

Application of configuration management system in HANARO

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1. Introduction

HANARO (High-flux Advanced Neutron Application Reactor) is a 30MWth multi-purpose research reactor. Since the first criticality achieved in February 1995, the HANARO has been utilizing in various fields such as nuclear in-pile tests, radioisotope production, neutron beam research, neutron transmutation doping, and neutron activation analysis.

Configuration management maintains consistency among the design requirements, physical configuration and system information of a facility. Therefore, it is also one of the most important factors in safe operation of HANARO.

In 2020, configuration management system and procedures were introduced to document the information of the system and devices of HANARO facility and to control their design change.

2. Old design documents management system

Previously, documents of HANARO have been registered and managed in KAERI's integrated document management system called ANSIM.

However, it only includes initial design requirements and system configuration, and does not include the latest information as the results of design changes.

Therefore, when a reference of the design document is required, it is necessary to ensure that it reflects the latest configuration.

3. Configuration management system

HANARO has been operated over 20 years, and the number of replacements accompanied by design changes is increasing and it is expected to increase in the future. Therefore, systematic configuration management is required for safe and efficient operation of HANARO.

Since there was no special mention to research reactors, the configuration management for HANARO has to comply with regulations and regulatory guidelines for the nuclear power plants.

Configuration management maintains consistency among the design requirements, physical configuration and system information of the facility(Figure 1). A configuration management system and procedures were introduced to document the information of the

system and devices of HANARO facility and to control their design change. (Figure 1).

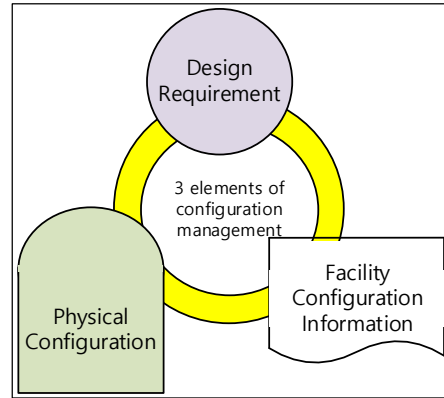


Figure 1. Three elements of configuration management

HANARO configuration management system had implemented in 2020, and all data corresponding to class Q and T are registered by the system manager up to 2022 (Figure 2).



Figure 2. HANARO configuration management system

A procedure (QAP-BS-2001) is established for the management of the system (Figure 3).

This procedure is required to prepare 'configuration information change review form' as shown in Figure 4 when any changes occur on the registered information. Then it is finally uploaded to the system after reviewed by the team manager and approved by the head of the department. If it is considered inappropriate or unsatisfactory during the approval process, the correction procedure of the application for review form is proceeded.

