

Configuration Management System under development in the SMR Project

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1. Introduction

Configuration management performs so that nuclear equipment and facilities can be operated as to the designed performance. Ultimately, configuration management is to maintain the design margin and the operating margin of the performance and operating conditions of nuclear facility SSCs (Structures, Systems, and Components) derived from design-based and licensing requirements. In other words, this margin management provides reliability for the safe operation of nuclear facilities [1].

While carrying out the small modular reactor project, a document management system was developed, and a configuration management system is being developed within the developed document management system. In the configuration management of this project, first of all, only the change management part is being developed. In this paper, the change management system under development is described.

2. Change Management

The purpose of configuration management of nuclear facilities is to ensure that the construction, operation, maintenance, and testing of physical facilities meet the requirements specified in the design document. In the nuclear industry, change management was emphasized to maintain consistency with design requirement, physical configuration, configuration information from safety perspective. Change management is widely applied throughout the entire life cycle from the planning stage of the project, but the importance of change management is emphasized especially in the operation stage. The recent trend is tracking and baseline management for change management.

Change management tasks in the document management system for small modular reactor were largely divided into four stages: configuration change review request, configuration change request review and confirmation, configuration change approval by the configuration control committee (CCC), configuration change notice, and follow-up measures [2].

3. Review Procedure for Configuration Change

Change management consisting of four steps was organized as follows according to the work stream. As shown in Fig. 1, the configuration change review was implemented in the order of review report preparation,

distribution approval, designation of reviewer, review, collection of review opinions, resolution results preparation, and status [3].

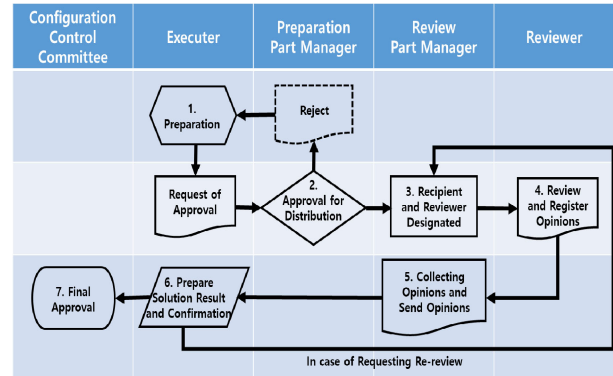


Fig. 1 Configuration change review procedure

3.1. Preparation

When a design document to be changed is selected as a process of preparing a configuration change review, design document information registered in the system is followed. They are, the design document author, the date of issue, the document number, the revision number, and the document title automatically entered.

Select information on configuration change reviews such as safety classes, seismic categories, electricity classes, and quality classes, enter configuration changes, and attach them as files when they are written in documents due to many contents.

Attach the changed design document and the reference requirement document. When the author signs after selecting the distribution destination, the approval of distribution of the configuration change review to the preparation part manager is requested.

3.2. Approval for Distribution

If the manager of preparation part adds or deletes the distribution destination and signs it, the configuration change review will be distributed to the distribution destination.

3.3. Receiving and Designating Reviewers

Upon receiving the configuration change review, the manager of review part designates the reviewer and confirms it.

3.4. Review and Comment Registration

ANSI/NIRMA CM 1.0-2007, Approval August 2007, Nuclear Information and Records Management Association

The reviewer of reviewing part prepares a review opinion and attaches them if there are attachments.

3.5. Collecting Review Opinions

The manager of the review department checks the opinions, and collects and prepares the review opinions. And whether to agree to change the configuration or not is selected between Yes, No, and Review. The collected opinions are sent to the author of the preparing department.

3.6. Preparation of Resolution Results

The author of the Configuration Change Review Report (CCRR) prepares the collected configuration change review content and attaches them if there are attached files.

3.7. Configuration Control Committee and Status

The executive secretary or chairperson of the Configuration Control Committee (CCC) decides whether to hold the committee. Members of the CCC shall be designated to collect opinions. Accordingly, the change is notified and follow-up measures are taken [4].

4. Conclusions

A configuration management system was developed inside the project document management system. First, use case specification, process procedure, and requirement definition were prepared. Next, the menu structure, wire frame, and database were designed. Based on these, the change management system is implemented according to the configuration change review procedure, and test scenarios are also being created. Furthermore, the implemented configuration management system is intended to be useful for project by accepting the continuous demands of users.

REFERENCES

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