

Summary of the Safety Culture Activities in HANARO of KAERI

In-Cheol LIM, Jong-Sup WU, Kye-Hong LEE
Korea Atomic Energy Research Institute, P.O. Box 105, Yuseong, Daejeon, Korea 305-600

1. Introduction

The definition of safety culture in HANARO takes the IAEA's definition [1] and it is the assembly of characteristics of attitudes in the HANARO center and individuals which establishes that, as an overriding priority, the HANARO safety issues receive the attention warranted by their significance. Since the power operation of HANARO started in 1996, HANARO has been operated for about 11 years and its degree of utilization and the number of experimental facilities have increased. This achievement is partly due to the spread of safety culture to the operators and the reactor users. In this paper, the safety culture activities done by the HANARO center of KAERI are described, and its efforts necessary for an improvement of it are presented.

2. Classification of Activity Period

According to an IAEA document on safety culture [2], the stages of safety culture developments are classified as follows: At stage 1, the safety is recognized as being based solely on rules and regulations. The organization sees safety as an external requirement and not as an aspect of a conduct that will help the organization to success. At stage 2, good safety performance becomes an organizational goal. An organization at this stage has a management which perceives a safety performance as important even in the absence of a regulatory pressure. At stage 3, it is perceived that safety performance can always be improved. An organization at this stage adopts the idea of a continuous improvement and applies the concept of a safety performance.

It is believed that there are three periods as far as the safety culture activities in HANARO are concerned. The first period was from 1995 to 1997. For the operation of HANARO, the staff were assembled from various sectors of KAERI. Thus, the build-up of a new organization culture and the sharing of experiences were made. The second period was from 1998 to 2005 [3]. In this period, HANARO joined the FNCA safety culture project and adopted many methodologies from the FNCA recommendations. At the end of 2005, the resource for the safety culture activities in HANARO was strengthened in accordance with the change in the structure of the HANARO center. We entered a new period in safety culture activities in a sense that the activities should spread from the reactor operation to the utilization facility operation as well as users.

Considering the above activities in HANARO, it is believed that the HANARO center is at Stage 3.

3. Major Safety Culture Activities in HANARO

In this Chapter, the major safety culture activities which have been done from 1995 to the present are described.

3.1 Preparation of Policy for Safety Culture

In the Employment Rule of KAERI, which is Institute Rule No. 08-04, it is stated that the top management should set up the measures to protect the employee, visitors, public and the environment from radiation hazards and, should make continuous efforts in the implementation of safety culture. To support the execution of this rule, a corporative regulation, TA6, which states the policy for the safety culture practices in HANARO, was enacted in 2003. In 2006, a Practice Guide (PG) of the HANARO center on the safety Culture Activities was made to specify the detailed actions and responsibilities on the subjects given in TA6.

3.2 Peer Review of Safety Culture by FNCA in 2004

From 2003, a peer review on the safety culture of research reactors operated by FNCA member countries became a routine activity of the FNCA nuclear safety culture project. In Feb. 2004, the 2003 FNCA safety culture project workshop was held in KAERI and the peer review of the safety culture of HANARO was conducted. It was the second peer review by FNCA following the first one for DNRR of Vietnam during the 2002 workshop. From the peer review, 31 good practices were recognized and 15 recommendations were made for an improvement. The status on the implementation of recommendations is reported at the annual FNCA safety culture workshop [4].

3.3 Survey on Safety Culture Attitude

As mentioned in Chapter 2, KAERI has adopted many methodologies from the FNCA recommendation and the attitudinal survey is one of them. The questionnaire on the safety culture attitude was originally developed by ANSTO (Australian Nuclear Science and Technology Organization) and proposed to the member countries of the FNCA for their use. The attitudinal surveys in the HANARO center were conducted in 1998, 2002 and 2006. The first and second ones were only for the reactor operation staff but the survey in 2006 was made for all the staff in the HANARO center including the staff working on the

RIPF(Radio-Isotope Production Facility) and beam facilities [5]. It was helpful to understand the characteristics of the staff and to set the safety culture activities necessary for an improvement.

3.4 Self-assessment of Safety Culture

In 2003, IAEA drafted the Code of Conduct on the Safety of Research Reactors [6]. The Code proposes the role of the state, the regulatory body, the operating organization and the IAEA. The contents of the chapter on the role of the operating organization give the guideline for the member states to follow for improving their safety culture and strengthening their technology. Thus, it was used for the self-assessment of the safety culture of HANARO [7].

From 2003, the FNCA safety culture project requests a member country to make and present a self assessment report on the safety culture of its research reactor. Thus, a self assessment of the safety culture in HANARO is conducted every year by using the form proposed by FNCA.

3.5 Conductance of Safety-Check-Day and Periodic Internal Safety Check

The first Tuesday of every month is designated as the Safety-check-day by MOST. On this day, all the members of the HANARO center usually gather together and have a Safety Culture seminar. The topics of the seminar cover various matters including a presentation on a near-miss case in HANARO and other facilities, a review and plan of the safety culture activities and the lifesaving techniques.

The HANARO center has the Safety Review Committee (SRC) and this advises the vice-president of KAERI in charge of the HANARO center on the safety issues. It has three sub-committees and the Internal Safety Check Sub-committee (ISCS) is one of them. It is an assembly of managers in charge of the operation or use of the facilities in the HANARO center. It regularly takes trips to the facilities or labs belonging to the HANARO center and presents a trip report to the SRC. The corrective actions should be made on the findings from the trip of the ISCS and its status should be reported at the SRC meeting.

3.6 Preparation of Safety Culture Text Book

A preparation of a text book on a safety culture was finished in Oct. this year. The main purposes are to provide the concept of safety culture to the staff and to guide the new comers to work safely at the various work places in the HANARO center.

3. Remark

Many activities have been performed for the improvement of the safety culture in HANARO. The emphases will be put on the following matters:

- The normalization of safety culture attitude of the staff working at the reactor and other user facilities in HANARO.
- A strengthening of the communication with the contract companies which are working on the construction of a fuel test loop and a cold neutron research laboratory
- A more systematic preparation of the safety culture seminars conducted on the Safety-Check-Day to make the HANARO advance further in stage three of safety culture

REFERENCES

- [1] INSAG, Safety Culture, Safety Series No. 75-INSAG-4, IAEA, Vienna (1991).
- [2] IAEA, Developing Safety Culture in Nuclear Activities, Vienna (1998).
- [3] I.C. LIM et al., "Safety Culture Activities in HANARO," presented at the fall conference of KNS (2002).
- [4] I.C. LIM et al., "Follow-up Actions from the HANARO Peer Review", to be presented at the 2006 FNCA Safety Culture Workshop, 19-21 Sept. 2006, Bangi, Malaysia (2006).
- [5] J.S. WU et al., "Safety Culture Attitude Survey in HANARO," to be presented at this conference (2006).
- [6] Draft Code of Conduct on the Safety of Research Reactors, IAEA, Vienna (2003).
- [7] I.C. LIM et al., "Self-assessment of safety culture in HANARO using the code of conduct on the safety of research reactor by IAEA," presented at the Int. Conf. of IAEA on Research Reactor Utilization, Safety, Decommissioning Fuel and Waste Management, 10-14 Nov. 2003, Santiago, Chile (2003).