty provisions are prescribed in those Articles from Article 78 to Article 83.

Article 39 enacted the quantity and type of nuclear materials in approval exemption as listed below.

- Uranium with uranium 235 mixed at a natural ratio with uranium 238, and is compounds(Uranium up to 300 grams in quantity)
- Uranium with uranium 235 mixed at a ratio smaller than natural with uranium 238, and its compounds(Uranium up to 300 grams in quantity)
- Material, containing one or more of such materials as mentioned in the preceding items, which can be used for fuel in nuclear reactors(Uranium up to 300 grams in quantity)
- Thorium and its compounds.(Thorium up to 900 grams in quantity)

- Material, containing one or more of such materials as mentioned in the preceding item, which can be used for fuel in nuclear reactors(Thorium up to 900 grams in quantity)

3. Regulation system in Korea for SQNM

Basis on requests from the IAEA, Korea has tried to upgrade the control process for small quantity nuclear materials.

Korea is periodically gathering data for small quantity nuclear materials from other countries. There are several articles regarding small quantity nuclear material as listed below.

Nuclear Laws of the Republic of Korea

- Uranium 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

Historically, regulation systems in Korea followed that of the Japan. Energy Act in Korea is vague and not clear enough to manage nuclear material. The management of the Depleted Uranium needs to be clear for industrial growth. It is difficult to maintain independent reporting in companies.

To develop Korea's management skills for depleted uranium, a study of Japan regulation systems will be benefiting to Korea in establishing a domestic management system of small-quantity nuclear material. On the foundation of the study, we should satisfy all the requirements for a regulation system regarding small quantity nuclear material and present reasonable guidelines to holders of small quantity nuclear materials.

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