

Proposed Regulation System for the Use of Small Quantities of Nuclear Material in Korea

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I. Introduction

The Atomic Energy legislation does not require a person who intends to use or possess SQM (small quantities of nuclear material, below 300 grams of an uranium equivalent) to obtain a license or permit to use or possess such material. The absence of this requirement is an obstacle to the SSAC's (state system of accounting for and control) ability to effectively account for and control all nuclear material. Due to the differences of the meanings of some terminology used in the Korean Atomic Energy Law and its related regulations to those of safeguards agreement and its Protocol, there is a possibility of a difficulty occurring in the implementation of safeguards obligations.

The objectives of this work are to establish an effective and rational control system for the SQM not required to obtain a license for its use or possession in Korea, and to review the definitions of some terminology used in the Atomic Energy legislation, IAEA's legal documents and guidelines to avoid any confusion in the implementation of international obligations in the nuclear control area.

2. Results of the Review

The domestic regulations and international documents for the use of SQM are reviewed from the point of view of the nuclear control such as accounting for and control of nuclear materials, physical protection and export/import control.

The foreign nuclear control legislations of Japan and Canada as non-nuclear weapon states are reviewed to establish an effective and rational control system for the SQM in Korea. Japanese regulations for the control of nuclear material such as the license requirements of the uses of nuclear materials and international controlled materials are carefully reviewed since the Japanese nuclear control legislation is very similar to that of Korea.

The status of the user of SQM and the obstacles of the Safeguards implementation for accounting for and control of such a nuclear material are analyzed and the some improved managing schemes of the SQM are proposed.

On the other hand, the definition of legal glossary related to the nuclear control in Korean nuclear regulations such as Korean Atomic Energy Law, Presidential Decree, Regulations, Public Notices are reviewed and compared to those of IAEA documents to clarify the differences of their meanings. The different terminology are examined to see if it can be adapted as a legal terminology for avoiding the confusion in the implementation of Safeguards obligations.

2.1 Person subjected to seek a permit or license

The Atomic Energy Act regulates the use of nuclear material on the basis of nuclear enterprise owners or activities on a nuclear fuel material. As far as the

nuclear enterprise owners seeking a permit for the use of nuclear material are concerned, the legislation includes the provisions necessary for implementing SSAC of nuclear material, which is required to meet safeguard obligations under the Safeguards Agreement and Additional Protocol. On the other hand, for those who intend to possess a nuclear material, the law classifies them as users of a nuclear fuel material or declarers of a nuclear raw material, and obliges them to submit accounting reports of a nuclear material.

2.2 Possessors of SQM not subjected to seek a permit

The users not seeking permit for a nuclear fuel material or declaration of a nuclear raw material under the Atomic Energy Act, are not required to establish any regulation of, nor subject to inspection on accounting for a nuclear material. However, they are obliged to submit reports and to keep relevant documents according to article 103 of the Atomic Energy Act, since they are users of an internationally controlled material. The difficulties in identifying these users of SQM cause serious problems in accounting for a nuclear material.

Japanese law obliges those SQM users to establish a regulation of accounting for a nuclear material, although they are not subject to seek a permit for the use of a nuclear fuel material. Furthermore, the regulation system of which the Ministry of Education and Science supervises the regulatory procedure on an internationally controlled material has an advantage in responding to international trends effectively. The Japanese system can be adopted as one of the models that can be used in managing SQM. On the other hand, Canadian legislation turns out to be very hard to implement in the Korean legal system due to the different legal system.

2.3 Definitions for the terminology used in the legislation

The facts that the legal terminology used in SG Agreement can be inconsistent with those in the national law may yield confusion in implementing a safeguard system, since the terms defined in laws, treaties or agreements may be used with different meanings. It seems that it is reasonable to accept the definitions of the legal terms as they are prescribed in current laws rather than to amend the legal systems, since the amendments, which may affect the whole legal systems, demand a great deal of resources, endeavor and time. The settlement of internationally accepted terminology into a national legal system would be considered when the current legal system needs to be amended. Examples of the confusing legal terminology with "nuclear material" are "nuclear fuel material", "nuclear raw material", "source material", "special fissionable material", "specified nuclear material", and "special nuclear material." Since the term "facility" is defined in a SG Agreement with a special meaning, the term "facility" should not be confused with a generic "facility or installations" and nuclear "installation."

3. Assessments of proposed regulating scenarios

Four scenarios of a nuclear control regulation system to eliminate the obstacles are also proposed and analyzed

3.1 Scenario I: introduction of permit system for the SQM in the Law

The key intent of the amendment is the introduction of the permit and declaration of the use of a nuclear material as a internationally controlled material in order to subject all of the nuclear material users to the legal system, which is similar to the Japanese legal systems. This way of a nuclear material control is rational and meets international treaties and agreements. Although this scenario enables one to control a nuclear material consistently and to meet the ISSAS (International SSAC Advisory Service) recommendations satisfactorily, the scenario must be an one-sided policy based on the regulations which would impose a heavy burden on the users. Furthermore an amendment of the law needs to obtain a consent from the National Assembly. Abrupt changes in legal system can negatively influence the industrial sectors such as a nondestructive test and other non-nuclear related industries.

3.2 Scenario II: introduction of user declaration system

Under articles 103 or 106 of the Atomic Energy Act, the notices can be revised to impose a declaration or permit of usage for the cases of imports of uranium for shielding irradiation devices and to add supplements to let the nondestructive test industries declare the current use of the shielding uranium within the allowed periods of a enforcement. The enforcement of the revised notices enables a legitimately of the officials to control and identify all nuclear material. This scenario guarantees rationalities a controlling a nuclear material and in managing the nuclear material systematically without imposing one-sided regulations on users. Although there might be some inconsistencies between the current system and the revised one, the lists of users and their possessions of a nuclear material which have been investigated by and kept in the KINAC(Korea Institute of Nuclear Non-proliferation and Control) surely can be used to overcome any mismatches in the book-keepings. Also this scenario easily enables one to follow some changes in international standards of agreements.

3.3 Scenario III : current legal system with the strengthened KINAC's role in guidance

Scenario III is plotted on the basis of a strengthened KINAC's role in guidance under the current reporting system of an internationally controlled material. First, let the nondestructive test industries register the shielding uranium materials through the registering system which is established by the Association of the Nondestructive Testing Industry as a self-regulation measure. Second, the use of a SQM of less than 300g is accounted for the exempted material. Since this scenario entirely relies on a self-regulation of the industry, it's practical effectiveness may be questioned from the viewpoints of the international treaties and agreements. Absolutely there is no legal measures to control the enterprises when they go bankrupt or closes businesses.

3.4 Scenario IV : amendment of subordinate regulations containing international agreements

Scenario IV is plotted on the basis of the revision of the legal system to accept the international treaties and agreements as a part of the body of the law, which is very similar to the Canadian legal system. This scenario is the most reasonable and systematic way of controlling of a nuclear material, but the Korean legal system does not allow us to implement the treaties and agreements directly. Also, implementation of this kind of law does not guarantee a practical effectiveness, because the new system may initiate many confusions until the system settles down.

4. Conclusion

Scenario II is the optimized option which can be implemented effectively without heavily altering the current legal systems. It will provide a robust system to implement the strengthened safeguards agreements without withering the nuclear industry and R&D activities using SQM. The clarified definition of the legal terminology in a nuclear control system will decrease the confusion of the related nuclear enterpriser and the national and IAEA inspectors in the implementation of Safeguards obligations. The establishment of a nuclear control system in accordance with the international agreement will contribute to the transparency of the nuclear activities of Korea.

5. References

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