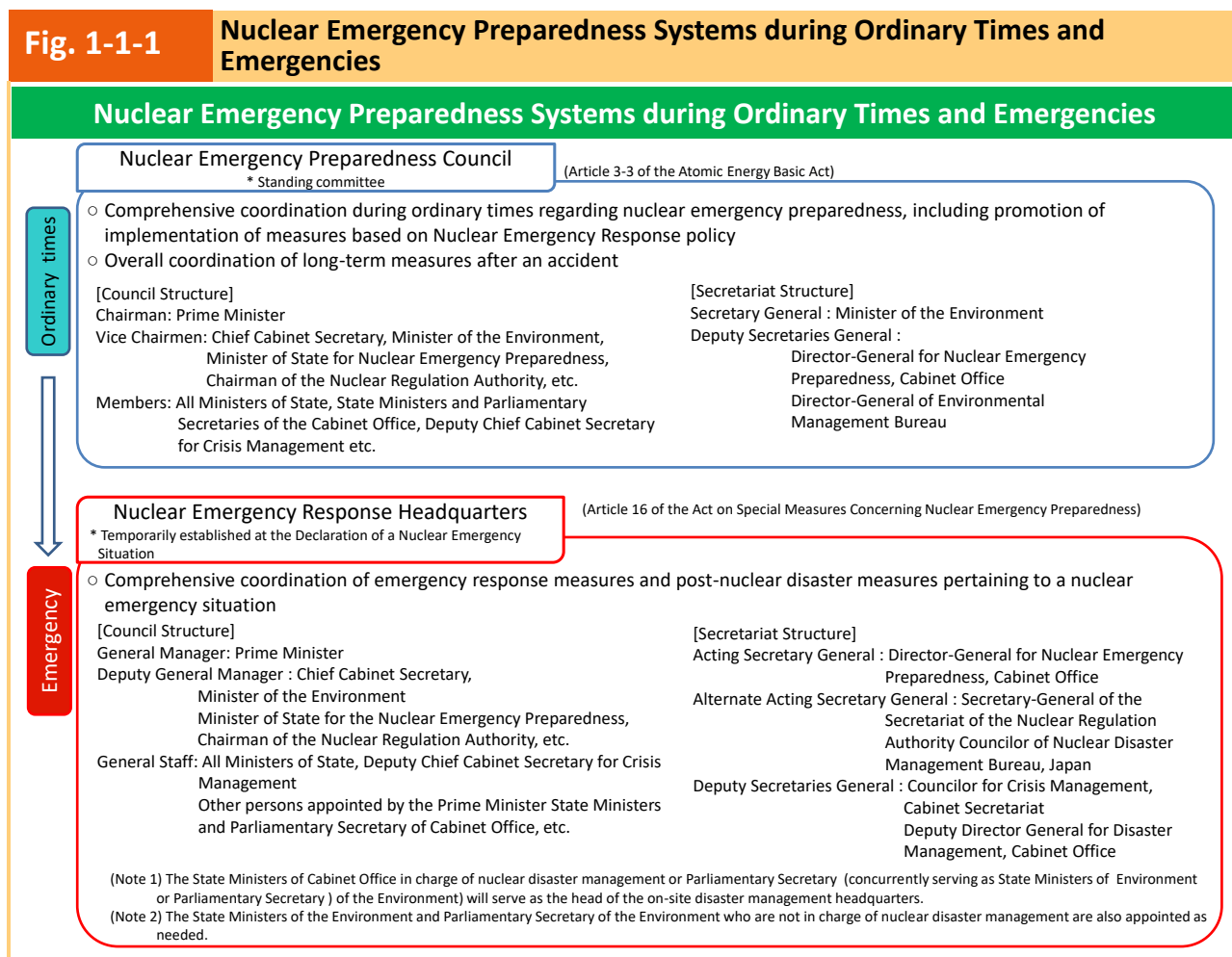


Chapter 2. Status of Countermeasures against Nuclear Emergency

Section 1. Nuclear Emergency Preparedness Systems

1-1 Nuclear Emergency Preparedness System in Ordinary Times

Measures related to nuclear disaster emergencies must be taken and promoted by the entire government in an integrated manner since the damage in the unlikely event of a nuclear emergency would be enormous and extensive. For this reason, to promote nuclear emergency preparedness measures by the entire government during ordinary times, the Cabinet has established an agency, the “Nuclear Emergency Preparedness Council.” The main role of this Council is to approve a Regional Emergency Response, which are confirmed to be concrete and reasonable in light of the NRA Guide for Emergency Preparedness and Response (NRA EPR Guide), by the Regional Nuclear Disaster Management Councils in each region with the participation of the Cabinet Office, other relevant ministries and agencies along with relevant local governments. The Nuclear Emergency Preparedness Council is chaired by the Prime Minister, vice-chaired by the Chief Cabinet Secretary, the Minister of the Environment, Minister of State for Nuclear Emergency Preparedness, and the Chairman of the Nuclear Regulation Authority. The members of this Council include the Ministers of State and the Deputy Chief Cabinet Secretary for Crisis Management (Fig. 1-1-1).



Source: Cabinet Office data

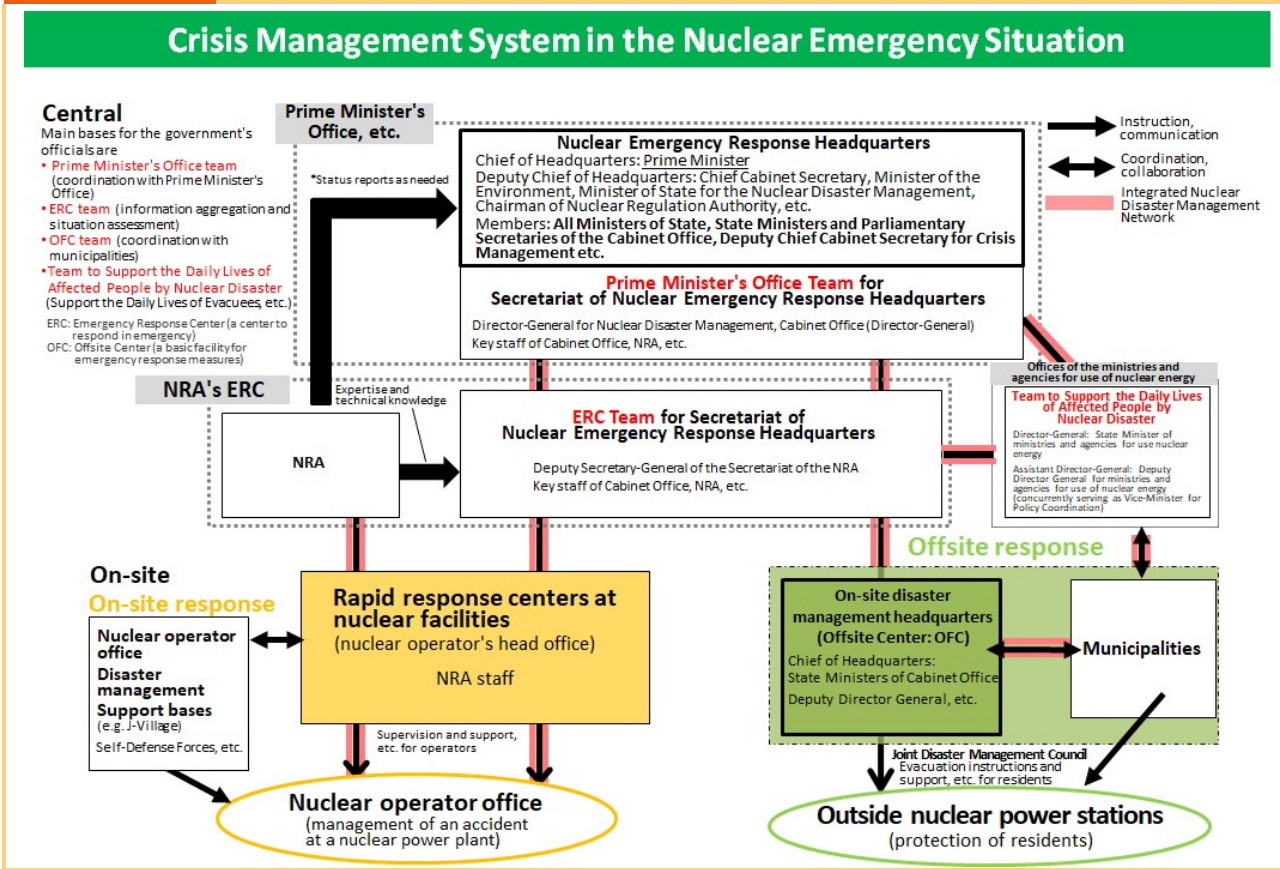
1-2 Nuclear Emergency Preparedness System in a time of Emergency

In the event of a nuclear emergency due to the release of a vast amount of radioactive materials, a Nuclear Emergency Response Headquarters will be established. The main role of this headquarters is to comprehend the current situation and damage at the site and to accurately and promptly implement emergency response measures appropriate to the situation. To this end, the Headquarters coordinates comprehensively with relevant national agencies and local governments. The Chief of Headquarters is headed by the Prime Minister, with the role of Deputy Chief taken up by the Chief Cabinet Secretary, the Minister of the Environment, Minister of State for Nuclear Emergency Preparedness, and the Chairman of the Nuclear Regulation Authority. The members of this Headquarters include the Ministers of State and the Deputy Chief Cabinet Secretary for Crisis Management (Fig. 1-1-1).

Regarding the separation of roles at this Headquarters, the Nuclear Regulation Authority will be solely responsible for making decisions on technical and specialized matters, while the relevant ministries and agencies will be responsible for procurement of equipment necessary for response to nuclear facilities and off-site response in general based on instructions from the Chief of Headquarters (Prime Minister). The secretariat of the Headquarters will be the Director-General for Nuclear Emergency Preparedness, the Cabinet

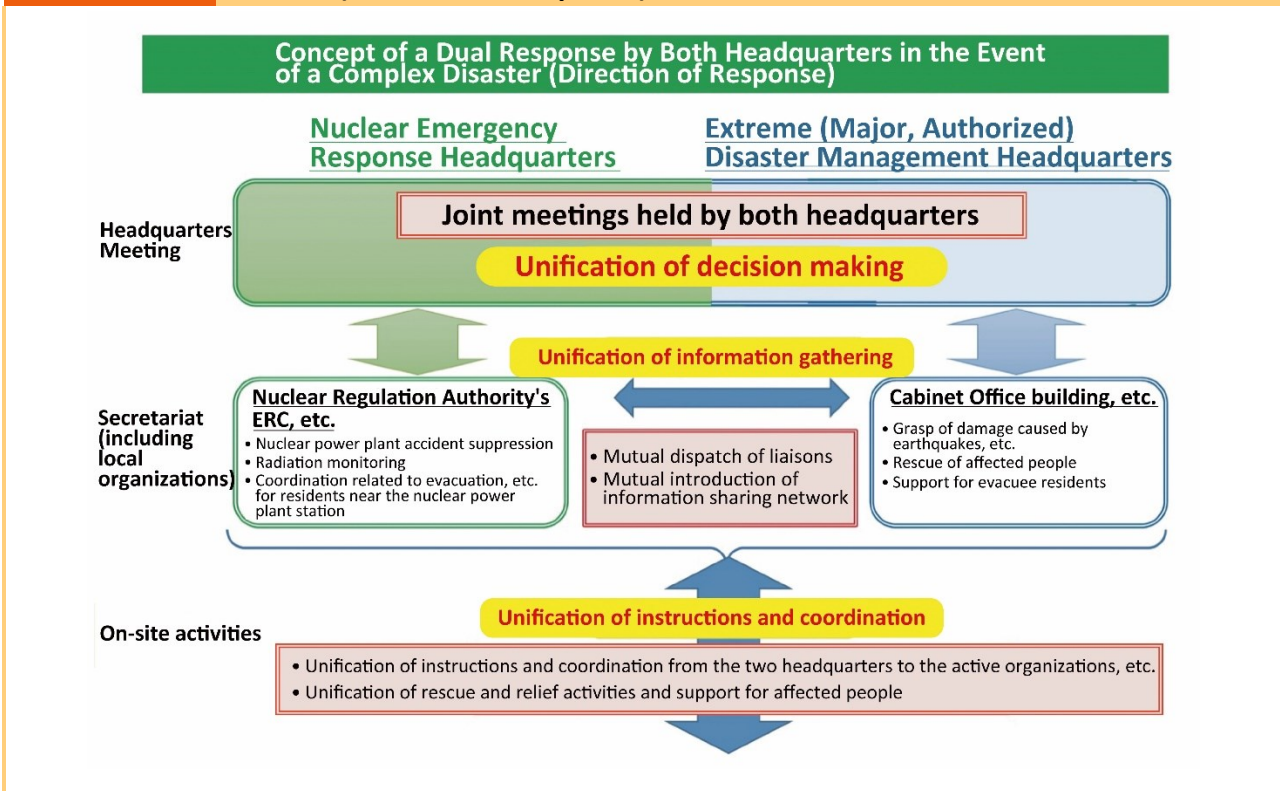
Office, which was established on October 14, 2014. In addition, regarding complex disasters, the Basic Disaster Management Plan was revised in July 2015 to establish a coordinated system that enables both the “Extreme Disaster Management Headquarters, which responds to natural disasters, or the “Major Disaster Management Headquarters (including the “Authorized Disaster Management Headquarters” after the revision of the “Basic Act on Disaster Management” in May 2021), and the “Nuclear Emergency Response Headquarters,” which responds to nuclear disasters, to collect information, make decisions, and provide instructions and coordination in an integrated manner, thereby strengthening the system against complex disasters (Fig. 1-2-1, Fig 1-2-2).

Fig. 1-2-1 Crisis Management System in the Nuclear Emergency Situation



Source: Cabinet Office data

Fig. 1-2-2 Concept of a Dual Response by Both Headquarters in the Event of a Complex Disaster (Direction of Response)



Source: Cabinet Office data

Section 2. Nuclear Emergency Measures at the Nuclear Regulation Authority (NRA)

Based on the lessons learned from the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi Nuclear Power Station (FDNPS), it is extremely important to continue efforts to ensure trust in nuclear regulatory administration. In order to fulfill its mission to protect people and the environment through sound regulation of nuclear energy, the Nuclear Regulation Authority (NRA) addresses various policy issues based on the following organizational principles: Independent decision-making, effective action, a transparent and open organization, ambition and responsibility, and responsiveness to emergencies.

2-1 Efforts Related to Nuclear Emergency Measures

The NRA has been working to improve the NRA EPR Guide to ensure that the criteria used in disaster management planning are always the most appropriate, including actively incorporating the latest international knowledge.

The NRA reviewed the requirements for emergency thyroid exposure dose monitoring to be implemented when there is a concern about internal exposure due to inhalation of radioactive iodine in the event of a nuclear disaster. It also examined the requirements for nuclear disaster base hospitals and other facilities. Based on the results, it revised the NRA EPR Guide at the 1st NRA meeting of FY 2022 (April 6, 2022).

In order to ensure the smooth implementation of nuclear disaster countermeasures, it is essential to take appropriate radiation protection measures for emergency workers supporting the implementation of protective measures for residents, as well as those radiation protection measures for residents. To enhance radiation protection measures for emergency workers, the NRA EPR Guide was revised at the 21st FY2022 NRA Commission Meeting (July 6, 2022).

To further strengthen the medical care system in the event of a nuclear disaster, the designation of the University of Fukui as an Advanced Radiation Emergency Medical Support Center as of April 1, 2023 was decided at the 81st NRA meeting of FY 2022 (March 8, 2023).

2-2 Efforts for Emergency Response

The NRA is continuously engaged in improving the capabilities of personnel involved in nuclear emergency response and identifying and addressing issues relating to regional Nuclear Emergency Preparedness Systems to improve them, through various training and drills in preparation for a nuclear emergency. In FY 2022, to enhance emergency response capabilities, the NRA conducted three tabletop exercises for emergency response centered on personnel responsible for decision-making in an emergency situation, such as the NRA Chairman and members, and NRA Secretariat senior officials. Some emergency drills by nuclear operators were participated in by the NRA Chairman and others.

The NRA also conducted drills in conjunction with the nuclear operators' disaster prevention drills in pursuit of smoother information sharing between the NRA Emergency Response Center (ERC) Plant Team and the nuclear operator's nuclear facility contingency response center. Moreover, the off-site Function Team and others also conducted two drills linked with the nuclear operators' disaster prevention drills.

Also, regarding commercial power reactor facilities and nuclear fuel facilities, the result of evaluations for nuclear operators' disaster prevention drills conducted at each nuclear facility was reported at the FY2022 the

Debriefing Session of Emergency Drills by Nuclear Operators. Moreover, based on the training scenarios discussed by the Training Scenario Development Working Group (https://www.nra.go.jp/disclosure/committee/youshikisya/bousai_kunren/index.html) held under the Debriefing Session, drills have been conducted to enhance the decision-making abilities of the directors of NPP emergency stations and central control rooms, as well as drills for improving on-site response capabilities. In FY 2022, drills based on scenarios developed in FYs2020 and 2021 were carried out to enhance the decision-making abilities of the directors of eight nuclear operating companies (nuclear operators) and those of ten nuclear operating companies. Furthermore, based on the exercise scenarios prepared in FY 2021, drills were conducted with 14 nuclear operators to improve their on-site response capabilities. Based on the results of these drills, work has begun on a new scenario for drills in FY 2022.

2-3 Efforts Related to Emergency Monitoring

The NRA has established "emergency monitoring centers" in all regions where nuclear facilities are located in order to conduct effective emergency monitoring based on the NRA EPR Guide. For each regional emergency monitoring center, necessary materials and equipment are maintained and managed to ensure that they function reliably in the event of a nuclear disaster. Furthermore, the emergency monitoring system is being enhanced and strengthened through the placement of staff in charge of radiation monitoring at the NRA regional office. As for the "Radiation Monitoring Information Sharing and Publication System", it is designed to consolidate, share among persons concerned, and promptly publish the results of emergency monitoring in the event of a nuclear disaster. And the NRA publicizes monitoring information from ordinary times through the system so that it can contribute to the smooth communication of information to the public in the event of an emergency.

2-4 Accidents and Breakdowns, etc.

The "Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors" (Act No. 166 of 1957) requires nuclear operators, etc., and the "Act on the Regulation of Radioisotopes, etc." (Act No. 167 of 1957) requires licensed users to report accidents, breakdowns, etc. to the NRA. In FY 2022, we received 3 reports from nuclear operators based on the "Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors" and 5 report from a licensed user based on the "Act on the Regulation of Radioisotopes, etc."

Section 3. Enhancement and Strengthening of Local Nuclear Emergency Preparedness System

3-1 Development and Support of Local Disaster Management Plans and Evacuation Plans

Local governments are required to prepare a local disaster management plan (Nuclear Disaster Risk Management edition) (hereinafter referred to as "local disaster management plan" in this chapter) based on the "Basic Act on Disaster Management" to specify basic measures to be taken by prefectures and municipalities in response to nuclear disasters.

Currently, based on the Basic Disaster Management Plan and the NRA EPR Guide, local disaster management plans are formulated by relevant local governments within an approximate 30 km radius from nuclear power plants (Fig. 3-1-1). It is important to make local disaster management plans more concrete and comprehensive, and the

government actively help the local governments with issues that are difficult to solve on their own as they proceed to embody evacuation plans and measures for persons requiring special care.

Fig. 3-1-1

Status of Local Disaster Management Plans and Evacuation plans (as of March 31, 2023)

	Target municipalities	The number of disaster management plans formulated	The number of evacuation plans formulated
Tomari Area	13	13	13
Higashidori Area	5	5	5
Onagawa Area	7	7	7
Fukushima Area	13	13	12
Kashiawazaki-Kariwa Area	9	9	9
Tokai Dai-ni Area	14	14	5
Hamaoka Area	11	11	11
Shiga Area	9	9	9
Fukui Area	23	23	23
Shimane Area	6	6	6
Ikata Area	8	8	8
Genkai Area	8	8	8
Sendai Area	9	9	9
Total 13 Areas	135	135	125

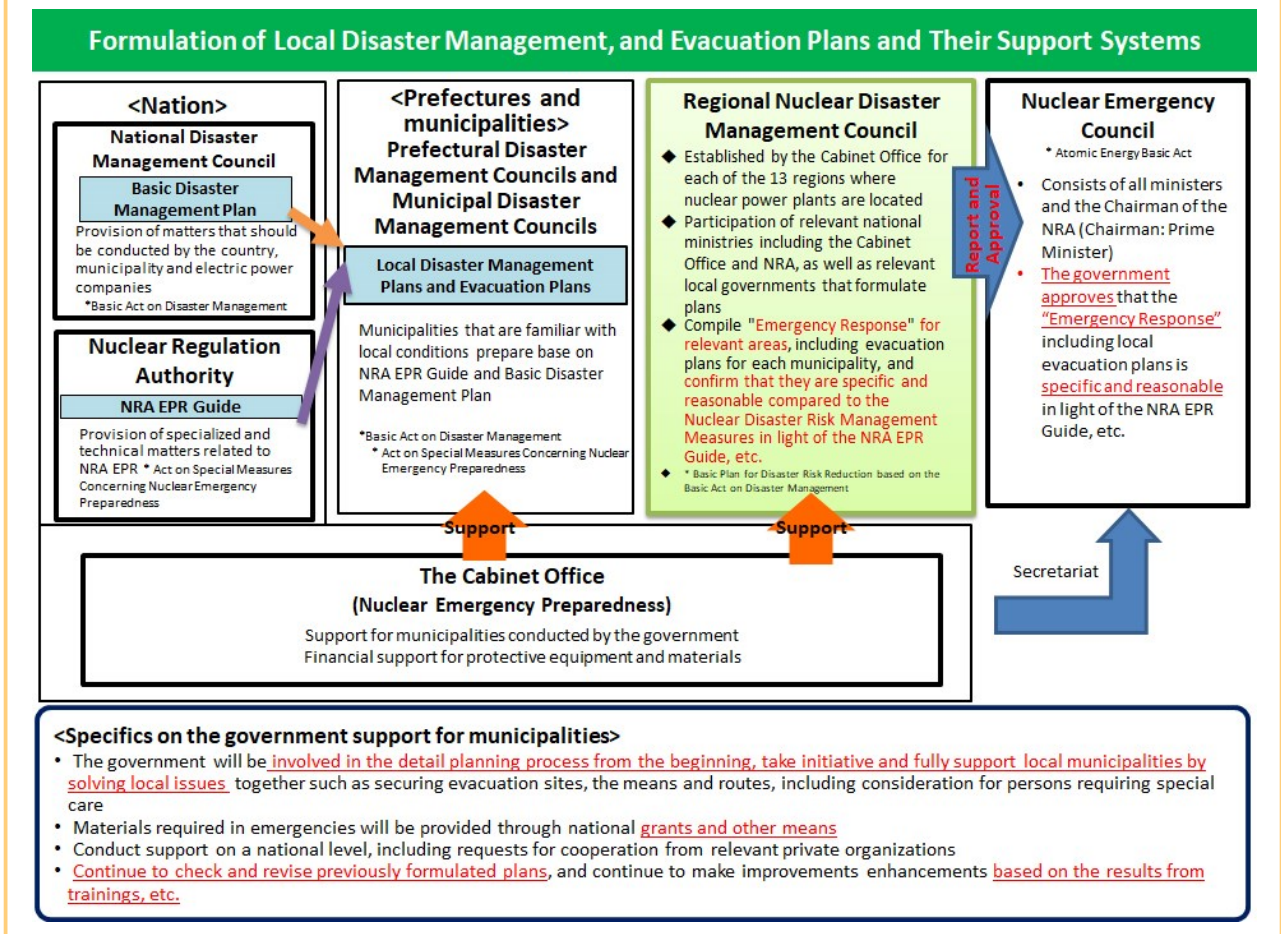
Source: Cabinet Office data

The national government addresses and promotes the establishment and enhancement of the Nuclear Emergency Preparedness System, including the securing of evacuation routes through road construction and other measures.

In March 2015, the Cabinet Office established the Regional Nuclear Disaster Management Council (hereinafter referred to as "Council") as a working team to solve issues raised at each of districts where nuclear power plants are located, and set a working group under this Council based on the "Future Actions to Enhance Local Disaster Management Plan" (decided by the Nuclear Disaster Management Council in September 2013) to support the implementation and enhancement of local disaster management plans and evacuation plans prepared by prefectures and municipalities. Each regional working group considers support on developing evacuation plans, wide-area coordination, and support from the national government's operational agencies. The national government and relevant local governments work together to realize and enhance local disaster management plans and evacuation plans (Fig.3-1-2).

Fig. 3-1-2

Formulation of Local Disaster Management Plans and Evacuation Plan and Their Support System



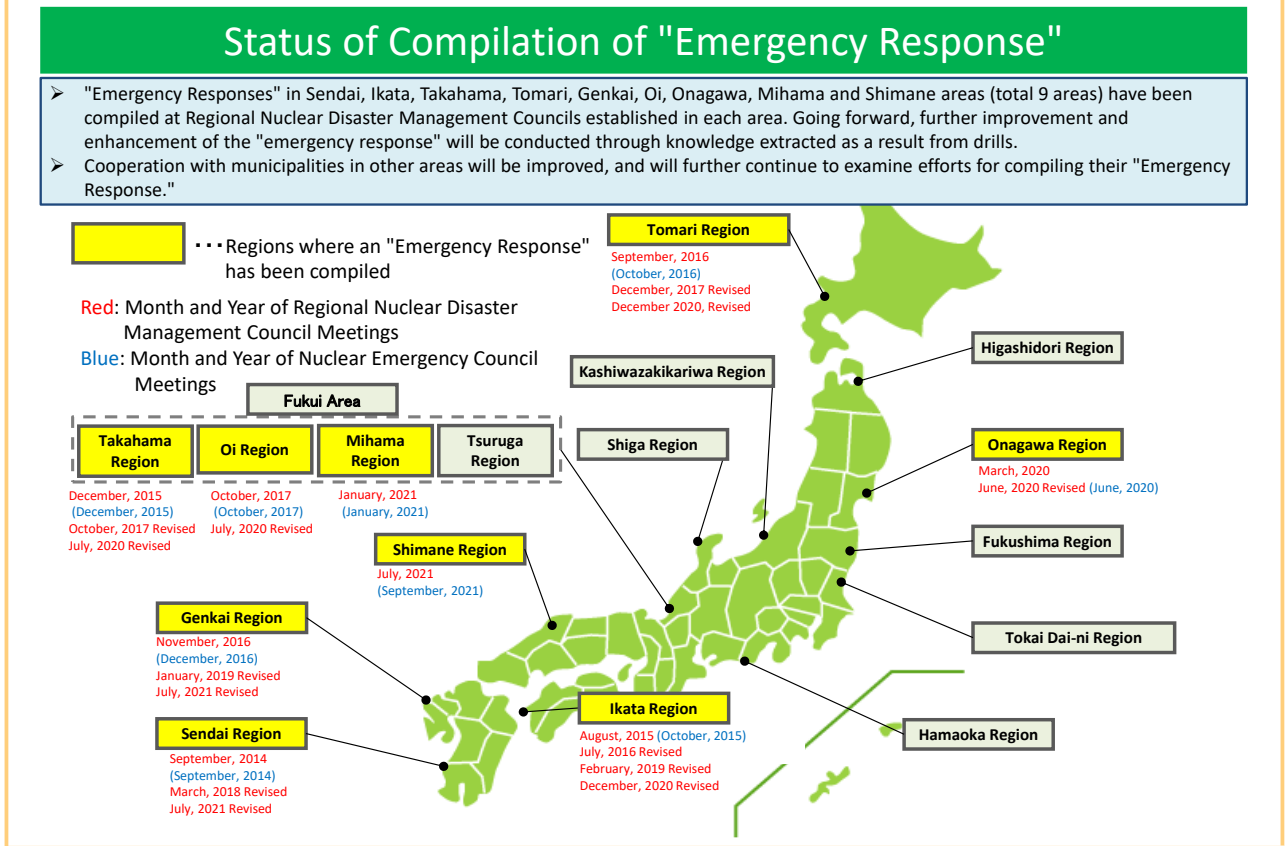
Source: Cabinet Office data

Regarding the concrete formulation and enhancement of Nuclear Emergency Preparedness Systems, each region’s council established by the Cabinet Office compiles the region-specific "emergency response," including local disaster management plans and evacuation plans of relevant local governments. The entities participating in these councils, including relevant government ministries and agencies, local governments, and organizations, check whether these region-specific measures for emergency preparedness are concrete and reasonable in light of the NRA EPR Guide and other related criteria. The emergency response confirmed by each council is reported to and approved by the Nuclear Emergency Council, which is chaired by the Prime Minister and consists of all cabinet ministers and the NRA Chairman. In addition to verifying each emergency response plan and supporting the concrete formulation and enhancement of a regional Nuclear Emergency Preparedness System based on such a plan (Plan), drills have been conducted according to the plan (Do), and points to be improved are identified from the drill results (Check), and the plan for each region is improved based on the points learned from the drills (Action); a PDCA cycle has been introduced. Through this cycle, the Cabinet Office and relevant local governments are continuously working to enhance and strengthen regional Nuclear Emergency Preparedness Systems and their effectiveness.

As of the end of FY2022, emergency responses by 9 regions of 16 regions in total were compiled, and their contents have been confirmed. (Fig.3-1-3).

Fig. 3-1-3

Status of Compilation of "Emergency Response"



Source: Cabinet Office data

Note that for the Fukui area, subcommittees will be set up in Tsuruga, Mihama, Ohi and Takahama regions to discuss specific issues that need to be resolved in each region.

3-2 Other Support and Measures for Related Prefectures

(1) Stockpiling and Distribution of Stable Iodine Agents

Stable iodine agents, which are taken to prevent or reduce internal exposure of the thyroid gland to radioactive iodine (I), are stockpiled and distributed in advance by local governments with financial support from the government in the PAZ (Precautionary Action Zone) and the UPZ (Urgent Protective Action Planning Zone). And the Cabinet Office has been stockpiling stable iodine agents for residents outside the UPZ.

With regard to advanced distribution, considering the burden of receiving stable iodine agents through emergency distribution, local governments are given support to operate advanced distribution appropriately for the residents in the UPZ where advanced distribution is expected to facilitate evacuation. As a part of limited and exceptional response to COVID-19 since 2020, local governments are encouraged to remotely hold the pre-distribution town-hall meetings by medical doctors, in compliance with the NRA EPR Guide and NRA's manual regarding distribution and taking of stable iodine agents.

(2) Designation of an Off-Site Center

Under Article 12, paragraph 1 of the "Act on Special Measures Concerning Nuclear Emergency Preparedness"

on Special Measures for Pandemic Influenza and New Infectious Diseases Preparedness and Response (Act No. 31 of 2012)" will be employed to the extents possible to provide the best nuclear disaster risk management measures possible in case of concurrent infectious disease outbreak. In addition, on 2nd November, 2020, the "Guidelines for the Implementation of Protective Measures in Case of Nuclear Disasters during an Epidemic of Infectious Diseases Due to the Spread of the Novel Coronavirus" was specified to protect life and health reasonably, taking into consideration various risks, including the possibility of COVID-19 aggravation among the elderly. Here are some of the points listed in the guidelines:

- At shelters and in evacuation vehicles, infection control measures, such as maintaining adequate physical distance, wearing masks, and thoroughly disinfecting hands, must be implemented
- Efforts must be made to prevent infection by trying to separate and isolate close contacts with positive patients, symptomatic people with fevers, coughs, etc., and other asymptomatic people.
- In the cases of sheltering-in-place in avoidance of exposure to radioactive materials, shared ventilation should be avoided. However, from the viewpoint of countermeasures against infectious diseases, efforts should be made to ventilate the area for a few minutes every 30 minutes or so, while paying close attention to the release of radioactive materials.

Based on the above, nuclear disaster risk management measures are being taken in accordance with the actual conditions of each site and regional situations.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/pdf/08_sonota_bougosochi.pdf
https://www8.cao.go.jp/genshiryoku_bousai/pdf/08_sonota_guidelines.pdf)

(4) Support for Facilitating Evacuation

Facilitating evacuation at the time of a nuclear disaster, such as by securing evacuation routes through road maintenance and improvement, is important from the perspective of the safety and security of local residents. The relevant ministries and agencies and the government as a whole are committed to cooperate for this purpose.

The Cabinet Office (Nuclear Disaster Management Bureau) has selected model evacuation routes that are more effective and efficient without obstructive factors and has been providing assistance to prefectures in preparing their evacuation facilitation plans, demonstrating improved models, and disseminating the results of these efforts. Based on the results of this model demonstration, the Cabinet Office established a new emergency evacuation facilitation project in FY 2021 under the "system of grant for emergency safety measures for nuclear facilities" to support traffic guidance measures to ensure the smooth evacuation or temporary relocation of residents and to improve the evacuation routes designated in local disaster management plans.

3-3 Drills and Training Related to Local Nuclear Emergency Preparedness Systems

(1) Support for Nuclear Emergency Drills in Local Governments

Local governments are required to conduct nuclear emergency response drills on a regular basis based on the "Basic Act on Disaster Management" and other relevant laws. In the drills organized by the prefectures, normally, prefectural governors, local governments, and relevant national and regional operational organizations such as the police, fire department, coast guard, and Self-Defense Forces will participate. There are some practical drills for evacuation and inspecting the evacuees (Fig. 3-3-1).

Each council provides necessary support for regions where the local disaster management plan and evacuation

plan have been concretized and enhanced, such as planning and implementation of drills, dissemination of evaluation methods, and implementation of the PDCA cycle through drills, with the aim of verifying the concreteness and effectiveness of the local disaster management plan and evacuation plan.

In addition, in March 2018, the Cabinet Office formulated the "Guidance for Planning, Implementation and Evaluation of Nuclear Emergency Response Drills," which provides basic guidelines for all aspects of drills, from planning, implementation, to evaluation of drills led by prefectures, and revised it in March 2019. Furthermore, the Cabinet Office has distributed the above-mentioned guidance to relevant prefectures along with the "Practical Drill Manual for Personnel in Charge of Nuclear Disaster Management," which describes specific items to be performed by nuclear disaster management personnel in accordance with the guidance, thereby disseminating the guidance and manual.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kunren/kunren.html)

Fig. 3-3-1 Status of Nuclear Emergency Response Exercises in All Areas Conducted by Local Governments in FY 2022

Areas	Exercise Name	Date
Tomari	Hokkaido Nuclear Emergency Response Exercise	October 31, 2022 and February 9, 2023
Higashidori	Aomori Prefecture Nuclear Emergency Response Exercise	November 17, 2022
Onagawa	Miyagi Prefecture Nuclear Emergency Response Exercise	October 29, 2022 and January 30, 2023
Fukushima	Fukushima Prefecture Nuclear Emergency Response Exercise	October 1, 2022 and January 27, 2023
Kashiwakakariwa	Niigata Prefecture Nuclear Emergency Response Exercise	October 24 to 26, 29, November 8, 2022 and February 8, 2023
Shiga	Ishikawa Prefecture Nuclear Emergency Response Exercise	November 23, 2022
	Toyama Prefecture Nuclear Emergency Response Exercise	
Fukui	Fukui Prefecture Comprehensive Nuclear Emergency Response Exercise	November 4 to 6, 2022 (* Comprehensive Nuclear Emergency Response Exercise by the government)
	Shiga Prefecture Nuclear Emergency Response Exercise	
	Gifu Prefecture Nuclear Emergency Response Exercise	
	Kyoto Prefecture Nuclear Emergency Response Exercise	
Hamaoka	Shizuoka Prefecture Nuclear Emergency Response Exercise	January 31 and February 4, 2023
Shimane	Shimane Prefecture Nuclear Emergency Response Exercise	November 7 and 12, 2022
	Tottori Prefecture Nuclear Emergency Response Exercise	
Ikata	Ehime Prefecture Nuclear Emergency Response Exercise	October 12, 2022 and February 2, 2023
	Yamaguchi Prefecture Nuclear Emergency Response Exercise	October 12, 2022
Genkai	Saga Prefecture Nuclear Emergency Response Exercise	October 29, 2022
	Nagasaki Prefecture Nuclear Emergency Response Exercise	October 29 and November 12, 2022
	Fukuoka Prefecture Nuclear Emergency Response Exercise	October 29, 2022
Sendai	Kagoshima Prefecture Nuclear Emergency Response Exercise	February 11, 2023

Source: Cabinet Office data

(2) Training for Employees of National and Local Governments, Operational Organizations, etc.

(Training program by the Government)

The Cabinet Office conducted a training course for nuclear disaster response personnel and tabletop exercises of on-site nuclear disaster management headquarters for those involved in disaster prevention work at the national and local governments, with the aim of helping them understand the concept of protective measures in the NRA EPR Guide and improve their ability to respond to a nuclear disaster.

In addition, a training course for core personnel was conducted for those who play a central role in disaster management to promote their understanding of the operation of a national headquarters in response to the

developments of a nuclear disaster. Also, a training course for practical personnel was conducted for those involved in disaster management in local governments to improve their ability to share the information of protective measures necessary for smooth evacuation of residents in the event of a nuclear disaster.

Furthermore, a basic training course on nuclear disaster prevention was conducted for those involved in disaster prevention operations in the national government, with the aim of providing them with the basic knowledge necessary for radiation protection.

1. Training for nuclear disaster response personnel

Training for personnel involved in disaster prevention operations of the government and local governments who respond to nuclear disasters is conducted for the purpose of acquiring basic knowledge about nuclear disaster risk management measures based on laws and regulations, NRA EPR Guide, and lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station. In FY 2022, 38 sessions were held, and their main contents are as follows.

- Overview of laws and regulations related to nuclear emergency preparedness (classroom lecture).
- Basic concept of radiation protection based on the Nuclear Disaster Risk Management Emergency Response Measures (classroom lecture)
- Lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station (classroom lecture), etc.

2. On-site nuclear disaster management headquarters tabletop exercises

For personnel involved in disaster prevention operations of the government and local governments who respond to nuclear disasters, these exercises are implemented for the purpose of acquiring the ability to respond to emergency, and to verify and improve local disaster management plans and evacuation plans formulated by local governments. In FY 2022, 13 sessions were held, and its main contents are as follows.

- Activities at the emergency response base facility (classroom lecture)
- Functional group exercises
- Tabletop exercises based on scenarios, etc.

3. Core human resource development training

In order to develop human resources who can play a central role in responding to a nuclear disaster, a training course for core human resources development is conducted for personnel who play a central role in nuclear disaster in the national government and local governments, with the aim of acquiring necessary knowledge and improving their abilities. In FY 2022, 2 sessions were held for each of national, prefectural and municipal personnel, and their main contents of these training sessions are as follows.

- Emergencies in power reactors (classroom lecture)
- Nuclear emergencies and health effects (classroom lecture)
- Protective measures in nuclear emergencies (classroom lecture)
- Flow of response in accordance with the progress of a nuclear emergency situation (classroom lecture)
- Tabletop exercises

4. Practical human resource training

a. Response to inspecting the evacuees

This training is for local government personnel in charge of implementation plans for inspecting the evacuees and simple decontamination during evacuation. The purpose of this training is to develop personnel who will be in charge of preparing specific plans and manuals for contamination screening, as well as personnel who will be in charge of the screening sites. In FY 2022, 4 sessions were held, and their main contents are as follows.

- Basic concept of inspecting the evacuees (classroom lecture)
- Exercises on planning and operation of inspecting the evacuees

b. Evacuation by bus, etc.

For local government officials in charge of bus evacuation plans, practical human resources training is conducted with the aim of developing human resources who can prepare specific plans and manuals for bus evacuation. In FY 2022, 4 sessions were held, and their main contents are as follows.

- Business procedures and preparations in advance for securing and arranging evacuation buses for residents (classroom lecture)
- Sharing of information on preparations for evacuation of residents by bus in each prefecture and municipality, identification of issues and consideration of improvements

c. Sharing of the status of protective measures and others

This training is designed for local government officials who are in charge of compiling and sharing information on the "status of protective measures," with the aim of helping them understand how to understand the situations surrounding a disaster and share information among related parties, which is necessary for the concrete implementation of protective measures in each situation. In FY 2022, 2 sessions were held, and their main contents are as follows.

- Operation of compiling and sharing information necessary for "sharing the status of protective measures" (classroom lecture)
- Organization of items to be confirmed in each situation, and examination of the confirmation method.

(Training programs by local governments)

Training courses for disaster prevention officials and basic training courses on nuclear disaster prevention were planned and implemented by prefectures on their own initiative, with support from the Cabinet Office as necessary.

1. Training for those involved in disaster prevention

This training program for disaster prevention workers was conducted for private business operators who will be involved in the protection of residents in the event of a nuclear disaster, with the aim of providing them with the basic knowledge necessary for radiation protection, the basic concept of protection of residents, and the flow of protection activities for residents.

2. Basic training on nuclear disaster prevention

Basic training on nuclear emergency preparedness was conducted for those involved in disaster prevention operations at local governments and other organizations that respond to nuclear disasters, with the aim of providing them with the basic knowledge necessary for radiation protection.



At a classroom for lecture (Training for nuclear emergency response personnel)



Simulation training (Tabletop exercises at the nuclear disaster on-site disaster management headquarters)



Task exercise (Core human resources development training)



Hands-on training
(Practical human resources training)

3-4 Reinforcement of International Collaboration

International organizations such as the International Atomic Energy Agency (IAEA) and other countries have been making various efforts for off-site nuclear emergency preparedness, and it is necessary to incorporate their advanced knowledge in order to improve the level of nuclear emergency preparedness in Japan.

In order to achieve this goal, cooperation has been strengthened with the departments in charge of nuclear emergency preparedness in various countries, opinions are exchanged on a regular basis, and the sharing of international knowledge and experience on nuclear emergency preparedness is promoted by mutual invitation to drills and other events. In addition, surveys have been conducted on IAEA standards for off-site nuclear emergency preparedness and the systems and operations of major nuclear power user countries.

(1) Bilateral Cooperation on Nuclear Emergency Preparedness System

1. Cooperation with the United States of America (USA)

Based on the framework of the Emergency Management Working Group (EMWG) established under the U.S.-Japan Bilateral Commission on Civil Nuclear Cooperation established in 2012, the U.S. Department of Energy (DOE), the Federal Emergency Management Agency (FEMA), the U.S. Nuclear Regulatory Commission (NRC), and other relevant U.S. agencies and Japan have been strengthening the cooperation regarding Nuclear Emergency Preparedness Systems through regular exchanges of views and mutual invitation to drills. In FY 2022, following meetings were held online: one EMWG co-chairs' meeting and one technical workshops on protective measures under pandemic, training and professional human resources development.

2. Cooperation with the French Republic (France)

Based on the "Memorandum of Understanding on Cooperation for Crisis Management in Case of Nuclear Accident" concluded in 2015 between the Parliamentary Vice-Minister for the Cabinet Office and the Director General of the Directorate-General for Civil Protection and Crisis Management of French Ministry of the Interior, the two countries have deepened cooperation for their Nuclear Emergency Preparedness Systems through mutual invitations to drills and regular meetings of the "Cooperation Committee for Planning and Crisis Management in Case of Nuclear Accident," which was launched in 2019. In FY 2022, the French side was invited to Japan's Nuclear Energy Disaster Prevention Drill, where the Japanese side introduced local disaster risk management activities and exchanged opinions on how to provide information to French residents in Japan in the event of an accident.

3. Invitation to observe drills

Regarding the Nuclear Energy Disaster Prevention Drill, the aforementioned U.S., France, and other foreign countries and international organizations are invited to observe the drill. The Nuclear Energy Disaster Prevention Drill for the Mihama Nuclear Power Station (hereinafter referred to as "Mihama NPS") of Kansai Electric Power Company, conducted from November 4 to 6, 2022, hosted 28 visitors from seven countries and regional organizations involved in nuclear disaster management. During the visit (observation), the participants stayed at the site for three days, including pre-briefing and opinion exchange meetings. After the Drill, the Japanese side exchanged opinions regarding the Drill and emergency preparedness system with the overseas observers.

(2) Cooperation with International Agencies and Investigation of Overseas Trends

There has also been active engagement in cooperation and information exchange with the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency of the Organization for Economic Co-operation and Development (OECD/NEA). With regard to the IAEA, in order to cooperate in the preparation of standards for offsite nuclear disaster prevention and to collect information, we regularly attend the Emergency Preparedness and Response Standards Committee (EPReSC). We also cooperate in various information exchange and human resources development activities. At meetings related to nuclear emergency preparedness, such as the Working Party on Nuclear Emergency Matters (WPNEM) held by the OECD/NEA, information is exchanged on the systems and operations related to nuclear emergency preparedness in major nuclear power user countries.

Section 4. FY 2022 Comprehensive Nuclear Emergency Response Exercise

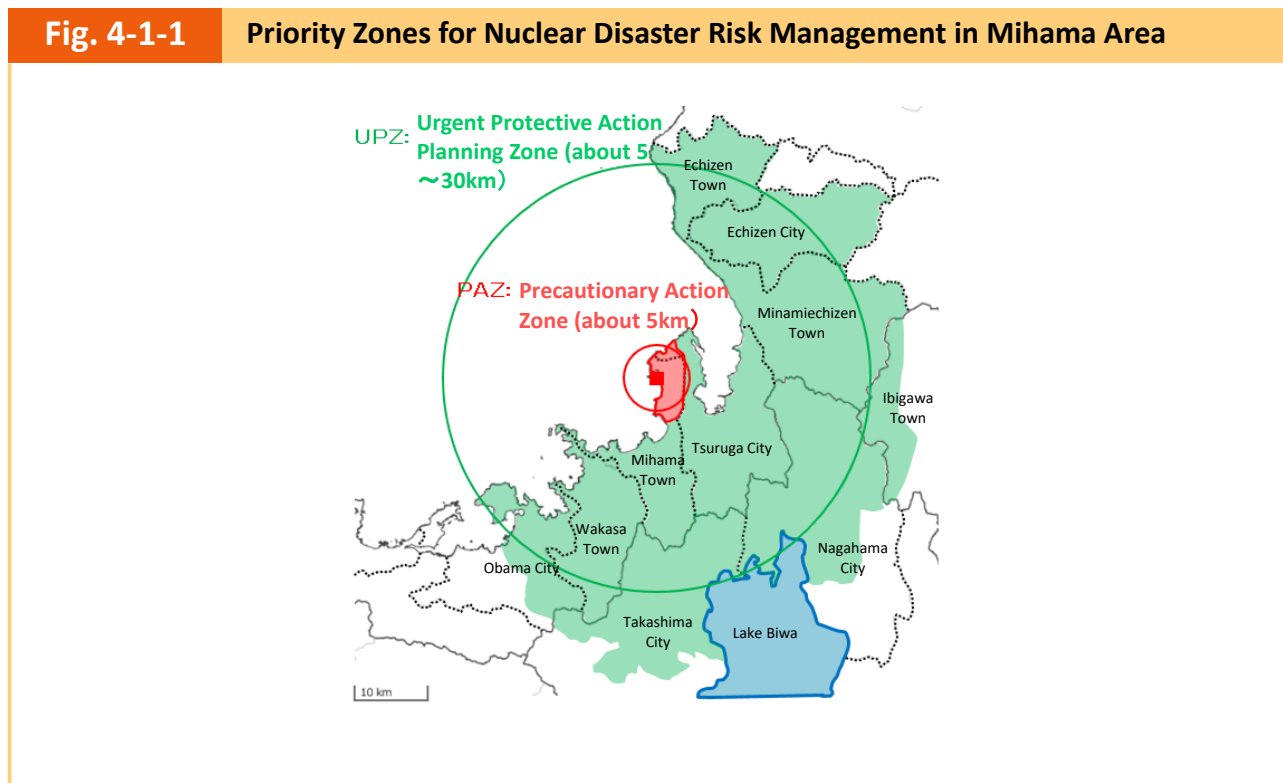
4-1 Implementation Overview

(1) Definition and Purpose

The purpose of the Comprehensive Nuclear Emergency Response Exercise is to evaluate the response system in the event of a nuclear disaster. Based on the Act on Special Measures Concerning Nuclear Emergency Preparedness, this is a joint exercise conducted by the national government, local governments, and nuclear operators to prepare for a nuclear emergency. In FY 2022, the Comprehensive Nuclear Emergency Response Exercise was conducted for the following purposes.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kunren/kunren.html)

- To confirm the effectiveness of the disaster prevention systems of the national government, local governments, and nuclear operators, and the cooperative systems of related organizations.
- To confirm the central and local systems and the procedures stipulated in the manuals for nuclear emergencies.
- To verify the evacuation plan specified in the "Emergency Response in the Mihama Area" (Fig. 4-1-1).
- To identify lessons learned based on the results of the exercise, and to consider emergency response measures.
- To develop the skills of personnel involved in Nuclear Emergency Preparedness Measures, and to promote public understanding of nuclear disaster prevention.



Source: Geospatial Information Authority of Japan's website (<http://maps.gsi.go.jp/#9/35.795538/136.051941>)

Prepared by the Disaster Management Bureau of the Cabinet Office based on the Geospatial Information Authority of Japan's "Blank Map" (<https://maps.gsi.go.jp/#10/35.703032/135.964050>)

(2) Implementation Period and Subjected Power Plant

Exercises were conducted at the Mihama Nuclear Power Station from November 4 to 6, 2022.

(3) Participating Organizations

- Government agencies: Cabinet Secretariat, the Cabinet Office, Nuclear Regulation Authority, and other relevant ministries and agencies
- Local governments: Fukui Prefecture, Mihama Town, Tsuruga City, Wakasa Town, Obama City, Minami Echizen Town, Echizen City, Echizen Town, Shiga Prefecture, Nagahama City, Takashima City, Gifu Prefecture, Ibigawa Town and other related municipalities
- Operator: Kansai Electric Power Company
- Related organizations: National Institutes for Quantum Science and Technology, Japan Atomic Energy Agency, etc.

(4) Assumed Accident Scenario

An earthquake with its epicenter in Reinan, Fukui Prefecture, occurs. This causes the operating Mihama NPP Unit 3 to scram. In addition, a reactor coolant leakage occurs, combined with a series of equipment failures, leading to the loss of steam generator cooling and reactor water injection functions, thus resulting in a site area emergency and a state of general emergency.

(5) Drill Details

Based on the objectives of the drill, the 3 items listed below were the main focus, which ranged from initial response drills to actual drills in response to a full-scale emergency situation, depending on the situational changes.

4-2 Overview of Drill Results

(1) Establishment of a Prompt Initial Response System

The national government, local governments, and nuclear operators gathered personnel and ascertained the current situation in order to establish their respective initial response systems, and shared information with each other using videoconferencing systems and other means. In addition, the State Minister of the Cabinet Office, government officials, and experts were dispatched to the emergency preparedness base facility (Mihama Off-site Center) and rapid response centers at nuclear facilities (the head office of Kansai Electric Power Company).



Personnel who assembled at the site

(2) Decision-making on Protective Action Implementation Policies through Coordination between the Central and Local organizations

An emergency response system was established at the Prime Minister's office, the Cabinet Office Building, the

NRA Secretariat's Emergency Response Center, the Off-site Center, the Fukui Prefectural Office, and other locations. Along with this, information sharing and the coordination of protective measures, involving local organizations, were carried out centrally. At the Prime Minister's office, the Prime Minister issued a Declaration of a Nuclear Emergency Situation and held a Nuclear Emergency Response Headquarters meeting to determine policies for emergency response measures.



Exercise at the Joint Meeting of the Nuclear Emergency Response Headquarters with the participation of Prime Minister Kishida and related cabinet ministers (Prime Minister's Office)

(3) Evacuation of Residents in and out of the prefecture and sheltering indoors

In response to a site area emergency and a state of general emergency, evacuation of residents in the Precautionary Action Zone (PAZ) was conducted with cooperation from the Ministry of Defense, the Self-Defense Forces, and other bodies in charge of field response, as well as private transportation. Also, residents in the Urgent Protective Action Planning Zone (UPZ) were evacuated indoors, and efforts were made to promote understanding of the significance of the indoor evacuation and other related matters.

Assuming that radioactive materials were released and the OIL2 level was exceeded based on the Operational Intervention Level (OIL), a drill was conducted for the temporary relocation and contamination screening of the residents in some areas within the UPZ.



Resident evacuation drill

4-3 Efforts after the Drill

Based on the lessons learned from this drill, we will strive to continuously improve the nuclear disaster prevention system by enhancing the content of future drills and improving various plans and manuals. This will also be utilized to improve the "Emergency Response in the Mihama Area" in the Regional Nuclear Disaster Management Council.