

The development of KAERI NHRD model with consideration of IAEA milestone approach

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1. Introduction

Nuclear human resource development is one of the most important issues for the promotion of nuclear activities not only for nuclear power program but also radiation technology area. It was understood that most of Korean nuclear activities were successfully done by successful HRD and many developing countries want to learn about how Korea have done. KAERI has continuously tried to find efficient way for how shall do and how to cooperate with developing countries on the field of nuclear HRD but it was very difficult especially for proper answer on how Korea could achieve technology self-reliance on nuclear field so shortly and which strategy was adopted in the HRD area. To answer on this question raised by new comer country, KAERI tried to form nuclear human resource development model based on Korean experience. With this new nuclear HRD model, KAERI might share his experience very efficiently with developing countries who want to develop nuclear activities and support them. In this paper, two lines for competency were defined as education and training and this did not touch on academic education area because KAERI did not have his expertise on that. With this paper KAERI wants to raise issue nationally on the establishment of Korean NHRD model and eventually KAERI wants to play leading role as one of global NHRD leaders with Korean nuclear society by contribution to new comer's demand with this new model.

2. Methods and Results

In this section, the Korean HRD history was defined and summarized by periodically and the other advanced countries NHRD model was reviewed and analyzed including IAEA milestone approach because IAEA milestone approach is well known to most developing countries of potential partner in the future. IAEA NHRD model was reviewed and the summary was described as well. Finally new NHRD model with consideration of IAEA milestone approach suggested about how to efficiently apply this new model to developing countries to achieve their goal on HRD in their own countries.

2.1 Identification of Korean NHRD Model over 5 decades

At the beginning stage, Korean nuclear HRD was

done by KAERI NTC (Nuclear Training & Education Center) because KAERI NTC was only one organization who could manage this issue in Korea at this stage. Actually in this stage Korean history might be the same as KAERI NTC history on the HRD area. KAERI nuclear training as symbol of Korean nuclear HRD was classified as four steps as following. That means Korean NHRD was done by four step approaches.

- 1) Beginning stage
- 2) Infrastructure preparation stage
- 3) Technology self-reliance stage
- 4) Global networking stage

In this chapter each of four step details was described with which main target organization among stakeholders, training courses, infrastructures, policy and legal aspects.

Each stage had different environment on the point of human resource level, infrastructure level and the experience level of industry. Based on the difference, the NHRD strategy and related training courses were planned and implemented to match the given context. But new NHRD model was established something different as Korean NHRD model because the different situation of potential partners was shown currently and furthermore, this model has dual purpose for KAERI own and to share the experience with others.

2.2 Analysis of International NHRD Model

To develop new NHRD model, selected several international NHRD models which are well known internationally were studied and analyzed. The selected model for benchmarking was the IAEA, USA and Russian NHRD model because they were considered as well organized NHRD model on the world. Through the analysis of these models, many kinds of reference criteria for proper benchmarking model were considered and the most applicable model was seriously studied. Eventually IAEA NHRD model with milestone approach was selected. Because IAEA model are much familiar with developing countries who are interested in the introduction of nuclear program and are actively participating in IAEA activities. But the other models were utilized as reference too.

2.3 Development of 3 step approach NHRD model

As defined Korean NHRD history and selected IAEA NHRD model through comprehensive analysis, new KAERI NHRD model was developed. But as defined in the first chapter, the model was concentrated on training

area only because academic education area has not touched by KAERI NTC. That means this model must be further developed for whole spectrum of human resource development. The main concept of new model is 3 step approaches from very beginning to technology self-reliance. The reason that 3 step approaches was adopted was to maximize the familiarity and high efficiency to be accepted by new comer countries on this area. This model was aimed for developing countries who want to introduce the first nuclear power plant because most countries are interested on this NPP. 3 steps are defined as following:

- 1) Planning to decision
- 2) Construction of NPP
- 3) Technology self-reliance

As shown in the above, IAEA milestone approach was used as reference but something different for its coverage. Each step contains various contents which could influence on the HRD. Every step shows us policy, stakeholders, main target organizations, training courses and infrastructures. As it shows, slightly different contents were defined for their own goal of each step. Main idea of this new model was how to minimize the time span and demand of budget to achieve final goal and technology self-reliance area was added in the milestone approach. As lessons learned from Korean experience on this HRD was reflected. In case any country wants to introduce NPP then they want to have multiple units of them generally. Eventually they want to drive technology self-reliance policy and strategy and many of developing countries have raised question how Korea could achieve it. This new model could answer on this question.

2.4 NHRD Model made by KAERI-NTC

This model basically was made by 3 step approach which is the 1st step(Planning to decision) , the 2nd step(Construction of nuclear power plant) and the 3rd step(Technology self-reliance) as following. Actually the identification of the contents of each step among so many issues and necessary topics was so complicate because of prioritizing.

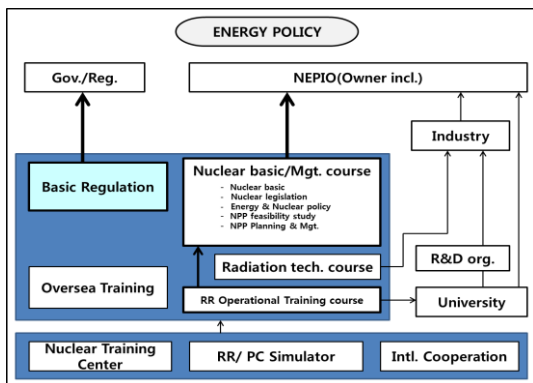


Fig. 1. Step 1of KAERI NHRD Model (Planning to decision)

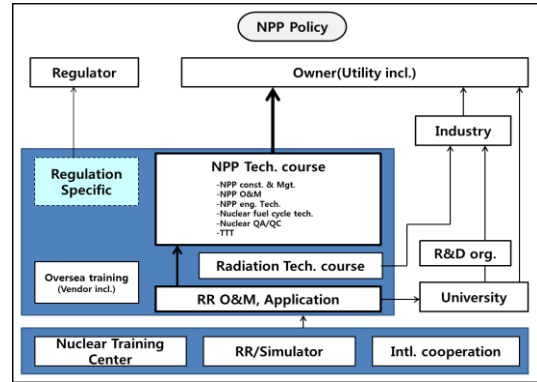


Fig. 2. Step 2 of KAERI NHRD Model (Construction of nuclear power plant)

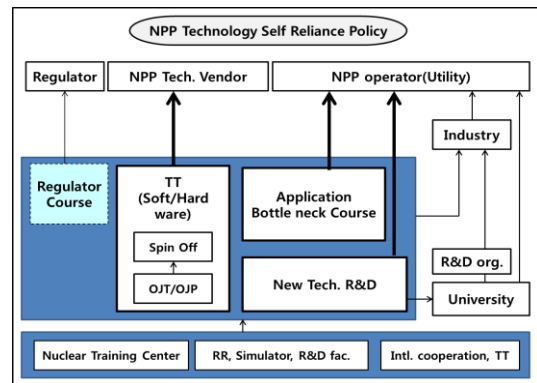


Fig. 3. Step 3 of KAERI NHRD Model (Technology self-reliance)

2.5 Efficient way to apply KAERI NHRD Model for new comer countries

To apply KAERI NHRD model for potential cooperation partners efficiently and properly, this model might be rearranged flexibly with full understanding of their situation such as infrastructure, environment, and national position and HRD level to meet their demand with this model. Based on mutual understanding for the partner's environment, application process must be analyzed and proper procedure as well. Then next step is the implementation of pilot program to confirm and check for adaptation of this new HRD model. The rearranged model with analysis of pilot program would be applied step by step gradually. During the implementation of this model, continuously try to find efficient way to be successful adaptation too. The most crucial and important point on this implementation is that every program must be selected based on the demand by partner not by Korea as supplier. And both parties must be trust with mutual understanding on the progressive goal of each step.

3. Conclusions

As defined in the introduction, this model is not finalized because of exception on academic education and matured industrial training. This model wants to

raise issue on the establishment of national comprehensive nuclear HRD model to cope with new comer's question properly and well understanding of Korean HRD in Korea as well. Therefore, it needs to be updated continuously with cooperation among Korean nuclear society and government level as soon as possible. However, this paper hopes that the issue to emphasize national nuclear HRD model as whole spectrum will be undertaken. When the real comprehensive NHRD model is established eventually in some time, Korean NHRD might be a global leader actually and could promote nuclear industry by cooperation with developing countries.

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