

Nuclear R&D Capacity and Web-based Education Program Development

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1. Introduction

Korea Atomic Energy Research Institute (KAERI)'s vision for human resources development is to become a national nuclear research institute that has a challenging future based on people's trust. Owing to the government's recent nuclear policy, the internal and external communications in the field of nuclear energy has become an important issue. Therefore, it is necessary to re-establish the direction of KAERI's visions for human resources development. To achieve this goal, KAERI should strengthen its nuclear R&D expertise based on its strengths, and cultivate human resources capable of communicating internally and externally. To this end, this project aims to strengthen nuclear R&D capacity by providing KAERI employees with education and training programs, and by developing web-based education programs.

2. Methods and Results

This project created the KAERI-ACE (atomic community of education) program for KAERI's vision for human resources development. The KAERI-ACE program aims to establish an employee education program capable of providing motivations for promoting organizational performance, rather than providing education and training. In this section, the HRD (Human Resources Development) strategy, HRD level diagnosis, education and training system, nuclear R&D capacity, and web-based education program development of KAERI-ACE are described.

2.1 KAERI HRD Strategy

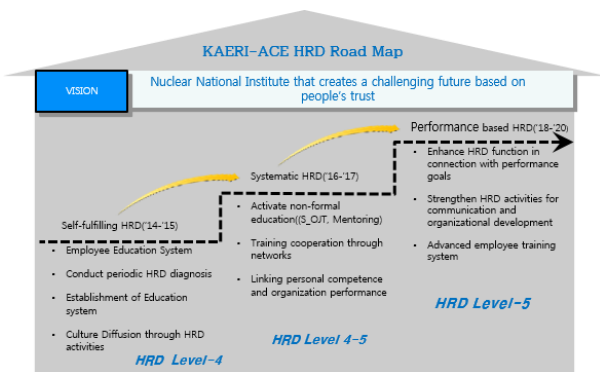


Fig. 1. KAERI-ACE HRD Road Map

KAERI has created a roadmap for HRD and a HRD strategy. The ultimate goal of the road map is to achieve performance based HRD [1]. Performance based HRD encompasses the following;

- strengthen HRD function regarding performance goals and performance issues
- strengthen HRD activities regarding activating communication and organizational development
- advanced employee training system.

2.2 Results of KAERI HRD Level Diagnosis

To diagnose education and training performance, six levels of HRD were created. HRD level diagnosis in 2018 produced total score of 753, which is the lower boundary for HRD level 5 (that is performance-based HRD). For KAERI to maintain its current HRD level, it should strengthen its HRD training activities related to management issues and organizational performance. In addition, it should seek to improve its HRD related facilities and to increase its HRD budget [2].

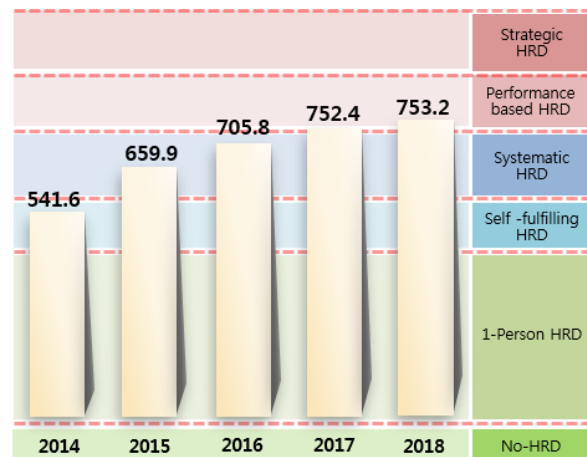


Fig. 2. Results of KAERI HRD Level Diagnosis

2.3 Implementation of KAERI-ACE 4.0 Program

The employee education program, KAERI-ACE 4.0 Program comprises five (5) fields, leadership training, common skill training, legal education, job competency training and self-development. In 2018, 16,654 peoples participated in 50 training courses under the KAERI-ACE 4.0 Program.

Table 1. KAER-ACE 4.0 Program

Fields	Courses	Participants
Leadership Training	17	745
Common Skill Training	3	936
Legal Education	9	7,513
Job Competency Training	15	2,362
Self-Development	6	5,098
Total	50	16,654

2.4 Development of Nuclear R&D Competence Training Courses

Regarding nuclear R&D capacity development, KAERI has developed 16 modular competency training courses, of which it operates 2-3 each year. KAERI invites the best lecturers in Korea for the implementation of such courses. The response of students is very high because the course contents are related to nuclear R&D capacity development. The 16 modular competency training courses incorporate KAERI's excellent technology, which greatly contributes to KAERI's HRD [3].

Table 2. KAERI Nuclear R&D Competence Training Courses

KAERI Nuclear R&D Competence Training Courses			
Basic Nuclear Eng.	Nuclear I&C	Pyro/SFR	Radiation Mgt. and Utilization
Heat and Fluid Eng.	NPP System & Structure	VHTR/H2 Production	Nuclear QA
Thermal Hydraulic System and Safety	Nuclear Fuel and In-core Mgt.	Nuclear Materials	Nuclear Regulation
Reactor Optimal Design	Nuclear D/D	Fusion Technology	Global Nuclear Business

2.5 Web-based Education Program Development

Web-based education and training are important tools of education and training. It is desirable to convert time-consuming a legal education program into a web-based on-line education program. In this regard, KAERI is developing web-based curriculum for a legal education program [4]. Thus far, KAERI's web-based education and training comprises the following courses:

- basic nuclear engineering,
- nuclear I&C,

- HANARO access,
- science & technology performance achievement,
- corruption prevention, and
- new employee training.

3. Conclusions

In accordance with its strengths of excellent technology, KAERI is contributing to the improvement of R&D performance through nuclear R&D capacity development. It has implemented education and training programs to improve current issues of KAERI and to achieve its business performance goals. Through the nuclear R&D capacity development and education program development, KAERI has improved the quality of its education and training programs. The education and training capacity of KAERI has been strengthened through the accumulation of educational materials and contents, strengthening cooperation for education and training, and improving education infrastructure.

REFERENCES

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