

Establishment of Management System for Korea Institute of Nuclear Safety

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1. Introduction

In order to optimize of nuclear safety regulation in the rapidly changing nuclear safety environment, Korea government determined that the existing safety standards needed to be reviewed from Integrated Regulatory Review Service(IRRS) team of International Atomic Energy Agency(IAEA)[1]. For optimizations of nuclear safety regulation, the reviews were performed by IAEA IRRS team from July 10-22, 2011. In the results of 2011 IRRS mission, 12 suggestion and 10 recommendation were found. Especially, 3 suggestion and 1 recommendation related Management System(MS) of the regulatory body were found in the module 4[2].

To confirm follow-up measures, IRRS follow-up mission would be also performed by IRRS team 18~24 months later after the mission was over. In order to prepare the IRRS follow-up mission, the establishment of MS of Korea Institute of Nuclear Safety(KINS) had been initiated by reflecting the 4 found supplement items in module 4 and IAEA GS-R-3 requirements.

As a result of the initiation, MS of KINS was established. To introduce the MS of KINS and gather another suggestions for its enhancement, the MS was considered as a theme.

2. Establishment of KINS Management System

2.1 The Results of Module 4 in 2011 IRRS

The Nuclear Safety Regulation Quality Management Plan(KINS-QMP-100, Rev.0) was first established in 2001 and had been revised 5 times after that[3]. In the results of module 4 in 2011 IRRS mission, IRRS team found 1 recommendation and 3 suggestion for QMP of KINS. Table. 1. shows the results of module 4 in 2011 IRRS mission.

Table 1. The results of IRRS Module 4 in 2011

R4	KINS should develop a process on Resource Management in order to achieve a fully integrated Management System.
S4	KINS should revise its Management System Manual to include an overall description of the basic processes, how they relate to each other as well as a description of all types of documentation used within the Management System.
S5	The new Nuclear Safety Commission and KINS should describe in their Management System Manuals what means they plan to use in order to ensure a common understanding of safety culture, to support individual and groups to carry out work in a safe way, to reinforce a learning and questioning attitude, and to continually develop and improve the safety culture.
S6	The new Nuclear Safety Commission and KINS should supplement their Management Systems with a process or procedure for managing organizational change in order to ensure that regulatory efficiency and effectiveness are not compromised.

As shown in Table. 1., R4, S4, S5 and S6 were related resource management, description of MS and its relations, safety culture of regulatory body and managing organizational change, respectively. The IRRS team proposed supplementations to KINS by considering these 4 supplement items. Therefore, the development of MS of KINS had been initiated by reflecting the supplement items in module 4 and IAEA GS-R-3 requirements to prepare the IRRS follow-up mission.

2.2 Main items for Development of KINS Management System and its Manual

Figure. 1. shows the flow of establishment for KINS MS and its manual. As shown in Fig. 1., 5 main items were chosen such as hierarchy of documents, safety culture of regulatory body, development of process

model and etc to convert the system from QMP to MS based on KINS-QMP-100, Rev.5. And additional supplement items were also decided by performing 3 kinds of assessment such as self assessment, independent assessment and management review in accordance with the assessment procedure document which was developed by reflecting IAEA GS-R-3 requirements[4].

Likewise, KINS MS and its manual had been established by considering these main supplement items and additional supplement items to meet the IAEA standard of MS of regulatory body.

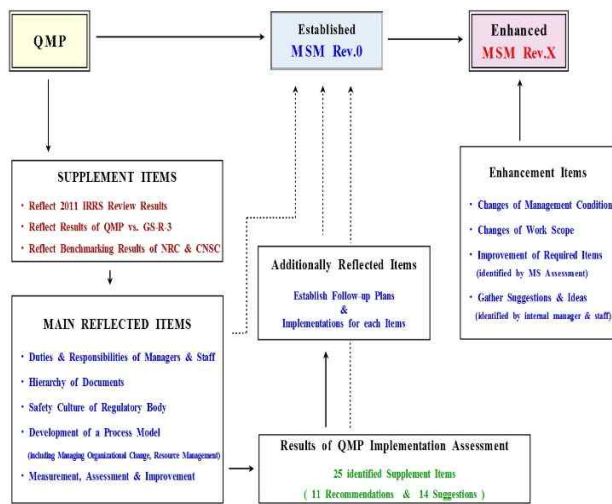


Fig. 1. The Establishment Flow for KINS Management System & Manual

3. The results of 2014 IRRS follow-up mission

To confirm follow-up measures of KINS, the IAEA IRRS follow-up mission was held from December 8-19, 2014. IRRS team reviewed the newly developed MS manual[5] and other documents related to MS. Also, IRRS team interviewed staff of KINS to check the activities for improvement process. The results of module 4 in 2014 IRRS follow-up mission are as follows.

- **Suggestion 5 is closed on the basis of progress made and confidence in effective completion of initiatives to enhance safety culture within the regulatory body.**
- **Suggestion 6 is closed on the basis that NSSC has completed its IMS in compliance with the requirements of GS-R-3.**
- **There are no new observations from the follow up mission.**

As described above, IRRS team concluded that the 1 recommendation and 3 suggestion related to module 4 in 2011 IRRS mission were closed in 2014 IRRS follow-up mission. It meant that the newly established MS and developed manual fully met IAEA standard of GS-R-3.

4. Enhancement

The MS and its manual were established and developed by considering the results of module 4 in 2011 IRRS mission and the analysis results of IAEA standard of GS-R-3. However, additional efforts, as follows, need to be done in order to enhance the established MS and developed manual in the rapidly changing nuclear safety environment.

- *Appropriate measures for the results found by annual assessment in accordance with the assessment procedure document*
- *Decision of organizational policies considering changes in environments, demands of clients and stakeholders, and the achievements of organizational strategies*
- *Corrective action and preventative measures for non-conformances which are identified in the MS and its manual*

The regulatory efficiency, effectiveness and quality can be achieved by performing appropriate measures for these enhancement items consistently.

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