Establishment of the Nuclear Safety Record Management System

and Information Disclosure

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1. Introduction

1-1. Background

In line with the recent earthquake disaster in Gyeongju, the level of interest in the seismic design of nuclear plants and disasters that can occur during a nuclear plant accident is heightening. In addition, the demand for more transparent management and disclosure of nuclear safety information is increasing. To address these concerns, the Korea Institute of Nuclear Safety (KINS), which is responsible for nuclear safety in Korea, established the KINS management record system for systematic management and transparent disclosure of nuclear safety information. This system not only meets the mandatory functional requirements of the management record system of the National Archives of Korea (NAK) (NAK/S 6:2015(v1.2)), but also had added to it classification system management and information disclosure functions. In addition to simple record management, this system has been developed with consideration given to the utilization of recorded information resources, that is, information disclosure.

1-2. Scope and Method

This study was conducted with the goal to establish a management process for all records generated in the course of nuclear facility and radioactive safety management regulatory operations. To achieve this, all the operations necessary for managing KINS records were analyzed and related consulting was carried out and, based on the result, a management record system with standardized record management tables was developed. At the same time, the characteristics and limitations of the KINS management record system were analyzed and plans for links with information disclosure to improve public trust on nuclear safety were discussed.

2. Analysis of the Status of Nuclear Safety Information Management and Use, and Development of Management Tools

2-1. Analysis of Nuclear Safety Regulatory Operations and Development of Standardized Record Management Tables

"Table of standards for records management" in Article 25 of the Enforcement Decree of the Public Records Management Act (hereinafter "Record Management Act") is the government's business reference model (BRM) incorporated with the record classification system for the purpose of building a record management system that is based on operation processes.[1] A standardized record management table functions as an operational guideline for public organizations, such as for classification of records, preservation periods, reading rights and disclosure status. The standardized record management tables are based on the operation processes and is established by unit task of the government's BRM.
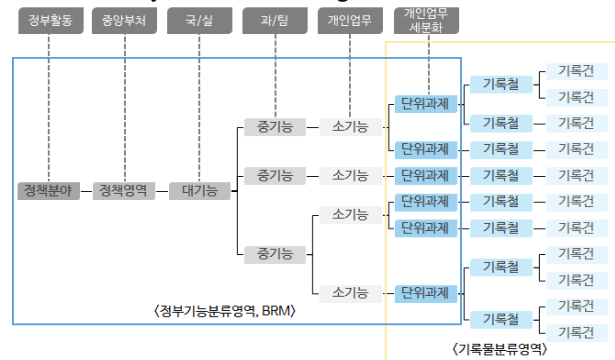

Fig. 1. Business reference model (BRM)-based standardized record management table

Table. I: Functions of the Standardized Record Management Table by Area

BRM Level	Function
Policy Field	Set with consideration of government business areas, such as intergovernmental activities and national service
Policy Area	Set with consideration of government business areas, such as intergovernmental activities and national service
Function – Large Category	Functions at the division/office level of each ministry

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[1] Lee Hae-yeong. Record Organization, Seonin, 2013. p.41

Function – Middle Category	Functions at the department/team level of each ministry
Function – Small Category	Functions of the person in charge of implementing middle category functions
Unit Task	Person in charge of segmenting functions of small categories by area and procedure considering the similarities and differences between operations

In general, a standardized record management table is prepared in a top-down mode. However, KINS is an institute commissioned to carry out the regulatory operations of the Nuclear Safety and Security Commission (NSSC), so through application of the NSSC standardized record management table, the KINS record management system was developed in the bottom-up mode.

The operation areas of the standardized record management table are divided into "common operations" and "specific operations." Common operations refer to operations carried out according to the statutes applied to all institutes, such as security operation regulations and administrative inspection regulations. Specific operations refer to operations carried out independently by KINS. This is the institute's intrinsic function necessary in fulfilling the purpose of its establishment. In order to sufficiently reflect nuclear safety regulatory operation in the standardized record management table, KINS organized a separate TFT for participation in the development process. The TFT participates in each stage of operation function investigation, unit task setting and record file setting. Then, following a review and feedback, the results are thoroughly reflected in the actual operations.
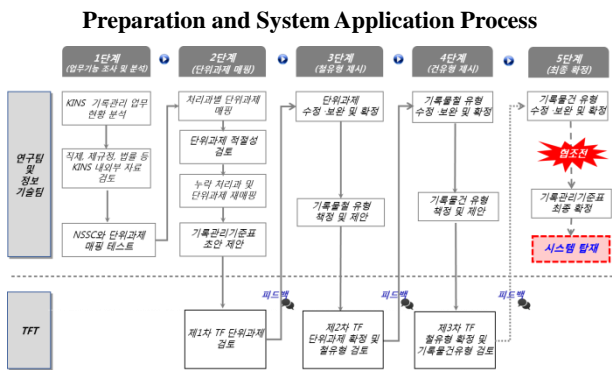

Fig. 2. KINS standardized record management table

Through the process above, 158institutes common operation unit tasks and 96institutes specific operations unit tasks were derived.

Fig. 3. Development of the standardized record management table through analysis of operations

2-2. Establishment of the KINS Record Management System

For reliable nuclear safety information disclosure, KINS started establishing a record information resource management system in 2014 that focused on record management in order to increase reliability of the disclosed information. The principle of record management is to guarantee authenticity, integrity, reliability and usability of records. KINS considered the system as a useful tool for improving the reliability of the nuclear safety information it produces. The standardized record management system currently employed by public organizations is designed for general use, so it is inadequate in reflecting nuclear safety regulatory operations. Therefore, KINS decided to develop an independent record management system.

This system not only meets all mandatory functional requirements of the record management system of the NAK (NAK/S 6:2015 (v1.2)), but also has added to it various functions of nuclear safety record information resource disclosure management through a link with the record classification management and Nuclear Safety Information disclosure Center (NSIC). The result is that with the application of a standardized record management table that reflects nuclear safety regulatory operations, nuclear regulatory operations are sufficiently reflected. At the same time, operational efficiency is improved by enabling collection, classification, preservation and utilization of record information resources into a single system.
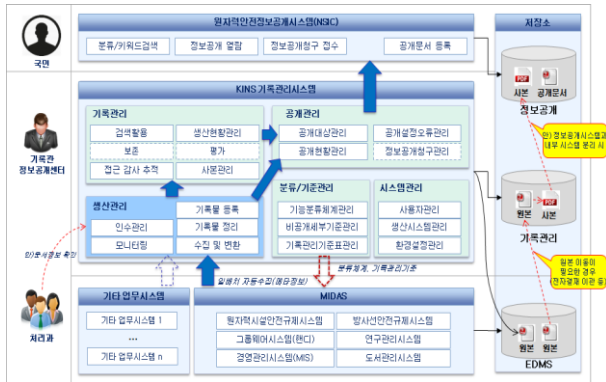
Fig. 4. Objectives of the KINS record management system

The biggest difference between the KINS record management system and the standard record management system of NAKS is the addition of a record classification management system and record information resource disclosure management functions. The KINS record management system is designed to link with the NSIC as well as the electronic document system. This is a consideration to enable management, preservation and utilization of record information resources in one system.

3. KINS Record Management System Management and Utilization of Disclosed Information

3-1. Application of the standardized record management table system

The most noteworthy feature of the KINS record management system is the standardized record management table management function, <Fig. 5>. However, in the final application of the system, only unit tasks and record files were included in the electronic document system due to technical integration issues among the various operation systems and the overall aging of the legacy systems. As a result of these issues, it was not reflected in the operation systems including nuclear safety and radiation safety regulation systems.
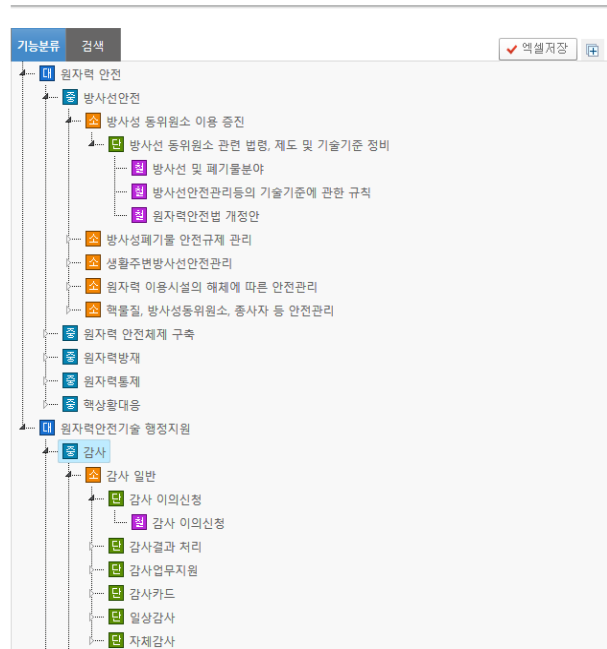

Fig. 5. Standardized record management table of the KINS record management system

3-2. Information Disclosure through the KINS Record Management System

The information openly processed in the KINS record management system are the administrative documents produced from the KINS electronic document system. The drafter decides whether or not to open the document by referring to the Official Information Disclosure Act and the detailed non-disclosure criteria and, on the following day of authorization, the document is automatically collected by the KINS record management system. On the day of collection, the document is re-examined by the person in charge of record management. Then, a list of information is disclosed in the government information disclosure web portal together with information of the original text.

The information subject to active disclosure according to Article 146-2 of the Enforcement Decree of the Nuclear Safety Act (Active Disclosure Target Information and Disclosure Method) is posted at the NSIC website. The Enforcement Decree of the Nuclear Safety Act prescribes five information items for active disclosure, which are [1] nuclear plant permits, [2] review reports, [3] inspection reports, [4] nuclear plant incident, accident and failure reports, and [5] national environmental radioactive monitoring reports. The number of reports that have been disclosed as of March 2017 is 268. In addition, since the opening of the NSIC website in December of 2016, no fewer than 1,192 cases of nuclear safety information disclosure, such as permit applications and nuclear plant safety reports, have been disclosed with the monthly average access count being approximately 3,000.
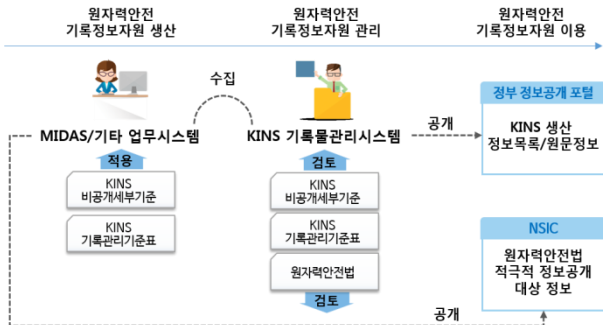
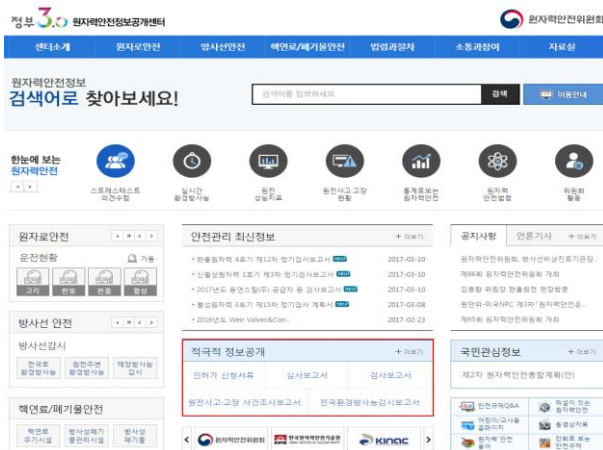Fig. 6. Nuclear safety information disclosure operation process

Fig. 7 Homepage of the nuclear safety information conference (NSIC) portal

4. Conclusions and Suggestions

The KINS record management system was designed for the systematic management and disclosure of nuclear safety information. Currently, this system is linked to MIDAS and government information websites and is used for record information resource management and disclosure. It is rare in Korea for the record information resources of an institute to be comprehensively produced, managed, disclosed and utilized in a single system. Therefore, various issues arising from the use of the system must be continuously analyzed and reflected in nuclear safety regulatory operations. By doing so, the transparency and reliability of nuclear safety regulatory information will be improved.

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