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Research on the re-establishment of the classification criteria of strategic items

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1. Introduction

Generally, strategic items mean the commodities and technology which can be developed, produced and used for WMD (Weapons of Mass Destruction), and these items are composed of Trigger List Items and Dual Use Items. Some countries including Korea are operating the export control laws and regulations such as classification and export licensing, to manage and export these items. According to these export control laws and regulations, the exporters have to apply the review for classification and export licensing to their own government.

In this process, a technical review institute such as Korea Institute of Nuclear Nonproliferation and Control (institute under the NSSC) are referring to Minister's Regulation for the Export and Import of Strategic Goods. In this regulation, there are many criteria to classify the strategic items to be exported. But there are some problems in these criteria. At Typical problem is that classification criteria of Trigger List Items generally is very qualitative and very obscure in contrast with Dual Use Items. So, in most cases, this characteristics of classification criteria of trigger list items have caused much trouble for stakeholders such as government and nuclear related companies. So, there were needs that the classification criteria had to be more correct, obvious and objective.

To solve these problems, the past classification cases for technology were re-analyzed and the general criteria were deducted in this study.

2. Methodology and Results

To do previously mentioned researches, the analysis and deduction process was established as shown in Fig. 1. The research process was composed of 4 nodes.

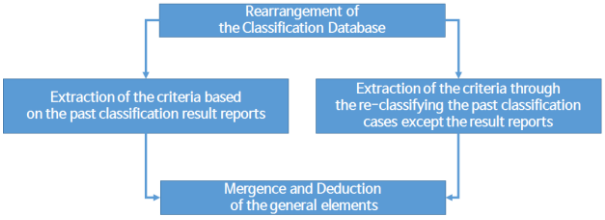

Fig.1. The Research Process in Criteria re-establishment

2.1. Rearrangement of the Classification Database

The past classification database was rearranged to be easily analyzed and reviewed. The database was composed of 1,117 technical documents such as drawing, reports for specification, requirements, criteria etc. Applicants (or vendors) for these documents were nuclear related institutes such as KEPCO(Korea Electronic Power Corporation), KHNP(Korea Hydro Nuclear Power), and KAERI(Korea Atomic Energy Research Institute). In this database, there were 489 numbers of drawings, 69 of specification and requirements reports, 559 of operation manuals and uncategorized reports.

2.2. Extraction of the Criteria based on the past classification result reports

To extract the classification criteria, the past result reports were categorized and analyzed. The result reports were composed of three sections in most cases. There were document's background, contents summary, information of the exporter and importer, and etc. in the first section. In the second section, there were review results for the applied documents such as classification results and control number (ex.0A001.a, 0A001.f, etc.). In the third sections, there were the information referred in the review process.

In this study, contents summary in the first section and review results in the second sections were analyzed in depth.

From those analyzed results, some characteristics (or criteria) were extracted. In the example, numerical values were the key factors of the strategic items classification in drawings of the nuclear related systems, components, and etc.

Table I. Extraction of the criteria for past reports

Types of Documents	Criteria1
Drawings	Drawing Methods Numerical Value for Main Parts Numerical Value for All Parts
Layouts	Drawing Methods Numerical Value for Main Parts Numerical Value for All Parts
Configuration Drawings	Drawing Methods Configuration Data Assessed Target Assessment Methods
Manufacture	Drawing Methods Numerical Value for Main Parts Numerical Value for All Parts Production Process
Reports (Operation)	Relationship for TL Operation Type Operation Procedures
Reports (Installation)	Installation Info., Rough Procedures Specific Procedures

In another example, the specific procedures which are not rough procedures, were the key factors in operation manuals. The extracted key factors in the classification results were shown in Table I.

2.3. Extraction of the criteria through the re-classifying the past classification

To extract another criteria in the applied documents to review, a re-classification process was done for the same samples (about 1,000 samples) the above mentioned 2.2.section. Past result which were reviewed by technical reviewers were left out of consideration in this process.

The results of re-classification process were not largely different from the results of the 2.2 section process except some kinds of the documents such as drawings and configurations drawings. Representative examples were that there was some factors such as calculation data, material information, requirements in drawings, configuration drawings.

2.4. Mergence and Deduction of the General Elements

A final process of the re-establishment of the classification criteria was the mergence and deduction of the extracted criteria the above mentioned. In this process, KINAC experts and researchers re-analyzed plenty of the extracted criteria. And critical criteria and unimportant criteria were categorized, merged and deducted.

Table II. Criteria in the various types of the documents

Types of Documents	**Criteria**
Drawings	Drawing Methods, Numerical Value for Main Parts, Numerical Value for All Parts, **Calculation Data,** **Material Information**
Layouts	Drawing Methods, Numerical Value for Main Parts, Numerical Value for All Parts
Configuration Drawings	Drawing Methods, Configuration Data, Assessed Target, Assessment Methods **Requirement and Criteria**
Manufacture (Component)	Drawing Methods, Numerical Value for Main Parts, Numerical Value for All Parts, Production Process
Manufacture (Material)	Production Process, Material Composition, Needed Appliance, Material Requirement
Manufacture (QA)	QA Standards, QA Process
Reports (Operation)	Relationship for TL, Operation Type, Reactivity Control Information, Power Relationship, Operation Procedures
Reports (Installation)	Installation Info., Rough Procedures, Specific Procedures
Reports (overhall)	Installation Info., Rough Procedures Specific Procedures

As the results, key factors (or classification criteria) were extracted and arranged according to the types of the applied documents. Criteria in the various types of the documents were shown in Table II.

3. Conclusion and Future Works

Previously mentioned, the classification process and criteria were very qualitative and very obscure for the Trigger List Items. So, the re-establishment of the classification criteria was done to solve these problems in this study. Each extracted results were shown in Tables I and II. This re-established criteria are expected to contribute to quantification, disambiguation and objectification of the classification review process.

As the future works, we will establish the probability or numerical factor for the extracted criteria through statistical surveys, to make better use of these criteria. And we will push ahead with the NSSC approval to use as the classification guidelines of the trigger list items in review processes.

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