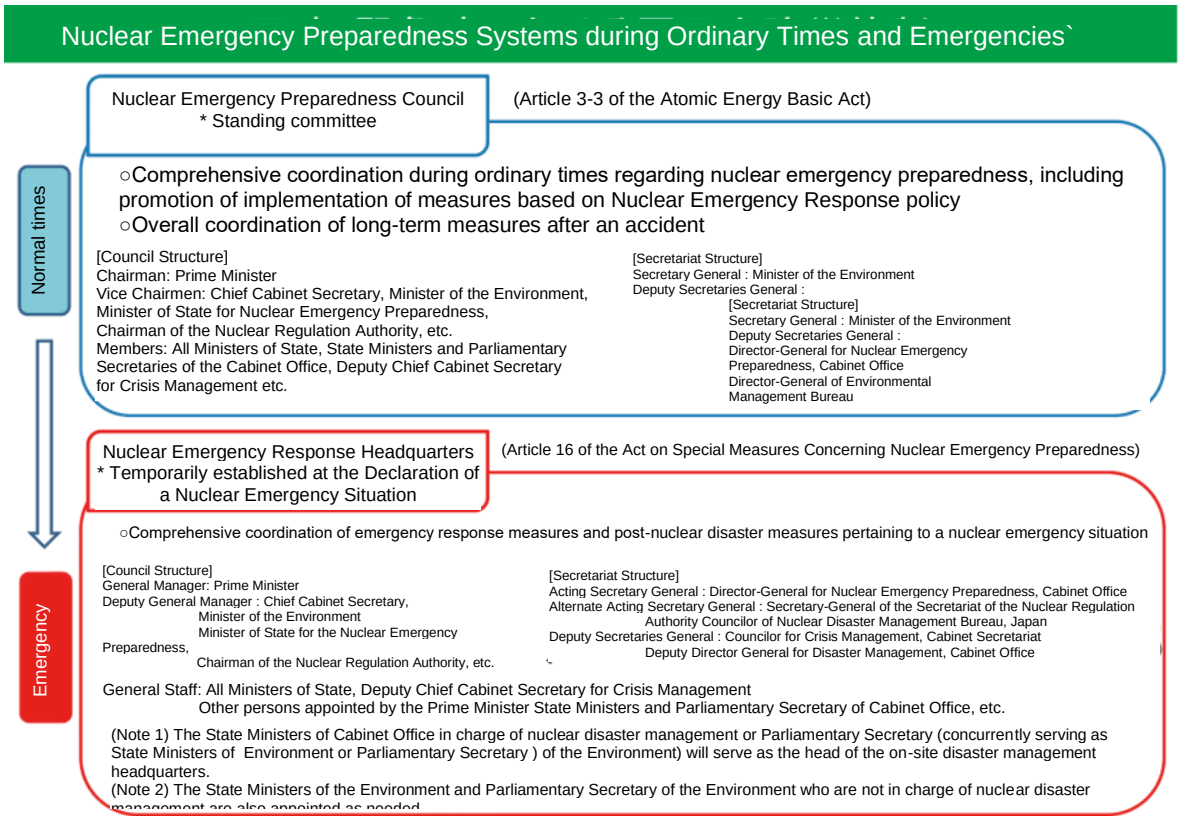
Chapter 2 Status of Countermeasures Against Nuclear Emergency

Section 1 Nuclear Emergency Preparedness Systems

1-1 Nuclear Emergency Preparedness System in Ordinary Times

As the potential damage in the event of a nuclear disaster is vast and widespread, the entire government must work in an integrated manner and promote nuclear disaster risk management measures. To this end, the “Nuclear Emergency Council” has been established in the Cabinet as an organ to promote nuclear disaster risk management throughout the government from ordinary times. The main role of the Council is to approve local emergency responses that have been confirmed to be concrete and rational in accordance with the NRA Guide for Emergency Preparedness and Response (NRA EPR Guide) by the Local Nuclear Disaster Management Council in each region, which is attended by the Cabinet Office, relevant ministries and agencies, and relevant local governments, etc. The Prime Minister is the chairman of the Nuclear Emergency Council, with vice-chairmen including the Chief Cabinet Secretary, the Minister of the Environment, the Minister of State for Nuclear Emergency Preparedness, and the Chairman of the Nuclear Regulation Authority, and members including all Ministers of State and the Deputy Chief Cabinet Secretary for Crisis Management, among others (Fig. 1-1-1).

Fig. 1-1-1 Nuclear emergency preparedness systems during ordinary times and emergencies.



Source: Cabinet Office data

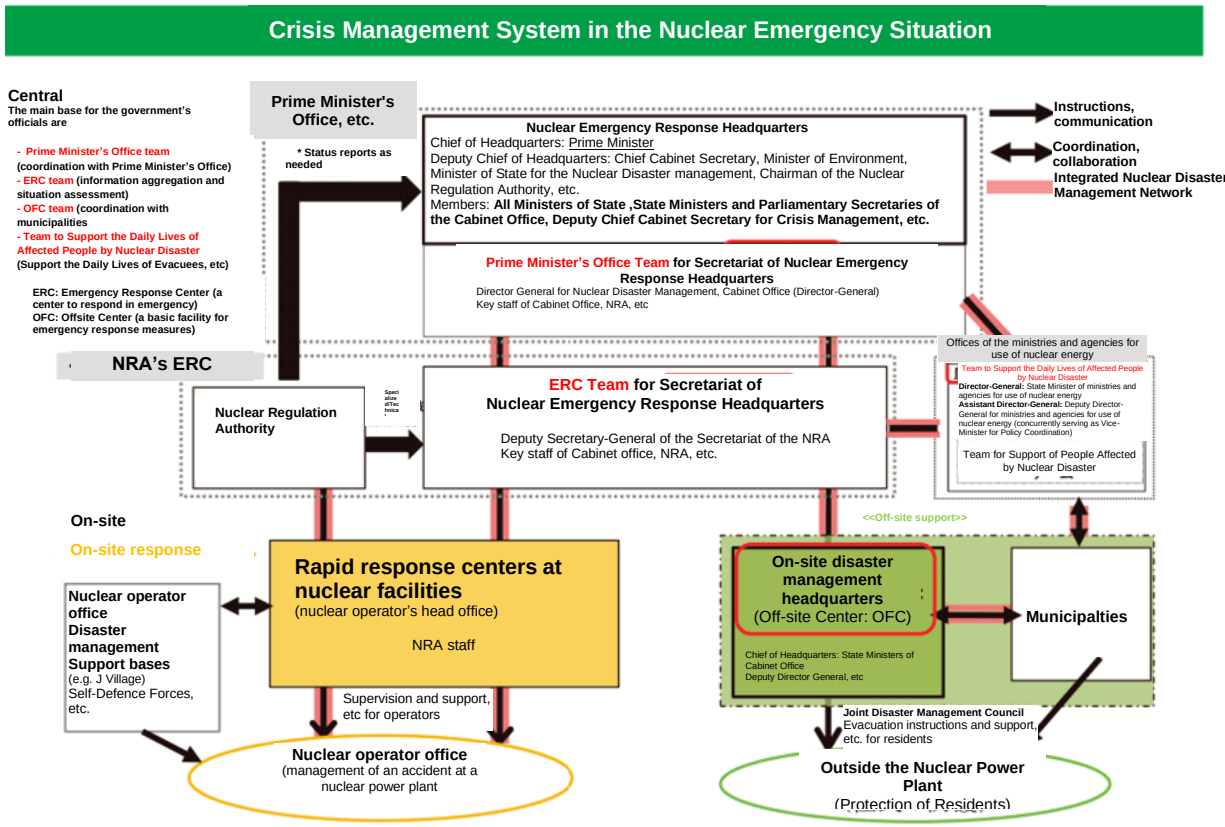
1-2 Nuclear Emergency Preparedness System in a Time of Emergency

The “Nuclear Emergency Response Headquarters” is established in the event of a nuclear emergency resulting from the release of a large amount of radioactive material, etc. The main role of the Headquarters is to assess the actual situation at the site of the nuclear emergency and the extent of the damage and to carry out comprehensive coordination among relevant national agencies and local governments, etc., in order to implement emergency response measures accurately and promptly, tailored to the situation. The head of the Headquarters is the Prime Minister, with the deputy heads including the Chief Cabinet Secretary, the Minister of the Environment, the Minister of State for Nuclear Emergency Preparedness, and the Chairman of the Nuclear Regulation Authority, and the members, including all Ministers of State and the Deputy Chief Cabinet Secretary for Crisis Management, among others (Fig. 1-1-1).

With regard to the division of roles within the Headquarters, the Nuclear Regulation Authority is primarily responsible for making decisions on technical and specialized matters, while the procurement of equipment necessary to support nuclear facilities and overall offsite support are handled by the relevant ministries and agencies under the direction of the head (the Prime Minister). The Director General for Nuclear Disaster Management, Cabinet Office, which was established on October 14, 2014, will be responsible for the Secretariat of the Headquarters.

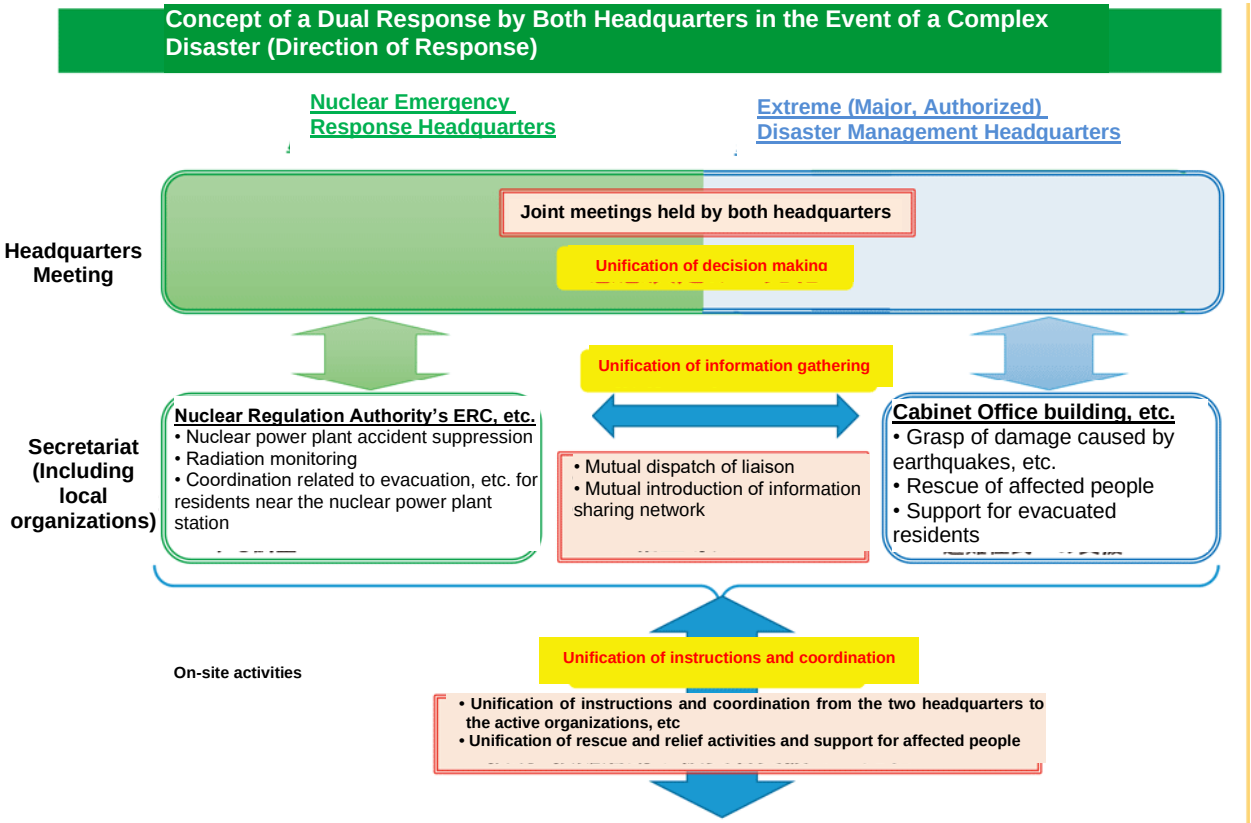
For situations of complex disasters, the Basic Disaster Management Plan was amended in July 2015 to establish a collaborative system to allow both the “Extreme Disaster Management Headquarters” and “Major Disaster Management Headquarters” (including the “Authorized Disaster Management Headquarters”, after the amendment of the Basic Act on Disaster Management in May 2021) dealing with natural disasters, and the “Nuclear Emergency Response Headquarters” dealing with nuclear disasters, to collect information, make decisions, give instructions and coordinate centrally, thereby strengthening the system for complex disaster situations (Fig. 1-2-1 and Fig. 1-2-2).

Fig. 1-2-1 Crisis management system during a nuclear emergency situation



Source: Cabinet Office data

Fig. 1-2-2 Response by both the Headquarters during situations of complex disasters (direction of response)



Source: Cabinet Office data

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

In light of the lessons learned from the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, it is extremely important to continue to work toward ensuring trust in nuclear regulatory administration. In order to fulfill its mission to protect the general public and the environment through rigorous and reliable regulations of nuclear activities, NRA is addressing various policy challenges under its guiding principles of "independent decision making", "effective actions", "open and transparent organization", "improvement and commitment", and "urgent response".

2-1 Efforts Related to Nuclear Emergency Measures

NRA is striving to improve the NRA EPR Guide to ensure that the criteria, etc., used in the formulation of disaster management plans are always the most appropriate, for example, by actively incorporating the latest international knowledge.

In consideration of the revision of the NRA Guide for Emergency Preparedness and Response on April 6, 2022, the secretariat of the NRA and the Cabinet Office jointly established the "Implementation Manual for Thyroid Exposure Dose Monitoring", compiling reference points for implementing thyroid exposure dose monitoring, and reported the manual at the 13th meeting of the Nuclear Regulation Authority in FY 2023 (May 31, 2023). In addition, a system was established with the help of six facilities, namely, Fukui University, which was newly designated as an Advanced Radiation Emergency Medical Support Center on April 1, 2023; National Institutes for Quantum Science and Technology, designated as Core Advanced Radiation Emergency Medical Support Center; Hirosaki University, designated as Advanced Radiation Emergency Medical Support Center and Comprehensive Support Centre for Nuclear Disaster Medicine; Fukushima Medical University; Hiroshima University; and Nagasaki University, thereby further strengthening the nuclear emergency medical system.

In addition, following discussions at the 59th FY 2023 NRA Commission Meeting (January 17, 2024) on the issue of indoor evacuation, based on the exchange of views with local authorities in the Onagawa region held on January 13, 2023, NRA decided to establish a study team and commence studies on the issues that the NRA Secretariat had compiled during the 64th FY 2023 NRA Commission Meeting (February 14, 2024) for effective indoor evacuation, which is one of the measures for protection from radiation. The establishment of the "Study Team on the Operation of Indoor Evacuation in the Event of a Nuclear Disaster" was approved at the 73rd FY 2023 NRA Commission Meeting (March 27, 2024).

2-2 Efforts for Emergency Response

NRA continues to strengthen the capabilities of personnel involved in nuclear emergency preparedness and identifies and improves issues in the nuclear emergency preparedness systems, etc., through the implementation of and participation in various drills in preparation for a nuclear disaster, etc. In FY 2023, in order to improve the emergency response capabilities, NRA implemented desk-based emergency response drills (twice), mainly with those in charge of decision-making during emergencies, such as the chairman of the Nuclear Regulation Authority, Commission members and senior officials of the Secretariat of NRA.

In addition, drills were conducted in conjunction with emergency drills by nuclear operators to pursue smoother information sharing between the Plant Team of the NRA's Emergency Response Center (ERC) and the nuclear operators' rapid response center at nuclear facilities. Two drills were conducted to confirm the offsite response procedures based on the scenarios of emergency drills conducted by operators and the course of action on the day.

In addition, the evaluation results of the emergency drills were reported at the Debriefing Session of Emergency Drills by Nuclear Operators, held on July 26, 2023. Before conducting the FY 2023 drills for commercial nuclear power reactor facilities, a decision was made to reflect the measures promoting more flexible and voluntary drills, such as drills based on diverse scenarios and utilization of results of peer reviews among operators for evaluation, and improving the effectiveness of drills in the drill implementation policy for FY 2023. In the future, NRA will continue to identify issues and make improvements.

Nuclear fuel facilities and other such facilities have multiple plants located in the same region. In the event of a large-scale natural disaster, it is assumed that multiple plants in the same region will experience the disaster at the same time. Therefore, in the FY 2023 emergency drill by nuclear operators, drills simulating a situation where a large-scale natural disaster simultaneously strikes multiple plants in the same region were conducted for the Rokkasho region and the Tokai and Oarai regions. In the future, NRA will continue to identify issues and make improvements.

2-3 Efforts Related to Emergency Monitoring

NRA has established "emergency monitoring centers" in all regions where nuclear facilities are located to conduct effective emergency monitoring based on the NRA EPR Guide. The emergency monitoring centers in each region are maintained and managed with the necessary equipment, etc., to ensure that they function reliably in the event of a nuclear disaster. Furthermore, the emergency monitoring system is being enhanced and strengthened by assigning staff in charge of radiation monitoring to the NRA Regional Office. NRA publishes monitoring information on a routine basis using the "Radiation Monitoring Information Sharing and Publication System" aimed at aggregating results of emergency monitoring in the event of a nuclear emergency, sharing them among the parties concerned, and disclosing relevant information promptly.

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, while the "Act on the Regulation of Radioisotopes, etc." (Act No. 167 of 1957) requires licensed or registered users to report any accidents or malfunctions, etc., to NRA. In FY 2023, four reports were received from nuclear operators based on the "Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors", and six reports were received from licensed or registered users 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, based on the “Basic Act on Disaster Management”, are required to formulate local disaster management plans (Nuclear Disaster Risk Management Part) (hereinafter referred to as “Local Disaster Management Plans” in this chapter), which specify the basic responses to be implemented by prefectures and municipalities in dealing with nuclear disasters.

Based on the Basic Disaster Management Plan and the NRA EPR Guide, relevant local governments are forming local disaster management plans within an approximate 30 km radius of nuclear power plants (Fig. 3-1-1). It is important to make the Local Disaster Management Plans more concrete and substantial, and the national government actively supports local governments in implementing more concrete evacuation plans and measures for persons requiring special care when it is difficult for local governments to work out the measures on their own.

Fig. 3-1-1 Status of Local Disaster Management Plans and evacuation plans (as of March 31, 2024)

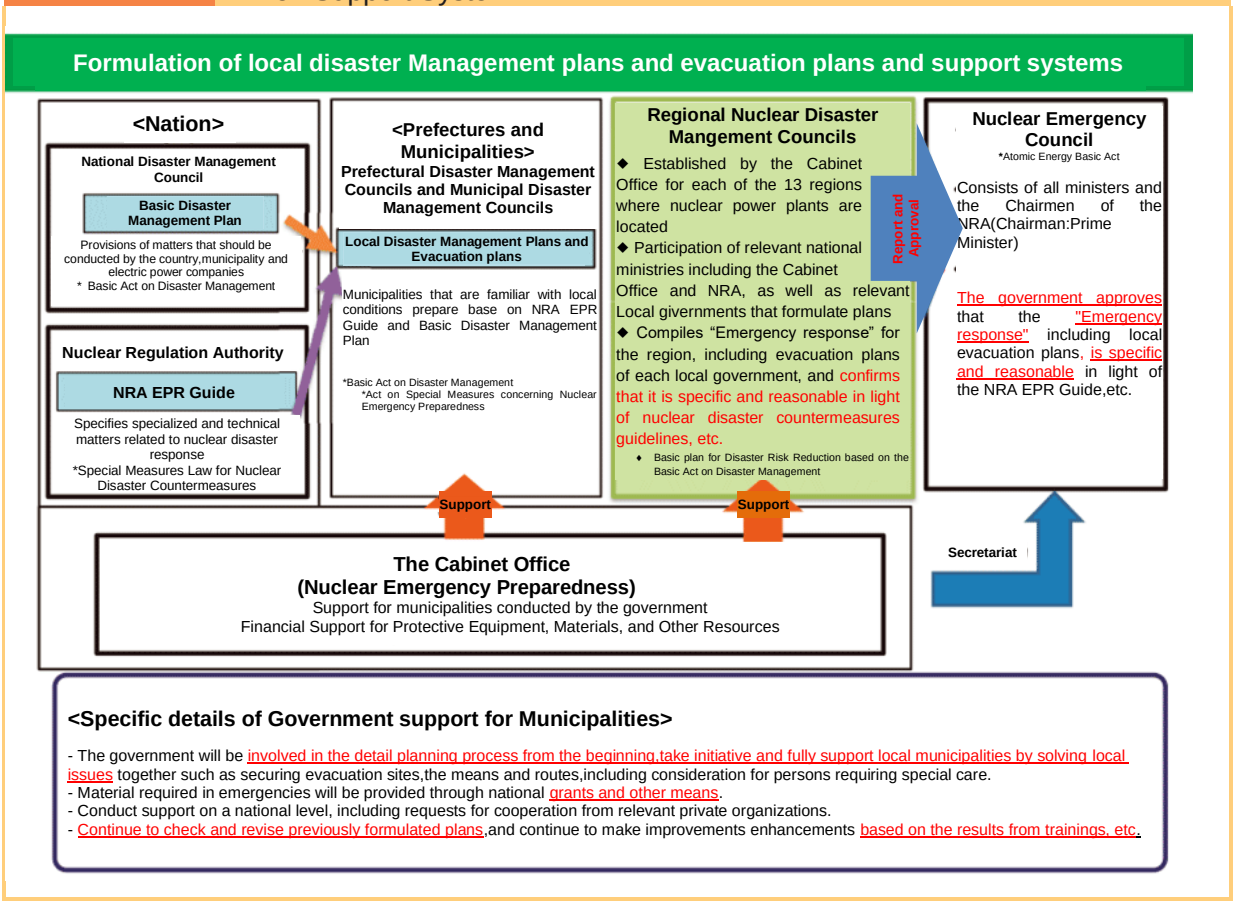
	Target municipalities	Number of disaster management plans formulated	Number of plans evacuation formulated
Tomari Area	13	13	13
Higashidori Area	5	5	5
Onagawa area	7	7	7
Kashiawazaki-Kariwa Area	13	13	12
Kashiwazaki Kariwa Area	9	9	9
Tokai Dai-ni Area	14	14	6
Hamaoka Area	11	11	11
Shiga Area	9	9	9
Fukui Area	23	23	23
Shimane Area	6	6	6
Ikata Area	8	8	8
Genkai Area	8	8	8
Kawauchi area	9	9	9
Total 13 Areas	135	135	126

Source: Cabinet Office data

The entire government has decided to promote the establishment and enhancement of the nuclear emergency preparedness system in an integrated manner, including the securing of evacuation routes through road construction and other measures.

In March 2015, the Cabinet Office established “Local Nuclear Disaster Management Councils” (hereinafter referred to as the “Councils”) as working teams to resolve issues in each region where nuclear power plants are located in order to support the concretization and enhancement of local disaster management plans and evacuation plans prepared by prefectures and municipalities, based on the “Future Measures on the Completion of Local Disaster Management Plans” (decided by the Nuclear Emergency Council in September 2013), and set up working groups under the Councils. Each local working group discusses support for the formulation of evacuation plans, wide-area coordination, and support for the national government’s operational organization, and the national government and relevant local governments work together to concretize 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 Plans and Their Support System

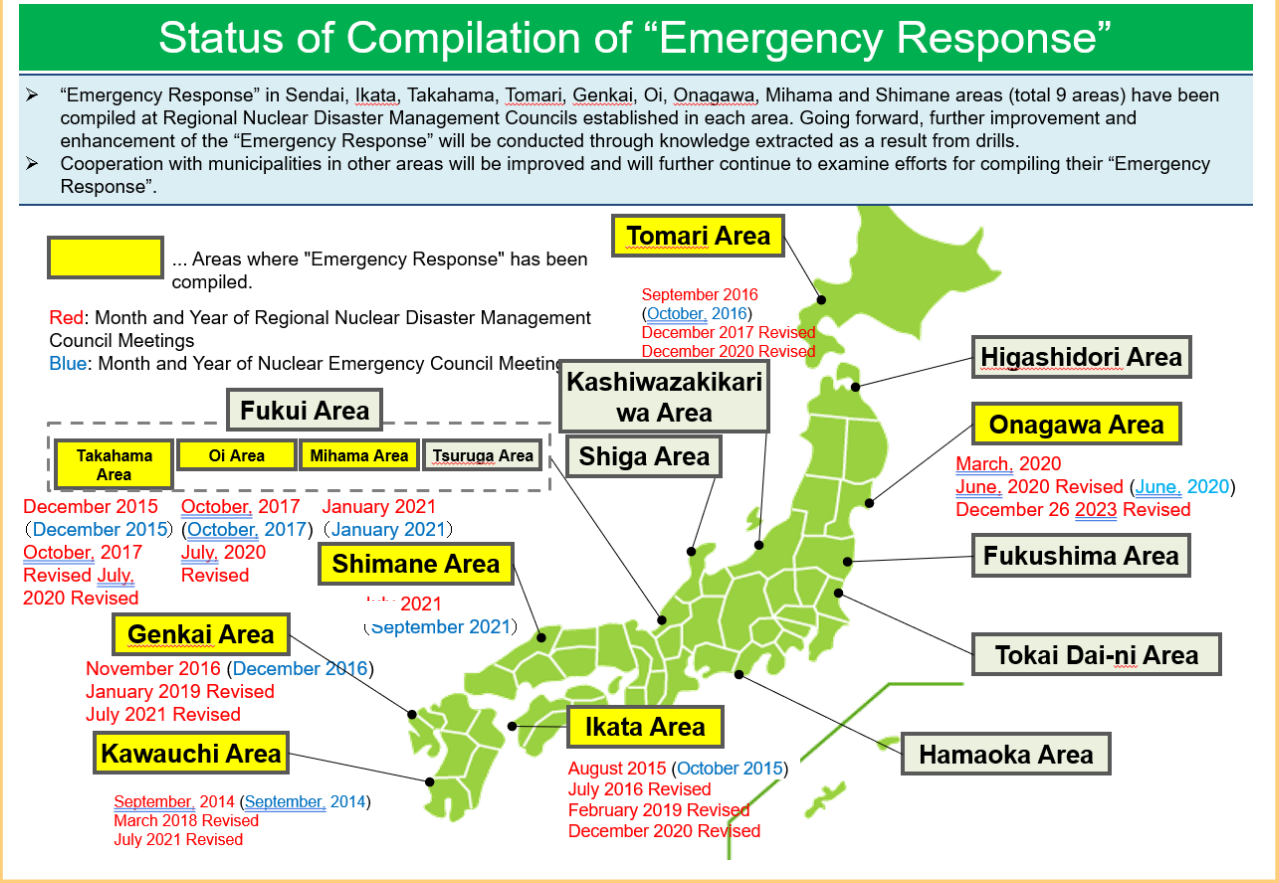


Source: Cabinet Office data

With regard to the concretization and enhancement of nuclear emergency preparedness systems, the Council established by the Cabinet Office for each region compiles the “emergency response” for each region, including the Local Disaster Management Plans and evacuation plans of the local governments concerned. The relevant ministries and agencies, local governments, and agencies participating in the Council confirm that the emergency response is specific and reasonable in light of the NRA EPR Guide. In addition, the emergency response plans confirmed by the Councils are reported to and approved by the Nuclear Emergency Council, which is chaired by the Prime Minister and consists of all ministers and the Chairman of NRA. In addition to confirming emergency responses and supporting the concretization and enhancement of each region’s nuclear disaster prevention system based on these plans (Plan), the PDCA cycle has been introduced, in which nuclear disaster prevention drills based on these plans are carried out (Do), points for reflection are extracted from the results of the nuclear emergency response exercise (Check), and then each region’s plans are improved based on these points of reflection (Action). The Cabinet Office and relevant local governments are continually working to enhance and strengthen the regional nuclear emergency preparedness system and improve its effectiveness.

Regarding the emergency response of each region, as of the end of FY 2023, the emergency response plans for 9 out of the 16 target regions have been compiled and 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 established in Tsuruga, Mihama, Ohi, and Takahama regions to specifically examine and address issues that need to be resolved in each region.

For the Onagawa area, the “Emergency Response for the Onagawa Area” was confirmed at the Onagawa Local Nuclear Disaster Management Council (1st meeting) in March 2020. Additionally, considering the basic approach to protective measures during an epidemic of infectious diseases due to the spread of COVID-19, the “Emergency Response for the Onagawa Area” was revised at the Onagawa Local Nuclear Disaster Management Council (2nd meeting) in June 2020.

The contents confirmed at the 1st meeting and revised at the 2nd meeting of the Onagawa Local Nuclear Disaster Management Council were reported and approved at the Nuclear Emergency Council in June 2020.

Subsequently, to enhance the effectiveness of the emergency response, a comprehensive nuclear disaster prevention drill led by the national government was conducted in February 2022 for the Onagawa Nuclear Power Plant. In December 2023, the Onagawa Nuclear Disaster Response Council (3rd meeting) revised the “Emergency Response for the Onagawa Region” to further specify and enhance “emergency responses” based on the lessons learned from the “Report on the Outcome of the Comprehensive Nuclear Emergency Response Exercise” compiled in July 2022, and the nuclear emergency response exercises held in Miyagi Prefecture in October 2022 and January 2023.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kyougikai/02_onagawa.html)

The main points of the revision of the “Emergency Response in the Onagawa Area”

(1) Information dissemination to evacuate residents safely and smoothly
(2) Diversification of maritime evacuation routes
(3) Diversification of emergency transportation routes for national personnel, equipment, and materials
(4) Inspection system to ensure the safe and smooth evacuation of residents

Additionally, amendments were made regarding the strengthening of the transportation system during nuclear disasters, the review of the temporary assembly points due to facility consolidation, changes to evacuation routes based on the progress of recovery and reconstruction projects, and the clarification of responses related to Unit 1 of the Onagawa Nuclear Power Plant, which is subject to cooling notifications.

At the Onagawa Local Nuclear Disaster Management Council (third meeting), Miyagi Prefecture expressed its efforts to further promote residents’ understanding of nuclear disaster prevention by improving the nuclear disaster response skills of personnel in the 2023 Miyagi Prefecture nuclear emergency response exercises and further enhancing and strengthening the nuclear emergency preparedness system. The government stated that, regarding emergency response in the Onagawa region, it will continue to conduct drills through the Onagawa Local Nuclear Disaster Management Council, incorporate the results, and work together with local authorities as a united effort to concertize and enhance the emergency response system further. As a result, it was confirmed that this amendment aims to concertize and enhance the “Emergency Response” system further based on the lessons learned from the nuclear emergency response exercises conducted in FY 2022 and 2023.

3-2 Other Support and Measures for Related Prefectures

(1) Stockpiling and Distribution of Stable Iodine Tablets

Stable iodine tablets, 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). The Cabinet Office has been stockpiling stable iodine tablets for residents outside the UPZ.

With regard to advanced distribution, considering the burden of receiving stable iodine tablets through emergency distribution, local governments are given support to operate the advanced distribution appropriately for the residents in the UPZ, where advanced distribution is expected to facilitate evacuation. Additionally, the temporary and exceptional promotion of remotely conducted explanatory sessions by physicians, in line with the NRA EPR Guide and the “Distribution and Administration of Stable Iodine Agents”, is being implemented.

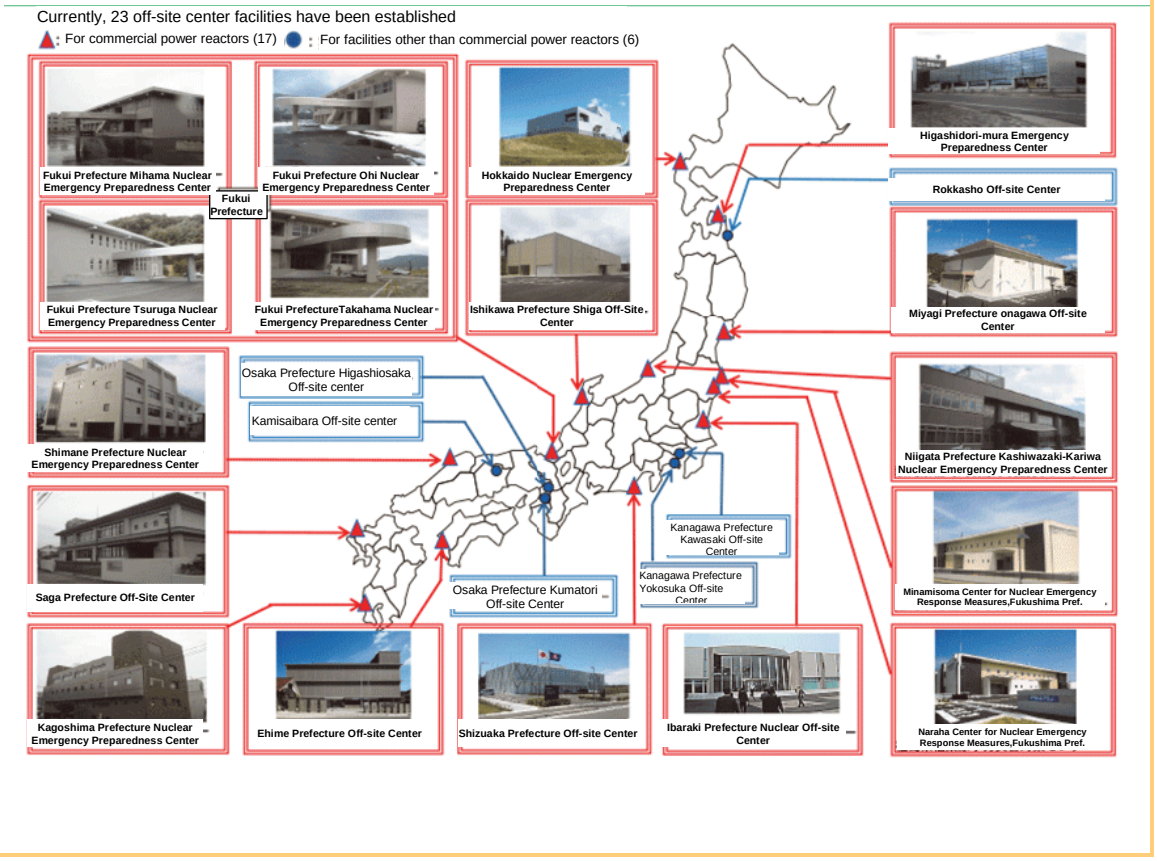
(2) Designation of an Offsite Center

According to Article 12, paragraph 1 (Act No. 156 of 1999) of the “Act on Special Measures Concerning Nuclear Emergency Preparedness,” the Prime Minister is required to designate an emergency response center (offsite center) for each nuclear power plant.

The requirement for offsite centers is set forth by a “Cabinet Office Ordinance on Offsite Centers Pursuant to the Act on Special Measures Concerning Nuclear Emergency Preparedness”. However, based on the lessons learned from the accident at the Tokyo Electric Power Company’s Fukushima Daiichi Nuclear Power Station, the location of offsite centers for commercial power reactors was revised to be within a 5 to 30 km radius (within the UPZ) in September 2012.

Subsequently, in March 2017, the Nuclear Regulation Authority (NRA) revised the NRA EPR Guide and defined the scope of priority areas for nuclear emergency preparedness for nuclear fuel facilities. In August 2019, the requirements to be met by offsite centers for nuclear fuel facilities were revised to be essentially the same as those for power generation reactor facilities. Currently, 23 Offsite Centers have been established (FIG. 3-2-1).

Fig. 3-2-1 Nationwide Offsite Centers



Source: Cabinet Office data

(3) Support for Facilitating Evacuation

Facilitating evacuation during a nuclear disaster, including securing evacuation routes through road maintenance and improvement, is important for ensuring the safety and security of residents. The relevant ministries and agencies and the government as a whole are committed to collaborating 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 exercises on a regular basis based on the “Basic Act on Disaster Management” and other relevant laws. Local governments are required to conduct nuclear emergency response exercises regularly 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 the 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 nuclear emergency response exercises, 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 Exercises”, which provides basic guidelines for all aspects of drills, from planning and 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”.

(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 2023

Region	Execrise Name	Date
Tomari	Hokkaido Nuclear Disaster Management Drill	October 25, 2023, and February 14, 2024
Higashidori	Aomori Prefecture Nuclear Disaster Management Drill	November 7, 2023, November 17, 2023, December 20, 2023
Onagawa	Miyagi Prefecture Nuclear Disaster Management Drill	January 20, 2024
Fukushima	Fukushima Prefecture Nuclear Disaster Management Drill	November 16, 2023, and November 18, 2023
Kashiwazaki-Kariwa	Niigata Prefecture Nuclear Disaster Management Drill	October 26, 2023, October 27, 2023, October 28, 2023, October 29, 2023, October 31, 2023, November 1, 2023, November 8, 2023, November 9, 2023and February 12, 2024 (* Execrise from October 27 to 29, 2023, were conducted in coordination with the 2023 Comprehensive Nuclear Disaster Management Drill by the national government and others.)
Shiga	Ishikawa Prefecture Nuclear Disaster Management Drill	November 23, 2023
	Toyama Prefecture Nuclear Disaster Management Drill	November 23, 2023
Fukui	Fukui Prefecture Comprehensive Nuclear Disaster Management Drill	October 20, 2023, October 21, 2023
	Shiga Prefecture Nuclear Disaster Management Drill	October 20, 2023, November 7, 2023
	Gifu Prefecture Nuclear Disaster Management Drill	November 25, 2023
	Kyoto Prefecture Comprehensive Nuclear Disaster Management Drill	October 20, 2023, November 11, 2023, November 19, 2023
Shimane	Shimane Prefecture Nuclear Disaster Management Drill	September 30, 2023, October 19, 2023, November 5, 2023, November 7, 2023, November 8, 2023, November 9, 2023
	Tottori Prefecture Nuclear Disaster Management Drill	August 23, 2023, October 19, 2023, November 4, 2023, November 5, 2023, November 18, 2023, November 24, 2023, November 25, 2023
Ikata	Ehime Prefecture Nuclear Disaster Management Drill	October 12, 2023, October 21, 2023
	Yamaguchi Prefecture Nuclear Disaster Management Drill	October 12, 2023
Genkai	Saga Prefecture Nuclear Disaster Management Drill	October 14, 2023
	Nagasaki Prefecture Nuclear Disaster Management Drill	October 14, 2023, February 17, 2024
	Fukuoka Prefecture Nuclear Disaster Management Drill	October 14, 2023
Kawauchi	Kagoshima Prefecture Nuclear Disaster Management Drill	February 10, 2024

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. The aim was to help 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 on protective measures necessary for the 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 risk management 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, the NRA EPR Guide, and lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station. In FY 2023, 40 sessions were held. The main content of the training is as follows.

- Overview of laws and regulations related to nuclear emergency preparedness (classroom lecture).
- Basic concept of radiation protection based on the NRA EPR Guide (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 emergencies and to verify and improve local disaster management plans and evacuation plans formulated by local governments. In FY 2023, 13 sessions were held. The main content of the training is 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

To develop human resources who can play a central role in responding to a nuclear disaster, conduct a training course for core human resources development for personnel who play a central role during nuclear disasters in the national government and local governments, with the aim of acquiring necessary knowledge and improving their abilities. In FY 2022, 8 sessions were held for national personnel, 4 sessions for prefectural personnel, and 2 sessions for municipal personnel. The main content of the training is as follows.

- Emergencies in power reactors (classroom lecture)
- Nuclear emergencies and health effects (classroom lecture)
- Protective measures in nuclear emergencies (classroom lecture)
- Response in accordance with the progress of a nuclear emergency (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 2023, 4 sessions were held.

The main content of the training is as follows.

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

b. Evacuation by bus, etc.

Practical human resources training is conducted for local government officials in charge of bus evacuation plans with the aim of developing human resources who can prepare specific plans and manuals for bus evacuation. In FY 2023, 3 sessions were held. The main content of the training is 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 information regarding protective measures

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 assess disaster situations and share information among related parties, which is necessary for the concrete implementation of protective measures in each situation. In FY 2023, 7 sessions were held. The main content of the training is 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, with support from the Cabinet Office as needed.

1. Training for disaster prevention workers

This training program for disaster prevention workers was conducted for private business operators who will be involved in resident protection activities during nuclear disasters. It aimed to provide them with the basic knowledge required for radiation protection, the basic principles of resident protection, and the flow of protection activities for residents.

2. Basic training in 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.

Lecture classroom (Training for nuclear emergency response personnel)

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

Scenario-based exercises (Core Human Resource Development Training)

Practical training (Operational Personnel 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 offsite nuclear emergency preparedness, and it is necessary to incorporate their advanced knowledge in order to improve the level of nuclear emergency preparedness in Japan.

Cooperation has been strengthened with the departments in charge of nuclear emergency preparedness in various countries to achieve this goal. Opinions are exchanged regularly, and mutual invitations to drills and other events promote the sharing of international knowledge and experience on nuclear emergency response exercises.

(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 nuclear emergency response exercises. In FY 2022, an online technical workshop was held to exchange views on nuclear emergency response exercises and evacuation plans.

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 the French Ministry of the Interior, the two countries have deepened cooperation for their nuclear emergency response exercises through mutual invitations to drills and regular meetings of the “Cooperation Committee for Planning and Crisis Management in Case of Nuclear Accident”, launched in 2019. In FY 2023, we inspected France’s nuclear emergency response exercises and exchanged opinions on training plans and emergency systems.

3) Invitation to observe comprehensive nuclear disaster prevention drills

Regarding the Nuclear Energy Disaster Prevention Drill, the U.S., France, and other foreign countries and international organizations mentioned above are invited to observe the drill. The comprehensive nuclear disaster prevention drill, held from October 27 to 29, 2023, at the Kashiwazaki Kariwa Nuclear Power Plant of Tokyo Electric Power Company Holdings, Inc., welcomed 20 observers from 11 organizations, including nuclear disaster prevention organizations and embassies in Tokyo from four countries. The observers stayed for 3 days, including a preliminary briefing session. After the drill, participants exchanged opinions with observers from overseas nuclear emergency response exercises on the comprehensive nuclear disaster prevention drills and the evacuation of residents, including those from overseas.

(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 Cooperation and Development (OECD/NEA). Regarding the IAEA, we regularly attend the Emergency Preparedness and Response Standards Committee (EPReSC) to cooperate in preparing standards for offsite nuclear disaster prevention and to collect information. 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 2023 Nuclear Emergency Disaster Prevention Drill

4-1 Implementation Overview

(1) Definition and Purpose

The purpose of the Nuclear Emergency Disaster Prevention Drill 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 2023, the Nuclear Emergency Disaster Prevention Drill 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.
- Review of local disaster management plans and consideration of emergency response measures.

Collection of lessons learned based on drill results and consideration of emergency response measures.

- Promoting the skills of personnel involved in nuclear disaster countermeasures and promoting public understanding of nuclear disaster risk management.

(2) Implementation Period and Subjected Power Plant

Exercises were conducted at the Kashiwazaki Kariwa Power Plant from October 27 to 29, 2023 (Fig. 4-1-1).

Fig. 4-1-1 Kashiwazaki Kariwa nuclear emergency response priority area

Source: Compiled by the Cabinet Office based on the Geospatial Information Authority of Japan website "Geospatial Information Authority Maps (Digital Land Web)" (https://cyberjapandata.gsi.go.jp)

(3) Participating Organizations

- Government agencies: Cabinet Secretariat, the Cabinet Office, Nuclear Regulation Authority, and other relevant ministries and agencies
- Local governments: Niigata Prefecture, Kashiwazaki City, Kariwa Village, Nagaoka City, Ojiya City, Tokamachi City, Mitsuke City, Tsubame City, Joetsu City, Izumozaki Town, and others.
- Operator: Tokyo Electric Power Company Holdings, Inc.
- Related organizations: National Institutes for Quantum Science and Technology, Japan Atomic Energy Agency, etc.

(4) Assumed Accident Scenario

An earthquake occurs with its epicenter in the offshore area of Niigata Prefecture. As a result, Unit 7 of the Kashiwazaki Kariwa Power Plant, which is in operation, will be shut down in an emergency. Furthermore, equipment failures occur in succession, resulting in a loss of the reactor water injection function, leading to a facility site area emergency and a state of full 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 to establish their respective initial response systems, sharing information with relevant organizations using videoconferencing systems, etc. Additionally, the State Minister of the Cabinet Office, government officials, and experts were dispatched by relevant emergency transportation related ministries or private transport operators to emergency preparedness base facilities (Kashiwazaki Kariwa Nuclear Disaster Prevention Center, Niigata Prefecture) and rapid response center at nuclear facilities (the head office of Tokyo Electric Power Company Holdings).

Activity status reported by personnel 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, the NRA's Emergency Response Center, the Kashiwazaki Kariwa Nuclear Disaster Prevention Center, the offices of ministries utilizing nuclear power, the Niigata Prefectural Office, and other key locations. In preparation for a complex disaster involving both natural and nuclear elements, a central Nuclear Emergency Response Headquarters meeting was convened to address issues related to nuclear emergencies. Information sharing, decision-making, and the coordination of directives and measures, including those involving local organizations, were carried out in a unified manner. At the same time, decisions were made regarding the implementation of protective measures, and instructions based on these decisions were issued to the relevant local governments.

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 and sheltering indoors

In response to a site area emergency and a state of general emergency, evacuation of residents in the Precautionary Action Zone was conducted with support from private transportation. Also, residents in the Urgent Protective Action Planning Zone were evacuated indoors, and efforts were made to promote understanding of the significance of indoor evacuation and other related matters.

Emergency monitoring was conducted in accordance with the emergency monitoring implementation plan. Additionally, aerial monitoring was conducted using uncrewed aerial vehicles.

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 to shelters and contamination screening of the residents in some areas within the UPZ.

Resident evacuation drill

Monitoring by uncrewed helicopter

4-3 Efforts After the Drill

Based on the lessons learned from this drill, we will strive to continuously improve the nuclear emergency preparedness system by enhancing the content of future drills and improving various plans and manuals. These lessons will also be utilized in discussions within the Local Nuclear Disaster Management Council to formulate “Emergency Response in the Kashiwazaki Kariwa Region.”