An Analysis of Training Requirements in the Course for Personnel in charge of Accounting for and Control of SNM

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Introduction

Nuclear Nonproliferation Training (NNT) is a compulsory program by related laws for nuclear fuel cycle-related researchers and the staff for nuclear material accountancy in nuclear facilities such as Nuclear Power Plant, Nuclear Fuel Fabrication, etc. It consists of two courses, the course for personnel in charge of accounting for and control of Special Nuclear Material (SNM) at nuclear facilities and the course for project managers of nuclear fuel cycle-related research.

Especially, the course for accounting for and control of SNM has provided a good opportunity for the participants to improve the knowledge and expertise for their job. To provide effective training, KINAC has conducted a lot of research in developing appropriate content as a specialized organization entrusted by Nuclear Security and Safety Commission (NSSC) for NNT. This paper is focusing on exploring the appropriate education contents based on the needs of trainees by deriving the job competency model of the subject of the training.

Table 1. Specific Status of the Course for Personnel in charge of Accounting for and Control of SNM

Legal Basis	-Article 106 (3) of the Nuclear Safety Act -Article 150 of the Enforcement Decree -Article 141 of the Enforcement Regulation -Regulation on Nuclear Nonproliferation Training
Contents	-International Treaty and Regime on Nuclear Nonproliferation -Safeguards & Export Control -Current issues on Safeguards & Export Control
Trainees	-Staff for nuclear material accountancy in nuclear facilities (About 70 % participant are KHNP staff)

Analysis Tool and Purpose for Survey

The analysis was conducted in two steps. Analyzing the trainee's job status and demand on the training was conducted in step1 and deriving the priority of trainee's needs was conducted in step2.

The Developing a Curriculum (DACUM) method, online survey and Borich Needs Assessment Model (Borich Model) were used as the analysis tool. DACUM is a process that incorporates the use of a focus group in a facilitated storyboarding process to capture the major duties. Borich Model is a useful tool to assess the perceived level of importance and perceived level of competence.

Analysis of the Participants Feedback

Table 2. Analysis Tools and Purpose in each Step

Step	Analysis Tool	Purpose
1	DACUM	Deriving the Knowledge for Duties and Tasks of Trainees
2	T-Test, Borich Model	Prioritization of Educational Needs of Trainees and Prioritization of Core Tasks

Table 3. Eight Duties related to Trainee's Duties

No.	Duty
1	Document Management of Accounting for and Control of SNM
2	Report on Accounting for and Control of SNM
3	Response to SSAC Inspection
4	Support to IAEA Inspection
5	AP Declaration
6	Management of Safeguards related Document
7	Report on Internationally controlled goods
8	Report on Export & Import of Internationally controlled goods

Table 4. Priorities of Educational Requirements for the Task of Trainees

No.	Task	Borich Score
1	Preparation of regulations on Accounting for and Control of SNM	1.67.
2	DIQ Modification	0.96
3	Special Report Preparation	0.94
4	Concise Note Preparation	0.65
5	Preparation of regulations on Accounting for and Control of SNM (update)	0.62
5	Procedure Management of Accounting for and Control of SNM	0.62
7	DIQ Preparation	0.61
8	Equipment Reporting	0.60
9	Reporting on Safeguards Activities	0.50
10	Inspection Result Reporting	0.49
11	NM Transport Report (NMTR)	0.33
11	MBR Reporting	0.33
13	Obligation Code	0.32
13	Information Providing based on AP	0.32
15	Report for Bilateral Agreement.	0.31
16	Reporting on Annual Safeguards Plan	0.30
17	Facility Attachment Reviewing	0.29
18	Reporting on Non-Nuclear Material	0.28
18	Small Quantities NM Reporting	0.28
18	Response to Short Notice and Radom Inspection (SNRI)	0.28

*Borich Score = Σ (RCL-PCL)*RCL / N

- RCL (Required Competency level)
- PCL (Present Competency Level)
- RCL (Average score of importance by each competency)
- N (Total Number)

Conclusion

Since the Korean government designated KINAC as an organization in charge of NNT in 2005, KINAC has made various efforts to provide quality training courses. This survey is conducted to improve the quality of educational contents in NTT and the following effect are expected.

First, KINAC can identify the standardized duties and tasks details of the trainees in the course for personnel in charge of accounting for and control of SNM.

Second, through the job-competency analysis of the tasks, KINAC can derive the appropriate contents and customized curriculum for trainees. The Borich Score indicates that "Preparation of regulations on Accounting for and Control of SNM", "DIQ Modification" and Special Report Preparation" are important tasks the trainees want to improve their knowledge. It means that KINAC should allocate more time to these tasks. These results were reflected in the establishment of the NNT plan in 2021.