Transactions of the Korean Nuclear Society Autumn Meeting
Gyeongju, Korea, October 24-25, 2013

A study on the validity of strategic classification processes

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1. Introduction

International community is trying to prevent the spread of WMD (Weapons of Mass Destruction), especially nuclear weapons. These efforts resulted in the declaration of UNSC Resolution 1540 in 2004, which made export controls the international norms for all nations in the world. Korea already enacted Foreign Trade Act for export control in 1989.

Export control system in Korea consists of commodity classification and export license. The commodity classification is to identify strategic commodity. The export license is to verify that exports have met the conditions required by the international export control system.

NSSC (Nuclear Safety and Security Commission) operates the NEPS (Nuclear Export Promotion Service) for export control of nuclear items. NEPS contributed to reduce process time related to submission of documents, issuing certificates and licenses, etc.

Nonetheless, it became necessary to enhance capacity to implement export control precisely and efficiently as development of Korean nuclear industry led to sharp increase of export. To provide more efficient ways, development of the advanced export control system, IXCS (Intelligent eXport Control System) was suggested [2].

To build IXCS successfully, export control experts have analyzed Korean export control system. Two classification processes of items and technology were derived as a result of the research. However, it may reflect real cases insufficiently because it is derived by experts' discussion. This study evaluated how well the process explains real cases.

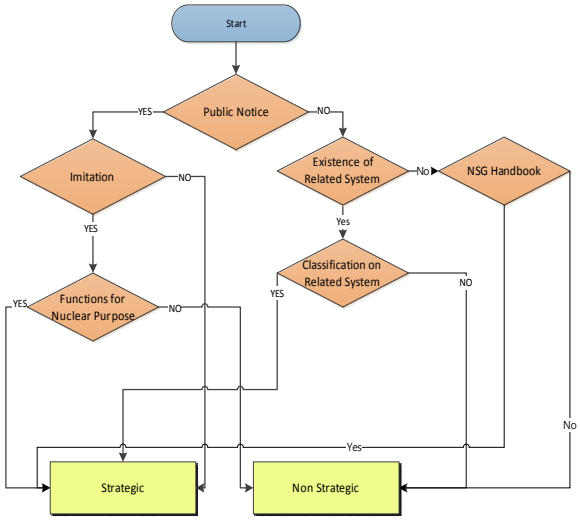
2. Method and Results

To evaluate the classification processes, 150 cases on NEPS between Jan 2008 to Aug 2012 were used. They are separated into technology and non-technology because their characteristics differ much in classification processes. Sixty-six cases were equipment and 84 cases were technology. Technology related to UAE nuclear power plant and Jordan research reactor were excluded because they are unusual and The number of cases is very large.

Data and reports on each case are registered on NEPS. They were used for identifying critical factors as they contained most information necessary for classification. As a result, some problems and improvement measures were found out.

2.1. Equipment and Material

The following flow chart shows the classification process of equipment and material. The stage, "Public Notice", is to find out related items on the public notice. Imitations mean equipment or material inferior to items on the public notice.



Twelve cases were strategic items among 66 cases of equipment and material. All of them were listed on the public notice (public notice on trade of strategic items) [1].

Only one case was an imitation of nuclear equipment on the public list among strategic equipment and material. It was scraps of zirconium tubes. They can be used for nuclear reactor although it has inferior specification to normal zirconium tubes. Therefore, they are treated as strategic items on the public notice.

The concept of an imitation is ambiguous and unusual. Considering there is only one case concerning imitations, the "imitations" stage is unnecessary.

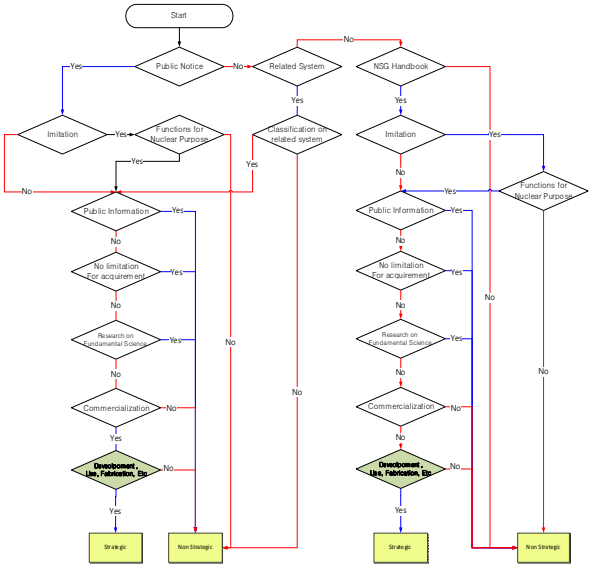
If equipment or material were not on the public notice, it may be not strategic item. However, its function and specification should be reviewed because it can be diverted to manufacture nuclear weapon. Such items are usually controlled by catch-all clauses. Therefore, It is necessary to check specification of equipment or material.

There was no case that belongs to strategic items due to their related systems. It seems that there is no need

to consider related systems. Without stages such as "Existence of Related System", "NSG Handbook", "Classification on Related System", Classification of equipment and material is possible. They are considered as excessive stages.

2.2. Technology

The following flow chart shows the classification process of technology. The flow chart of nuclear technology is more complicate than those of nuclear equipment or material because they have various forms and sizes.



Contrary to classification of nuclear items, identifying a related system is an important factor to classify technology concerning to nuclear reactor exports. Even if technology is related to equipment other than items on the public notice, it can be controlled as technology for use of nuclear reactor if it can be used to regulate nuclear power plant's power level. However, it was not mentioned in most cases explicitly. It is a significant improvement that this stage is specified in the process explicitly

The most important stage is to identify specific information about development, use, fabrication of nuclear equipment and material. It is subjective to decide whether nuclear technologies have specific information and data or not because there is no specific criterion.

According to the analysis result, sizes, operation processes, calculations, algorithms, material information, experimental results, etc are suggested as specific information and data. It means that this stage can be divided into detailed stages. It is recommendable because it is difficult to put these criteria into just one stage together.

There was no strategic technology concerning to imitations. It is also considered as an excessive stage in classification of technology.

3. Conclusion

Although the derived processes explained real cases well, some recommendations for improvement were found through this study. These evaluation results will help to make classification flow charts more compatible to the current export system.

Most classification reports on equipment and material deliberated specification and functions while related systems were not considered. If a "specification review" stage is added to the current process and delete unnecessary stages, this will improve accuracy of the flow chart.

In the classification of nuclear technology, detailed process to identify specific information and data need to be specified to decrease subjectivity.

Whether they are imitations or not is an unnecessary factor in both processes.

The successful development of IXCS needs accurate export control processes as well as IT technology. If these classification processes are improved more, it will provide the fundamental foundation to IXCS.

REFERENCES

[1] MOTIE, public notice 2013-39, Public Notice on Trade of Strategic Items, 2013.
[2] KINAC, Intelligent Export Control System Development for Nuclear Strategic Items, 2013