# Development of Training System for Emergency Response to a Nuclear Accident in Neighboring Country

Hyejin Kim, Juyoul Kim<sup>\*</sup>, Juyub Kim

FNC Technology Co., Ltd., 32F, 13, Heungdeok 1-ro, Giheung-gu, Yongin, Korea \*Corresponding author: gracemi@fnctech.com

## 1. Introduction

In the Northeast Asia region where the Korean Peninsula is located, more than 100 nuclear reactors are in operation or under construction in China, Japan and Taiwan. As nuclear power plants are concentrated and new construction is expected to continue, it is necessary to continuously strengthen the emergency response system for radiological disaster in neighboring country.

In order to respond quickly and efficiently in the case of radiological disaster in neighboring country, conducting an infrastructure research to improve the emergency response system at the national level is required. Also, it is necessary to develop training scenarios, evaluation methodology and model to strengthen the periodic emergency response training system.

In this study, we develop a training system for preparing a radiological disaster occurred in neighboring country as a part of the advancement of the emergency response system.

## 2. Development of Training Methodology

#### 2.1 Selection of Collaborative Function

One of the basic directions of the National Security Management Basic Plan is to establish a strong control tower and a collaborative system that integrates and supports the responding organizations in emergency. Therefore, when a disaster occurs, collaboration between related agencies should be built through 13 essential collaborative functions; situation management, urgent social stability, maintenance of site environment, traffic provision, promotion of disaster prevention, maintenance of social order, medical care and prevention, volunteer management, urgent repair of facility, energy recovery, resource support, urgent support of communication, search and rescue [1].

In the event of a radiation accident in neighboring country, the disaster managing department is the Nuclear Safety and Security Commission (NSSC). The collaborating organizations are limited to the main ministries among related organizations, but limited to the level of the institution holding the practical manuals. The collaborative organizations defined in this study are the following 21 organizations;

Nuclear Safety and Security Commission, National Security Office (crisis management center), The Office for Government Policy Coordination, Ministry of Public Safety and Security, Ministry of Strategy and Finance, Ministry of Science, ICT and Future Planning, Ministry of Education, Ministry of Foreign Affairs, Ministry of Justice, Ministry of National Defense, Ministry of Culture, Sports and Tourism, Ministry of Agriculture, Food and Rural Affairs, Ministry of Trade, Industry and Energy, Ministry of Health and Welfare, Ministry of Environment, Ministry of Land, Infrastructure, and Transport, Ministry of Oceans and Fisheries, Korea Communications Commission, Ministry of Food and Drug Safety, Korea Customs Service, Korea Meteorological Administration.

In this study, we selected 9 collaborative functions that can be applied in case of nuclear accident in neighboring country among the above 13 collaborative functions. Table I shows collaborative functions among corresponding organizations according to four levels of crisis alert. The four levels of crisis alert are in the standardized manual [2] of risk management prepared by Nuclear Safety and Security Commission.

#### 2.2 Development of Training Scenario

A base study that enhances emergency response at the national level is required by supplementing the response manual for radiological disaster in neighboring country. In this study, we developed the anticipated scenarios and response systems by collecting, searching, and analyzing data such as related regulations and manuals on the radiological disaster in neighboring country.

Training scenarios that integrate the radiological disaster situation of neighboring country and the measures of related organizations according to the time of the accident are under development. Table II is the base accident scenario of Hongyanhe nuclear power plant in China and this can be utilized as prototype in development of training scenarios.

As a fundamental scenario, it is supposed that LOCA and SBO due to an earthquake occurred at Hongyanhe NPP in China, which has the shortest distance of about 500 km from Korea. Since the accident, air current may be introduced directly to the Korean peninsula, and thus serious phase is issued.

Level	Blue	Yellow	Orange	Red
Function	-Synthesizing and managing crisis	information and situation		
Situation management	<ul> <li>Analysis and response to nuclear accident in neighboring country</li> <li>Providing information on the public to the media</li> </ul>	- Enhancing environmental radiation monitoring	- Early start of Neighboring Country's Incident Response Center and the Central Disaster Relief Center, if necessary - Analyzing and evaluating domestic radiation effects	- Start and operation of Neighboring Country's Incident Response Center and the Central Disaster Relief Center - Operating National Crisis Evaluation Conference
Resource support		Supporting activities of related ministries such as contamination inspection, decontamination and exposure management     Supporting materials and human resources for radiation emergency medical care		
Maintenance of social order	- Access control for damaged area, maintenance of social order, prevention of public order			
Urgent social stability		- Preparing countermeasures to radioactive contamination inspection and shipment restriction for domestic agricultural, livestock, marine and processed products		<ul> <li>Performing radioactive contamination inspection and shipment restriction for domestic agricultural, livestock, marine and processed products</li> </ul>
		- Performing radioactive contamination inspection and import restriction, if necessary, for agricultural, livestock, marine and processed products from nation occurring accident		
Traffic provision		- Restriction of aircraft flight agai	<ul> <li>nst radioactive contaminated areas.</li> <li>Restriction of ship navigation agareas</li> </ul>	gainst radioactive contaminated
Medical care	<ul> <li>Establishing and checking cooperation for radiation emergency medical treatment support</li> </ul>	<ul> <li>Installation of on-site medical ce</li> <li>Acquisition and use of medicines</li> </ul>	ychological and life stabilization ination inspection of public in dama nter, operation of medical institution s and medical equipment	
Maintenance of site environment	- Investigating characteristics of radioactive contamination in disaster area	<ul> <li>Establishment and implementation of decontamination plans for radioactive contaminated areas</li> <li>Establishment of contaminated area and restriction of access to local public</li> <li>Enforcement of traffic control measures</li> </ul>		
Search and rescue	- Emergency relief action such as	tion such as transportation of person contaminated to designated hospital - Performing public protection action		
Promotion of disaster		- Support for disaster broadcasting	g and response to rumor via SNS	
prevention			<ul> <li>Sending disaster message for the</li> <li>Support for disaster online broad</li> </ul>	

Table I: Collaborative Functions according to Crisis Alert Level

#### 3. Development of Training Evaluation Model

Not only development of training scenarios but establishing an evaluation methodology that can enhance the effectiveness of training to respond for radiological disaster in neighboring country is necessary. In this study, the evaluation factors of 2016 Disaster Response Safety Korea Training Plan [3] were applied to the emergency response training system for radiological accidents in neighboring country. These factors evaluate the implementation of the four stages of emergency response training (training planning, design, implementation, evaluation and devising improvement plan) and include 13 evaluation areas (Fig. 1).

A training evaluation model was developed, reflecting characteristics of nuclear accident in neighboring country based on the Fig. 1. Table III suggests an evaluation model that can improve the training system by subdividing evaluation criteria for 23 evaluation factors. Each color in Table III indicates the corresponding evaluation area shown in Fig. 1.

Table II: Base Accident Scena	rio of Hongyanhe NPP
-------------------------------	----------------------

Table II: Base Accident Scenario of Hongyanhe NPP			
Time	Situation	On-site	NSSC's Action
(hh:mm)	Setting	Situation	
ea	00:00 Scale 9.0 earthquake occurred near Hongyanhe NPP in China	Reactor trip	
00:00		Occurrence of LOCA and SBO	
00:05		Establishing emergency plan and response center	- Recognizing and judging situation
00:10			<ul> <li>Issue of blue alert</li> <li>Propagating the situation to the relevant organizations</li> </ul>
00:30	Performing actions of blue step		Checking cooperation system with related organizations     Establishing ways to manage the situation     Providing information to respond to media
01:00	Occurring severe accident	Determining core cooling failure, declaring emergency situation	<ul> <li>Issue of yellow alert</li> <li>Propagating the situation to the relevant agencies</li> </ul>
01:10			- Establishing a situation management team

#### Transactions of the Korean Nuclear Society Autumn Meeting Gyeongju, Korea, October 26-27, 2017

01:20	Performing actions of yellow step	Ordering public evacuation	Enhancing environmental radiation monitoring and open to the press     Supporting the response activities of related organizations such as contamination inspection, decontamination, exposure management     Conducting contamination inspection for the entry.
02:00	Release of Radioactive material	Core disruption	
		Hydrogen explosion	
02:05		Expanding radius of evacuation area	<ul> <li>Issue of orange alert</li> <li>Propagating the situation to the relevant agencies</li> </ul>
02:10			- Establishing Radioactive Central Control Center
02:20	Performing actions of orange step		<ul> <li>Analysis and evaluation of domestic radiation effects</li> <li>Review of public protection action</li> <li>Enhancing environmental radiation monitoring and open to the press</li> <li>Supporting the response activities of related organizations such as contamination inspection, decontamination, exposure management</li> </ul>
	Inflow of radioactive material		- Confirmation of increased environmental radiation.
03:00			-Discussing with National Security Office and Ministry of Public Safety and Security on issuing red alarm
03:05			<ul> <li>Issue of red alert</li> <li>Propagating the situation to the relevant organizations</li> </ul>
03:10			- Establishing and operating neighboring incident response center
03:20	Performing actions of red step		Review and request of public protection action     Strengthening national environmental radiation monitoring system     Supporting radiation protection and radiation emergency medical technology.     Carrying out radioactive exploration for damage (expected) area and contamination inspection for local public cooperating with local governments, Ministry of National Defense, etc.
04:00	End of training		

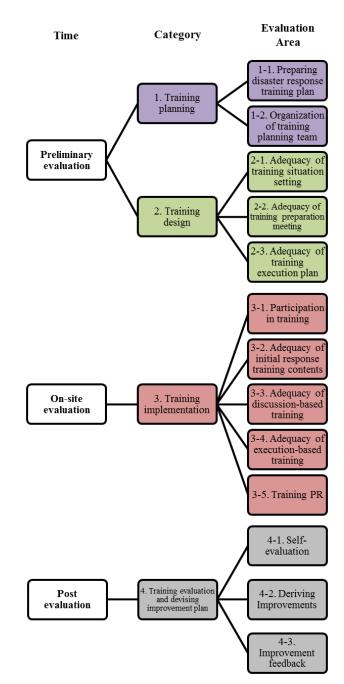


Fig. 1. Structure of Training Evaluation Model.

Evaluation Factor         Criftration of regulation on the disaster response rules in the crisis management manual           (1) Adequacy of crisis management manual         Confirmation of individual mission card of crisis management manual           (2) Adequacy of training plan by collaborative function         Confirmation of the establishment of plans for the collaborative function and core work.           (3) Adequacy of training plan by collaborative function plan to collaborative function and core work.         Confirmation of approval by NSSC Chairperson for the collaborative function planning team includes working-level of nuclear accident in negibboring country           (3) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of organization and operation of training planning team         Confirmation of work division such as command team, execution team, planning team under training planning team           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations of the scole of training securatio Confirmation of participation of relevant organizations of the scole of training participation relevant organization of detailed schedule such as training time and place, etc.           (6) The specificity of the execution plan scope         Confirmation of operation of the following agencies and departments           (7) Substantiality of execution plan scope         Confirmation of operation of the following agencies in the training plansing relipforing C		: Training Evaluation Model
(1) Adequacy of crisis management manual         rules in the crisis management manual           (2) Adequacy of training plan by collaborative function         Confirmation of the extend bilishment of plans for the collaborative function of nuclear accident in neighboring country           (3) Adequacy of training plan by collaborative function         Confirmation of managing department of collaborative function and core work.           (4) Adequacy of training confirmation of notification of collaborative function planning to institutions         Confirmation of notification of collaborative function planning to institutions           (3) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of nuclear accident in incidents in neighboring country           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian coefts, and civilian organizations, civilian coefts, and civilian organizations, civilian coefts, and civilian organizations, civilian coefts, and civilian organizations, civilian coeffs, and civilian organizations, civilian coefts, and civilian organizations in the training planning and design planse           (6) The specificity of the execution plan contents         Confirmation of necessary functions according to confirmation of relevant on of the collowing agencies and departments           (7) Substantiality of execution plan contents         Confirmation of neacessary functions and design planse	Evaluation Factor	Criteria
(1) Adequacy of crisis management manual       Confirmation of individual mission card of crisis management manual         (2) Adequacy of training plan by collaborative function       Confirmation of the carbolishment of plans for the collaborative function of mackar accident in neighboring country         (3) Adequacy of organization and operation of training planing team       Confirmation of paperval by NSC Chairperson for the collaborative function planning         (3) Adequacy of organization and operation of training planning team       Confirmation of paperval by NSC Chairperson for the collaborative function planning         (4) Adequacy of organization and operation of training planning team       Confirmation of the approval by the manager or higher position for organizing the training planning team         (4) Adequacy of situation setting (scenario) by disaster type       Confirmation of training scenario Confirmation of application of the disaster characteristics in the training scenario Confirmation of participation of the disaster characteristics of accident in neighboring country         (5) Expert participation rate by disaster type       Confirmation of necessary functions according to characteristics of accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of the source required for accident in neighboring country         (7) Substantiality of execution plan contents       Confirmation of the source required for accident in neighboring country         (7) Substantiality of execution plan contents       Confirmation of participation of the collabisaster Relief Center (metropolitan, elementary		
management manual         management manual           Confirmation of the current status of the energency neighboring country         Confirmation of the establishment of plans for the collaborative function of nuclear accident in neighboring country           (2) Adequacy of training plan by collaborative function         Confirmation of managing department of collaborative function of nuclear accident in neighboring country           (3) Adequacy of organization and operation of training planning team         Confirmation of noification of collaborative function planning to institutions           (4) Adequacy of organization and operation of training planning team         Confirmation of nuclear accident in neighboring country           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of vork division such as command team, execution team, planning team under training planning team leader           (5) Expert participation rate by disaster type         Confirmation of realities of the training scenario organizations, civilian experts, and civilian organizations, civilian experts, and civilian organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to haracteristics accident in neighboring country           (6) The specificity of the execution plan contents         Confirmation of realities relief Center, the Confirmation of realities relief Center, the Confirmation of the scope of training participating agencies and departments           (6) The specificity of the confirmation of neglescene	(1) Adamacy of crisis	
Confirmation of the current status of the emergency network           (2) Adequacy of training plan by collaborative function         Confirmation of the establishment of plans for the collaborative function of orclear accident in neighboring country           (3) Adequacy of function         Confirmation of manging department of collaborative function and core work           (4) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team.           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of work division such as command team, execution team, planning team under training planning team leader           (6) Expert participation at by disaster type         Confirmation of participation of the disaster characteristics in the training scenario           (6) The specificity of the execution plan scope         Confirmation of recorsery functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of detailed schedule such as training time and place, etc.           (7) Substantiality of execution plan contents         Confirmation of operation of the closolidated Command on of operation of the local Disaster Relief Center (metropolitan, elementary), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Confirmation of on situation of situation agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Resp		
(2) Adequacy of training function         Confirmation of the establishment of plans for the collaborative function of nuclear accident in neighboring country           (3) Adequacy of organization and operation of training planning team         Confirmation of approval by NSSC Chairperson for the collaborative function and core work           (4) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (5) Expert participation setting (scenario) by disaster type         Confirmation of values accident in-icidents in neighboring country           (6) The specificity of the execution plan scope         Confirmation of participation of training scenario Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training scenario           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies: and departments           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies: the Central Disaster Relief Center (he Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Disaster Relief Center (metropolitan, elementary),		
(2) Adequacy of training plan by collaborative function of managing department of collaborative function and core work         (3) Adequacy of training planning to institutions         (3) Adequacy of organization and operation of training planning to institutions         (3) Adequacy of organization and operation of training planning team includes working-level of nuclear accident incidents in neighboring country         (4) Adequacy of stituation setting team includes working-level of nuclear accident incidents in neighboring country         (4) Adequacy of stituation setting team includes working-level of nuclear accident incidents in neighboring country         (5) Expert participation rate by disaster type         (6) The specificity of the execution fam, planning team includes working-level of nuclear accident in neighboring country         (6) The specificity of the execution plan of the disaster characteristics in the training scenario         (6) The specificity of the execution plan scope         (7) Substantiality of execution plan scope         (7) Substantiality of execution plan contents         (7) Substantiality of execution plan conteness of the consolidated Confirmation of operation of		
(2) Adequacy of training       neighboring country         (2) Adequacy of training       Confirmation of approval by NSSC Chairperson for the collaborative function and core work         (3) Adequacy of organization of the approval by the manager or higher position for organizing the training planning team includes working-level of nuclear accident incidents in neighboring country         (3) Adequacy of organization and operation of training planning team       Confirmation of the approval by the manager or higher position for organizing the training planning team         (4) Adequacy of situation setting (scenario) by team ease.       Confirmation of work division such as command team, execution team, planning team leader         (4) Adequacy of situation setting (scenario) by team ease.       Confirmation of application of the disaster characteristics in the training scenario         (5) Expert participation rate by disaster type       Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training scenario         (6) The specificity of the execution plan scope       Confirmation of resonary functions according to characteristics of accident in neighboring country         (7) Substantiality of execution plan contents       Confirmation of opticipation of situation and design planes         (7) Substantiality of execution plan contents       Confirmation of opticipation elementry. It b. Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Lincident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Dis		
(2) Adequacy of training plan by collaborative function and core work         (3) Adequacy of training planning to institutions         (3) Adequacy of organization and operation of training scanario of notification of collaborative function planning to institutions         (3) Adequacy of organization and operation of training planning team includes working-level of nuclear accident incidents in neighboring country         (4) Adequacy of situation setting team includes working-level of nuclear accident incidents in neighboring country         (5) Expert participation rate by disaster type         (6) The specificity of the execution plan scope accident in neighboring country         (6) The specificity of the execution plan scope accident in neighboring country         (7) Substantiality of execution plan context         (7) Substantiality of execution plan context         (7) Substantiality of execution plan context         (8) The interest of the raining scenario         (7) Substantiality of execution plan context         (8) The interest of the raining scenario of operation of the consolidated Confirmation of operation of the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring contry)         (9) Participation rate of firmation of operation of the following agencies: the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Licident Response Centery), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Licident Response Centery), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Licident Response C		
plan by collaborative function         collaborative function and core work           Confirmation of approval by NSSC Chairperson for the collaborative function planning         Confirmation of approval by NSSC Chairperson for the collaborative function planning           (3) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of work division such as command team, execution team, planning team under training planning team leader           (5) Expert participation rate by disaster type         Confirmation of ratinics genario           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies and departments           (9) The interest of the training institutions         Confirmation of operation of the following agencies: the Central Disaster Relief Center, the Central Emergency Control Center (Meighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command on of position of the insing presiding officer           (9) Participation rate of triaining institutions         Confirmation o	(2) Adequacy of training	
function         Confirmation of approval by NSSC Chairperson for the collaborative function planning (3) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of situation planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of work division such as command team, execution team, planning team under training planning team leader           (5) Expert participation rate by disaster type         Confirmation of rapification of the disaster characteristics in the training scenario           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies and departments           (7) Substantiality of execution plan contents         Confirmation of situation notice and situation determining meeting Confirmation of inplementation of situation determing meeting           (7) Substantiality of execution plan contents         Confirmation of poparition of the following agencies: the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Lincident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Disaster Relief Center (metropolitan, elementary), the Local Disaster Relief Center (metropolitan, elementary), the Local Disaster Relief Center (metropolitan, elementary		001
(3) Adequacy of organization and operation of collaborative function planning to institutions         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of situation glanning team includes         Confirm that training planning team includes           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of work division such as command team, execution team, planning team under training planning team leader           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of application of the disaster characteristics in the training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of recovers functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of resources required for accident in neighboring country           (6) The specificity of the execution plan contents         Confirmation of of the following agencies and departments           (7) Substantiality of execution plan contents         Confirmation of of the following agencies; the Central Disaster Relief Center, the Confirmation of orosspondence for the press		
(3) Adequacy of organization and operation of training planning team         Confirmation of the approval by the manager or higher position for organizing the training planning team           (4) Adequacy of situation security         Confirmation of work division such as command team, execution team, planning scenario           (5) Expert participation rate by disaster type         Confirmation of papication of training planning scenario           (5) Expert participation rate by disaster type         Confirmation of papication of the disaster characteristics in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of racibics of the training addising planse           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies and departments           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies; the Central Disaster Relief Center, the Confirmation of desafed schedule such as training time and place, etc.           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Disaster Relief Center, the Central Disaster Relief Center, the Confirmation of position of situation determining neeting           (7) Substantiality of execution plan contents         Confirmation of position of situation al there mining neeting           (7) Substantiality of execution plan contents         Confirmation of position of the training presiding officer           (8) The inter		
(3) Adequacy of organization and operation of training planning team       Confirmation of the approval by the manager or higher position for organizing the training planning team         (4) Adequacy of situation generation of training team includes working-level of nuclear accident incidents in neighboring country       Confirmation of work division such as command team, execution team, planning team under training planning team leader         (4) Adequacy of situation setting (scenario) by disaster type       Confirmation of training scenario         (5) Expert participation rate by disaster type       Confirmation of necessary functions according to characteristics of accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of necessary functions according to characteristics of accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of situation notice and situation of teacident in neighboring country         (7) Substantiality of execution plan contents       Confirmation of opartion of the following agencies: and departments         (7) Substantiality of execution plan contents       Confirmation of opartion of the following agencies: the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency		
(3) Adequacy of organization and operation of training planning team       bigher position for organizing the training planning team         (4) Adequacy of situation setting (scenario) by disaster type       Confirmation of work division such as command team, execution team, planning team under training planning team leader         (4) Adequacy of situation setting (scenario) by disaster type       Confirmation of training scenario         (5) Expert participation rate by disaster type       Confirmation of realities of the training scenario         (6) The specificity of the execution plan scope       Confirmation of necessary functions according to characteristics of accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of frestration of training participating agencies and departments         (7) Substantiality of execution plan contents       Confirmation of sources required for accident in neighboring country         (7) Substantiality of execution plan contents       Confirmation of of training participating agencies the Central Binary (contraction of the cola Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, element		
(3) Adequacy of organization and operation of training planning team       team       Confirm that training planning team includes working-level of nuclear accident incidents in neighboring country.         (4) Adequacy of situation setting (scenario) by disaster type       Confirmation of application of the disaster characteristics in the training scenario         (5) Expert participation rate by disaster type       Confirmation of participation of relevant organizations, civilian experts, and civilian organizations, civilian experts, and civilian organizations in the training planning team leader.         (6) The specificity of the execution plan scope       Confirmation of resources required for accident in neighboring country.         (6) The specificity of the execution plan scope       Confirmation of resources required for accident in neighboring country.         (6) The specificity of the execution plan scope       Confirmation of situation notice and situation agencies and departments.         (7) Substantiality of execution plan contents       Confirmation of situation notice and situation determining meeting.         (7) Substantiality of execution plan contents       Confirmation of correspondence for the (regishoring lincident Response Center), the Local Disaster Relief Center, the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring lincident Response Center), the Local Disaster Relief Center, the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring lincident Response Center), the Local Disaster Relief Center, the Central Disaster Relief Center, the Confirmation of orsito or orsito in sinstrem Relief Center (Neighboring lincident Response Center), the		
organization and operation of training planning team         Confirmation of work division such as command team, execution team, planning team under training planning team leader           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of application of the disaster characteristics in the training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of of the scope of training network agencies; the Central Disaster Relief Center, the Confirmation of of the following agencies; the Central Disaster Relief Center, the Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Confirmation of on-site inspection, observation and inkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Confirmation of on-site inspection, observation and command by training presiding officer           (8) The interest of the training institutions         Confirmation of or-site inspection, observation and comarad by training presiding officer		
operation of training planning team         working-level of nuclear accident incidents in neighboring country           Confirmation of work division such as command team, execution team, planning team under training planning team leader           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civillan experts, and civillan organizations, civillan experts, and civillan organization of the scope of training participating agencies and departments           (6) The specificity of the execution plan scope         Confirmation of situation notice and situation determining meeting.           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center and the Consolidated Command Center           (8) The interest of the training presiding officer         Confirmation of correspondence for the press Confirmation of correspondence for the press Confirmation of the a		
planning team         Registroning country           Confirmation of work division such as command team, execution team, planning team under training planning team leader           (4) Adequacy of situation setting scenario         Confirmation of training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training scenario           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies and departments           Confirmation of operation of the scope of training participating agencies the Central Disaster Relief Center, the Central Disaster Relief Center, the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center and the Consolidated Command Center           (7) Substantiality of execution plan contents         Confirmation of orrespondence for the press           (8) The interest of the training presiding officer         Confirmation of conspondence for the pressiding officer           (9) Participation rate of training institutions         Confirmation of consumanding solution to the problem and he saures by training presiding officer           (11) Substantiality of situation proganization seven by the unuber of those on training plans or scenarios         Confirmation of co		
(4) Adequacy of situation setting scenario         Confirmation of training scenario           (4) Adequacy of situation setting (scenario) by disaster type         Confirmation of realities of the training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civillan experts, and civillan organizations, civillan organization, confirmation of nescores required for accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies; the Central Disaster Relief Center, the Confirmation of organization of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central		
(4) Adequacy of situation setting (scenario) by disaster type         Confirmation of training scenario           (5) Expert participation rate by disaster type         Confirmation of realities of the training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (7) Substantiality of execution plan contents         Confirmation of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of situation notice and situation determining meeting           (7) Substantiality of execution plan contents         Confirmation of situation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster           (8) The interest of the training presiding officer         Confirmation of on-site inspection, observation and command Center           (9) Participation rate of training institutions         Confirmation of consumanding presiding officer           (10) Adequacy of the situation propagation system         Confirmation of the answer of training presiding officer           (11) Substantiality of situation ing upper the resolution propagation system         Confirmation of the number of actual training organizations versus the number o		
(4) Adequacy of situation setting (scenario) by disaster type         Confirmation of rapilication of the disaster characteristics in the training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of resources required for accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring lincident Response Center), the Local Disaster           (7) Substantiality of execution plan contents         Confirmation of inplementation of situation notice and situation determining meeting           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster           (8) The interest of the training presiding officer         Confirmation of or-site inspection, observation and command us of training presiding officer           (10) Adequacy of the soft we training presiding officer         Confirmation of the number of actual training presiding officer           (11) Substantiality of situation propagation system         Confirmation of the number of the so		
(4) Adequacy of situations         (5) Expert participation rate by disaster type         (6) The specificity of the execution plan scope         (7) Substantiality of execution plan contents         (8) The interest of the training presiding officer         (9) Participation rate of training presiding officer         (10) Adequacy of the situation propagation system         (11) Substantiality of situation propagation         (10) Adequacy of the situation propagation system         (10) Adequac		
disaster type         Confirmation of realities of the training scenario           (5) Expert participation rate by disaster type         Confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (7) Substantiality of execution plan contents         Confirmation of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the		Confirmation of application of the disaster
(5) Expert participation rate by disaster type         Confirmation of relatites of the training scenario confirmation of participation of relevant organizations, civilian experts, and civilian organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of situation notice and situation determining meeting           (7) Substantiality of execution plan contents         Confirmation of inplementation of situation determining meeting           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center           (8) The interest of the training presiding officer         Confirmation of on-site inspection, observation and command Dy training presiding officer           (9) Participation rate of training institutions         Confirmation of the number of actual training organizations versus the number of those on training plans or scenarios           (10) Adequacy of the situation propagation system         Confirmation of availability of materials to identify disaster damage level		
(5) Expert participation rate by disaster type       organizations, civilian experts, and civilian organizations in the training planning and design phase         (6) The specificity of the execution plan scope       Confirmation of necessary functions according to characteristics of accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of the scope of training participating agencies and departments         Confirmation of detailed schedule such as training time and place, etc.       Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center and the Consolidated Command Center         (7) Substantiality of execution plan contents       Confirmation of implementation of situation allinkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center and the Consolidated Command Center         (7) Substantiality of execution plan contents       Confirmation of correspondence for the press         (7) Substantiality of execution plan contents       Confirmation of correspondence for the press         (7) Substantiality of execution plan contents       Confirmation of no-site inspection, observation and command generics; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Emergency Control Center and the Consolidated Command Center         (8) The interest of the training presiding officer       Confirmation of correspondence for the press <td></td> <td></td>		
rate by disaster type         organizations in the training planning and design phase           (6) The specificity of the execution plan scope         Confirmation of necessary functions according to characteristics of accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of resources required for accident in neighboring country           (6) The specificity of the execution plan scope         Confirmation of the scope of training participating agencies and departments           (7) Substantiality of execution plan contents         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center           (7) Substantiality of execution plan contents         Confirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center           (8) The interest of the training presiding officer         Confirmation of on-site inspection, observation and command by training presiding officer           (9) Participation rate of training institutions         Confirmation of the answer of training presiding officer           (10) A	(5) Export portion	
(6) The specificity of the execution plan scope       Confirmation of necessary functions according to characteristics of accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of resources required for accident in neighboring country         (6) The specificity of the execution plan scope       Confirmation of the scope of training participating agencies and departments         (7) Substantiality of execution plan contents       Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center and the Consolidated Command Center         (7) Substantiality of execution plan contents       Confirmation of operation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center         (8) The interest of the training presiding officer       Confirmation of on-site inspection, observation and command by training presiding officer         (9) Participation rate of training institutions       Confirmation of the number of actual training organizations versus the number of those on training presiding officer         (10) Adequacy of the situation propagation system       Confirmation of formation of availability of materials to identify disaster damage leve		
(6) The specificity of the execution plan scopeConfirmation of necessary functions according to characteristics of accident in neighboring country(6) The specificity of the execution plan scopeConfirmation of resources required for accident in neighboring country(7) Substantiality of execution plan contentsConfirmation of detailed schedule such as training time and place, etc.(7) Substantiality of execution plan contentsConfirmation of situation notice and situation determining meeting(7) Substantiality of execution plan contentsConfirmation of operation of the following agencies; the Central Disaster Relief Center (netropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Officer(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command Denter(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of materials to identify disaster damage level(11) Substantiality of situa	The of disuster type	0 01 0 0
(6) The specificity of the execution plan scopeConfirmation of resources required for accident in neighboring country(6) The specificity of the execution plan scopeConfirmation of the scope of training participating agencies and departments(7) Substantiality of execution plan contentsConfirmation of situation notice and situation determining meeting(7) Substantiality of execution plan contentsConfirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Comfirmation of orsito in of raining presiding officer(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of materials to identify disaster damage level(11) Substantiality of situation indegentConfirmation of availability of materials to identify disaster damage level		Confirmation of necessary functions according to
(6) The specificity of the execution plan scope       neighboring country         Confirmation of the scope of training participating agencies and departments       Confirmation of detailed schedule such as training time and place, etc.         (7) Substantiality of execution plan contents       Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center, the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center         (8) The interest of the training presiding officer       Confirmation of on-site inspection, observation and command to position of training presiding officer         (9) Participation rate of training institutions       Confirmation of the answer of training presiding officer         (10) Adequacy of the situation propagation system       Confirmation of availability of materials to identify disaster damage level         (11) Substantiality of situation indegent       Confirmation of availability of materials to identify		
execution plan scopeConfirmation of the scope of training participating agencies and departmentsConfirmation of detailed schedule such as training time and place, etc.Confirmation of situation notice and situation determining meetingConfirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command departaining presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plas or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of materials to identify disaster damage level(11) Substantiality of situation judgment meetingConfirmation of formation and dispatc		
agencies and departments         Confirmation of detailed schedule such as training time and place, etc.         Confirmation of situation notice and situation determining meeting         Confirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center         (7) Substantiality of execution plan contents       Confirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center         Confirmation of orrespondence for the press       Confirmation of on-site inspection, observation and command by training presiding officer         (8) The interest of the training presiding officer       Confirmation of commanding solution to the problem and measures by training presiding officer         (9) Participation rate of training institutions       Confirmation of the answer of training presiding officer         (10) Adequacy of the situation propagation system       Confirmation of availability of materials to identify disaster damage level         (11) Substantiality of situation judgment       Confirmation of availability of materials to identify disaster damage level		
Confirmation of detailed schedule such as training time and place, etc.Confirmation of situation notice and situation determining meetingConfirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of anal measures by training presiding officer(11) Substantiality of situation ing plans or scenariosConfirmation of availability of materials to identify disaster damage level Confirmation of formation and dispatch of practical	execution plan scope	
time and place, etc.Confirmation of situation notice and situation determining meetingConfirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of matianility of situation of availability of materials to identify disaster damage level Confirmation of formation and dispatch of practical		
(7) Substantiality of execution plan contentsdetermining meeting(7) Substantiality of execution plan contentsConfirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the answer of training presiding officer Confirmation of the answer of training presiding officer(10) Adequacy of the situation propagation systemConfirmation of availability of materials to identify disaster damage level(11) Substantiality of situation judgment meetingConfirmation of availability of materials to identify disaster damage level		
(7) Substantiality of execution plan contentsConfirmation of operation of the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the answer of training presiding officer Confirmation of the answer of training presiding officer(10) Adequacy of the situation propagation systemConfirmation of availability of materials to identify disaster damage level(11) Substantiality of situation judgment meetingConfirmation of oraviation and dispatch of practical		
(7) Substantiality of execution plan contentsagencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of mation of availability of materials to identify disaster damage level(11) Substantiality of situation judgment meetingConfirmation of availability of materials to identify disaster damage level		
(7) Substantiality of execution plan contentsCentral Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of or-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the answer of training presiding officer(10) Adequacy of the situation propagation systemConfirmation of availability of matinality of situation of availability of materials to identify disaster damage level(11) Substantiality of situation judgment meetingConfirmation of formation and dispatch of practical		
(7) Substantiality of execution plan contentsIncident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of mation of availability of materials to identify disaster damage level Confirmation of formation and dispatch of practical		5
(7) Substantiality of execution plan contentsEmergency Control Center and the Consolidated Command Center(7) Substantiality of execution plan contentsEmergency Control Center and the Consolidated Confirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of orrespondence for the press Confirmation of correspondence for the press(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training programing officer(10) Adequacy of the situation propagation systemConfirmation of availability of anization of availability of materials to identify disaster damage level(11) Substantiality of situation judgment meetingConfirmation of formation and dispatch of practical		
(7) Substantiality of execution plan contents       Command Center         (8) The interest of the training presiding officer       Confirmation of on-site inspection, observation and command by training presiding officer         (9) Participation rate of training institutions       Confirmation of the number of actual training organization system         (11) Substantiality of situation propagation system       Confirmation of correspondence for the press         (11) Substantiality of situation in granization of on availability of materials to identify disaster damage level       Confirmation of the number of actual training organization is involved in the target organization		
execution plan contentsConfirmation of implementation of situational linkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of availability of situation judgment Confirmation of formation and dispatch of practical	(7) Calculation in the C	
Inkage and mutual aid system among the following agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of correspondence for the press Confirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the number of actual training organizations versus the number of those on training plans or scenarios(10) Adequacy of the situation propagation systemConfirmation of availability of mation of availability of formation of organization and dispatch of practical		Confirmation of implementation of situational
agencies; the Central Disaster Relief Center, the Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of correspondence for the press Confirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the answer of training presiding officer(10) Adequacy of the situation propagation systemConfirmation of availability of mation of availability of formation of availability of formation of formation and dispatch of practical	execution plan contents	
Central Emergency Control Center (Neighboring Incident Response Center), the Local Disaster Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command Center(8) The interest of the training presiding officerConfirmation of correspondence for the press(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officer(9) Participation rate of training institutionsConfirmation of the answer of training presiding officer(10) Adequacy of the situation propagation systemConfirm whether or not the relevant organization is involved in the target organization (11) Substantiality of situation judgment meetingConfirmation of formation and dispatch of practical		
Relief Center (metropolitan, elementary), the Local Emergency Control Center and the Consolidated Command CenterConfirmation of correspondence for the pressConfirmation of position of training presiding officer(8) The interest of the training presiding officerConfirmation of on-site inspection, observation and command by training presiding officerConfirmation of commanding solution to the problem and measures by training presiding officer(9) Participation rate of training institutions(10) Adequacy of the situation propagation system(11) Substantiality of situation judgment meetingConfirmation of availability of meteringConfirmation of availability of situation propagation system		Central Emergency Control Center (Neighboring
(8) The interest of the training presiding officer       Confirmation of correspondence for the press         (8) The interest of the training presiding officer       Confirmation of on-site inspection, observation and command by training presiding officer         (9) Participation rate of training institutions       Confirmation of the number of actual training organizations versus the number of those on training presiding officer         (10) Adequacy of the situation propagation system       Confirmation of availability of situation judgment         (11) Substantiality of situation judgment       Confirmation of availability of materials to identify disaster damage level		
Command Center           Confirmation of correspondence for the press           Confirmation of position of training presiding officer           Confirmation of on-site inspection, observation and command by training presiding officer           Confirmation of commanding solution to the problem and measures by training presiding officer           Confirmation of the number of actual training organizations versus the number of taxe on training plans or scenarios           (10) Adequacy of the situation propagation system         Confirmation of availability of situation judgment           Confirmation of availability of situation judgment         Confirmation of source of toranic of the target organization and command source of the target organization and dispatch of practical		
Confirmation of correspondence for the press           (8) The interest of the training presiding officer         Confirmation of position of training presiding officer           (8) The interest of the training presiding officer         Confirmation of on-site inspection, observation and command by training presiding officer           (9) Participation rate of training institutions         Confirmation of the answer of training presiding officer           (10) Adequacy of the situation propagation system         Confirm whether or not the relevant organization is involved in the target organization           (11) Substantiality of situation judgment         Confirmation of formation and dispatch of practical		
(8) The interest of the training presiding officer       Confirmation of position of training presiding officer         (8) The interest of the training presiding officer       Confirmation of on-site inspection, observation and command by training presiding officer         (9) Participation rate of training institutions       Confirmation of the number of actual training organizations versus the number of those on training programing organizations versus the number of those on training program of the situation propagation system         (10) Adequacy of the situation propagation system       Confirm whether or not the relevant organization is involved in the target organization         (11) Substantiality of situation judgment       Confirmation of formation of organization of availability of materials to identify disaster damage level		
(8) The interest of the training presiding officer       Confirmation of on-site inspection, observation and command by training presiding officer         (8) The interest of the training presiding officer       Confirmation of commanding solution to the problem and measures by training presiding officer         (9) Participation rate of training institutions       Confirmation of the number of actual training organizations versus the number of those on training plans or scenarios         (10) Adequacy of the situation propagation system       Confirm whether or not the relevant organization is involved in the target organization         (11) Substantiality of situation judgment       Confirmation of formation and dispatch of practical		
(8) The interest of the training presiding officer       command by training presiding officer         Confirmation of commanding solution to the problem and measures by training presiding officer         Confirmation of the answer of training presiding officer         (9) Participation rate of training institutions         (10) Adequacy of the situation propagation system         Confirmation of the relevant organization is involved in the target organization         (11) Substantiality of situation judgment         Confirmation of availability of materials to identify disaster damage level		
training presiding officer       Confirmation of commanding solution to the problem and measures by training presiding officer         Confirmation of the answer of training presiding officer       Confirmation of the answer of training presiding officer         (9) Participation rate of training institutions       Confirmation of the number of actual training organizations versus the number of those on training plans or scenarios         (10) Adequacy of the situation propagation system       Confirm whether or not the relevant organization is involved in the target organization         (11) Substantiality of situation judgment       Confirmation of availability of materials to identify disaster damage level         Confirmation of formation and dispatch of practical       Confirmation of formation and dispatch of practical	(9) The internet field	
problem and measures by training presiding officer           Confirmation of the answer of training presiding officer           (9) Participation rate of training institutions         Confirmation of the number of actual training organizations versus the number of those on training plans or scenarios           (10) Adequacy of the situation propagation system         Confirm whether or not the relevant organization is involved in the target organization           (11) Substantiality of situation judgment         Confirmation of availability of materials to identify disaster damage level		
Confirmation of the answer of training presiding officer           (9) Participation rate of training institutions         Confirmation of the number of actual training organizations versus the number of those on training plans or scenarios           (10) Adequacy of the situation propagation system         Confirm whether or not the relevant organization is involved in the target organization           (11) Substantiality of situation judgment         Confirmation of availability of disaster damage level         Confirmation and dispatch of practical	duning presiding officer	5
officer           (9) Participation rate of training institutions         Confirmation of the number of actual training organizations versus the number of those on training plans or scenarios           (10) Adequacy of the situation propagation system         Confirm whether or not the relevant organization is involved in the target organization           (11) Substantiality of situation judgment         Confirmation of availability of materials to identify disaster damage level           Confirmation of formation and dispatch of practical		
(9) Participation rate of training institutions       organizations versus the number of those on training plans or scenarios         (10) Adequacy of the situation propagation system       Confirm whether or not the relevant organization is involved in the target organization         (11) Substantiality of situation judgment       Confirmation of availability of materials to identify disaster damage level         Confirmation of formation and dispatch of practical		
training institutions     organizations versus the humber of those on training plans or scenarios       (10) Adequacy of the situation propagation system     Confirm whether or not the relevant organization is involved in the target organization       (11) Substantiality of situation judgment meeting     Confirmation of availability of disaster damage level	(9) Participation rate of	
(10) Adequacy of the situation propagation system       Confirm whether or not the relevant organization is involved in the target organization         (11) Substantiality of situation judgment meeting       Confirmation of availability of materials to identify disaster damage level		
situation propagation system     Confirm Whether of hot the relevant organization is involved in the target organization       (11) Substantiality of situation judgment meeting     Confirmation of availability of materials to identify disaster damage level       Confirmation of formation and dispatch of practical	-	training plans or scenarios
system         Involved in the target organization           (11) Substantiality of situation judgment         Confirmation of availability of materials to identify disaster damage level           Confirmation of formation and dispatch of practical		
(11) Substantiality of situation judgment     Confirmation of availability of materials to identify disaster damage level       Confirmation of formation and dispatch of practical		involved in the target organization
(11) Substantially of situation judgment meeting Confirmation of formation and dispatch of practical		Confirmation of availability of materials to identify
Confirmation of formation and dispatch of practical		disaster damage level
group, and the scope of call for workers		
	J J	group, and the scope of call for workers

	Confirmation of discussion by collaborative function such as prompt propagation of situation, maintenance of social order and urgent evacuation which is the most important in the beginning of a disaster
	Confirmation of determination on the crisis stage
(12) Fulfillment of operation of emergency equipment	Confirmation of presiding of meeting according to the operation regulations of neighboring incident response center
(13) Awareness of roles and duties of training participants	Confirmation of understanding of the roles and tasks of participants through inquiry
	Confirmation of division of collaborative functions according to the characteristics of accident in neighboring country
(14) Adequacy of discussion contents	Confirmation of deduction of mutual problems by collaborative function Confirmation of focus on problem solving that is
	most likely to occur Confirmation of the possibility of disaster spread in the future
	Confirmation of promotion of voluntary
(15) Adequacy of	participation and provision of sufficient
discussion process	participation, not just announcement of simple mission
(16) Initiative of participation in	Confirmation of active participation in discussions
discussions	to resolve mutual problems
(17) Adequacy of on-site	Confirmation of operation of actual disaster
training installation	facilities and direction of real-time situation
(place) and situation presentation	Confirmation of past disaster situation
presentation	Confirming the participation rate of the number of
	participating organizations in the on-site training compared to the number of those in the discussion-
(10) A	based training
(18) Awareness of participation rates and	Confirmation of designated roles and
roles and responsibilities	responsibilities of organization in on-site training
of on-site training	Confirmation of execution of commanding system during on-site training
institutions	Confirmation of application of golden time to the
	training situation
	Confirming adequacy of step-by-step warning
(10) A 1:	announcement (issuer, issuance procedure)
(19) Achievement of on- site training goal	Confirming achievement of on-site training compared to training goal
(20) Public information	Confirming the number of public relation type and
(20) I done information	performance
(21) Establishment and	Confirmation of establishment of self- evaluation plan
implementation of self-	Confirmation of affiliated and related organizations
evaluation plan	in the self- evaluation plan
	Confirmation of self- evaluation
	Confirmation of deduction of problems,
(22) Problems,	recommendations and achievements Confirmation of deduction of problems and
recommendations and	achievements in initial response
achievements	Confirming ratio of deduced cases compared to the
	number of organizations participating in training
	Confirmation of establishment of improvement planning
(23) Progress compared with improvement	Confirming specificity and feasibility of the improvement planning
	Confirming ratio of performance of improvement
	compared to deduced cases

#### 4. Conclusions

In this study, we developed fundamental materials such as training scenarios and evaluation factors to establish the emergency response training system for nuclear accident in neighboring country. Through this study, it is possible to improve relative regulation and establish the countermeasures for the radiological disaster in neighboring country by supplementing the existing manuals.

For the enhancement of emergency response system, we can expect the economic effect of saving health and property damage by performing prompt public protection measures. It is also expected to provide a basis for meeting the demand on information of public for radiological disaster in neighboring country. Furthermore, the result of this study will strengthen the capability of international emergency response through the linkage of disaster prevention training of Northeast Asian countries.

### ACKNOWLEDGMENTS

This work was supported by the Nuclear Safety Research Program through the Korea Foundation Of Nuclear Safety (KoFONS), granted financial resource from the Nuclear Safety and Security Commission (NSSC), Republic of Korea. (No. 1702004)

#### REFERENCES

- [1] Ministry of Public Safety and Security, Educational textbook for private experts: training evaluation and consulting.
- [2] Nuclear Safety and Security Commission, Radiological disaster in neighboring country-standardized manual of emergency management, 2016.
- [3] Ministry of Public Safety and Security, 2016 Disaster Response Safety Korea Training Plan, 2016.