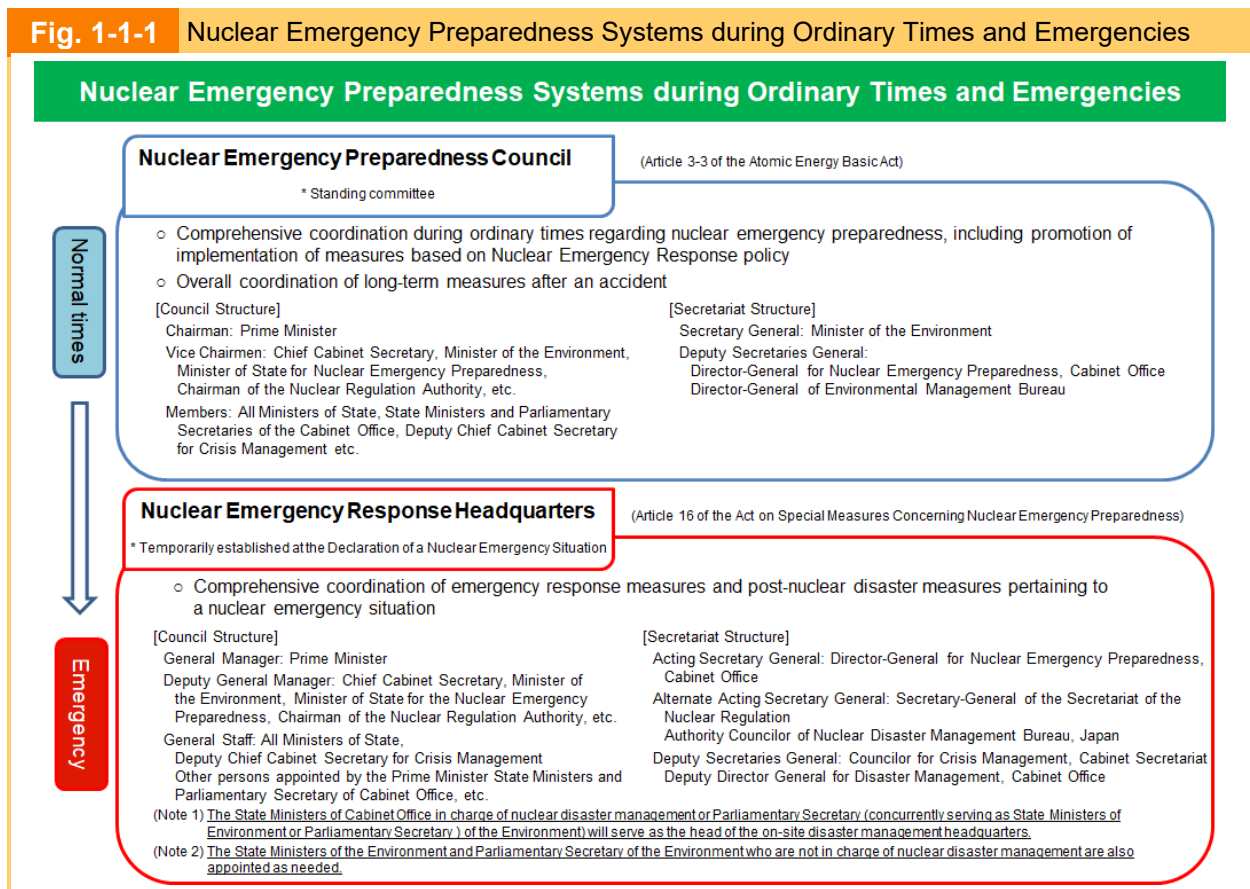


Chapter 2 Status of Countermeasures Against Nuclear Emergency

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 Preparedness 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 (hereinafter referred to as the “Councils” in this chapter), 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).



Source: Cabinet Office data

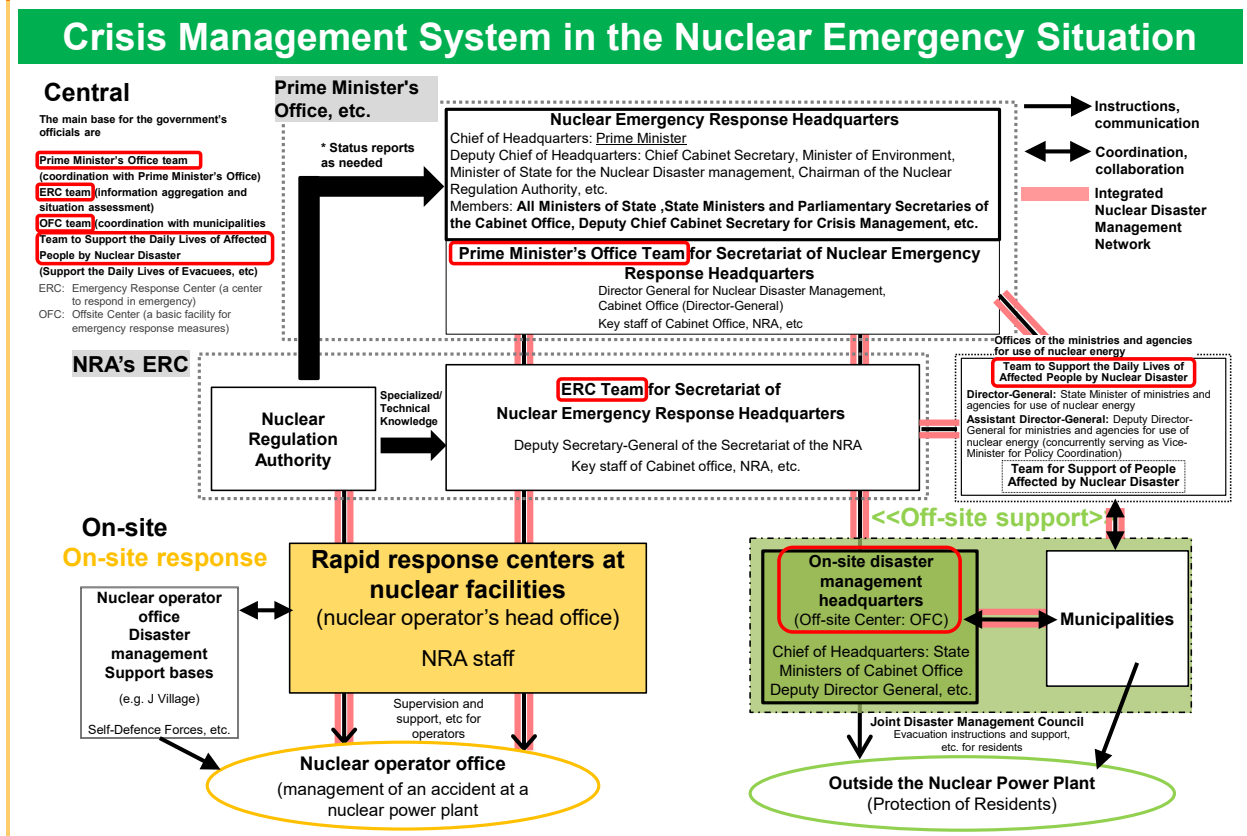
1-2 Nuclear Emergency Preparedness System in a Time of Emergency

The “Nuclear Emergency Response Headquarters” is established in the unlikely 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.

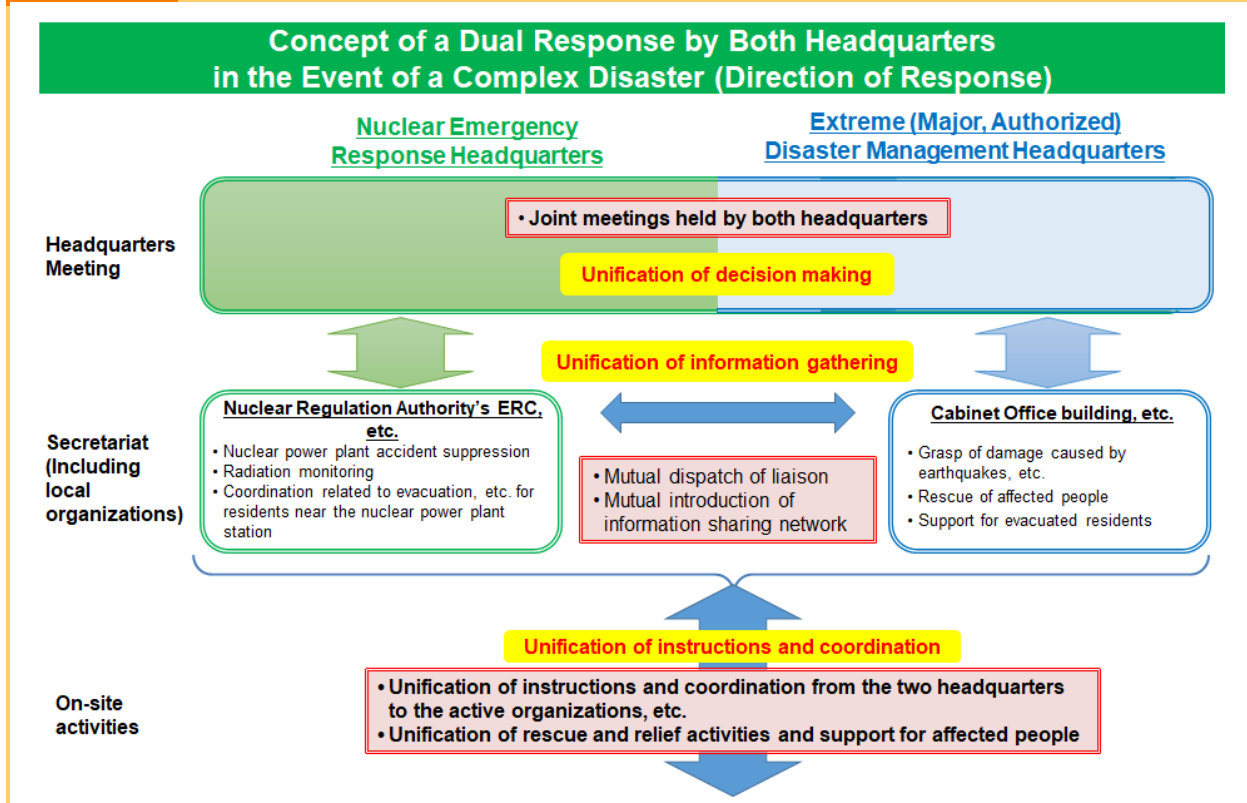
For situations of complex disasters, the Basic Disaster Management Plan was amended in July 2015 to establish a collaborative system to allow both the “Extreme Disaster Management Headquarters” and “Major Disaster Management Headquarters” (including the “Authorized Disaster Management Headquarters”, 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 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)

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.

To establish a system capable of coordinating the nationwide dispatch of personnel during a nuclear disaster, the NRA Guide for Emergency Preparedness and Response (NRA EPR Guide) was revised to introduce a new framework allowing the national government to designate a nuclear disaster medical cooperation organization with a nationwide operational structure. Based on this framework, efforts have been made to secure necessary personnel during nuclear disasters, including the designation of the Japan Association of Radiological Technologists (a public interest incorporated association) as a nuclear disaster medical cooperation organization. In addition, following discussions with local governments held in the Onagawa area in January 2024, the Study Team on the Operation of Indoor Evacuation in the Event of a Nuclear Disaster was established in March of the same year to examine how to operate indoor evacuation most effectively. The team met nine times to discuss the scope and duration of indoor evacuation, as well as considerations for lifting the order or transitioning to full evacuation.

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 FY2024, 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.

During the nuclear operator emergency drills, the NRA's Emergency Response Center (ERC) worked to improve information sharing between the ERC's plant team and the operators' rapid response center at nuclear facilities. In drills involving other functional teams of the ERC, response procedures on the off-site side were reviewed based on the scenario and flow of the exercise.

The NRA has also been holding Debriefing Sessions of Emergency Drills by Nuclear Operators

since FY2013 to evaluate nuclear operator drills conducted under the Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156 of 1999).

At the debriefing session held on July 11, 2024, the results of the evaluation of FY2023 nuclear operator emergency drills were reported. Since FY2021, the Secretariat of the (Nuclear Regulation Authority) NRA and nuclear operators have been exchanging views on how to improve training for emergency response capabilities and on the role of regulatory involvement for commercial nuclear power reactor facilities. Measures to encourage more flexible and voluntary training and to enhance training effectiveness were reflected in the FY2024 training policy, and the year's training was conducted based on that policy.

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 FY2024, as in FY2023, emergency drills by nuclear operators were conducted simulating a situation where a large-scale natural disaster simultaneously strikes multiple plants.

In the future, NRA will continue to identify issues and make improvements based on the results of the 2024 training.

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. In addition, the Radiation Monitoring Information Sharing and Publication System will begin automatic data linkage with the Comprehensive Disaster Management Information System of the “Emergency Disaster Response Headquarters” or the “Extreme Disaster Management Headquarters” (including the “Authorized Disaster Management Headquarters” since the revision of the Basic Act on Disaster Management in May 2021) during FY2024.

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 to report any accidents or malfunctions, etc., to the NRA. The “Act on the Regulation of Radioisotopes, etc.” (Act No. 167 of 1957) likewise requires licensed or registered users to report any accidents or malfunctions, etc., to NRA. In FY2024, one report was 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

Among the local governments, relevant prefectures, and municipalities concerned, 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 in dealing with nuclear disasters.

Based on the Basic Disaster Management Plan and the NRA EPR Guide, local governments within an approximate 30 km radius of nuclear power plants have established local disaster management plans (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

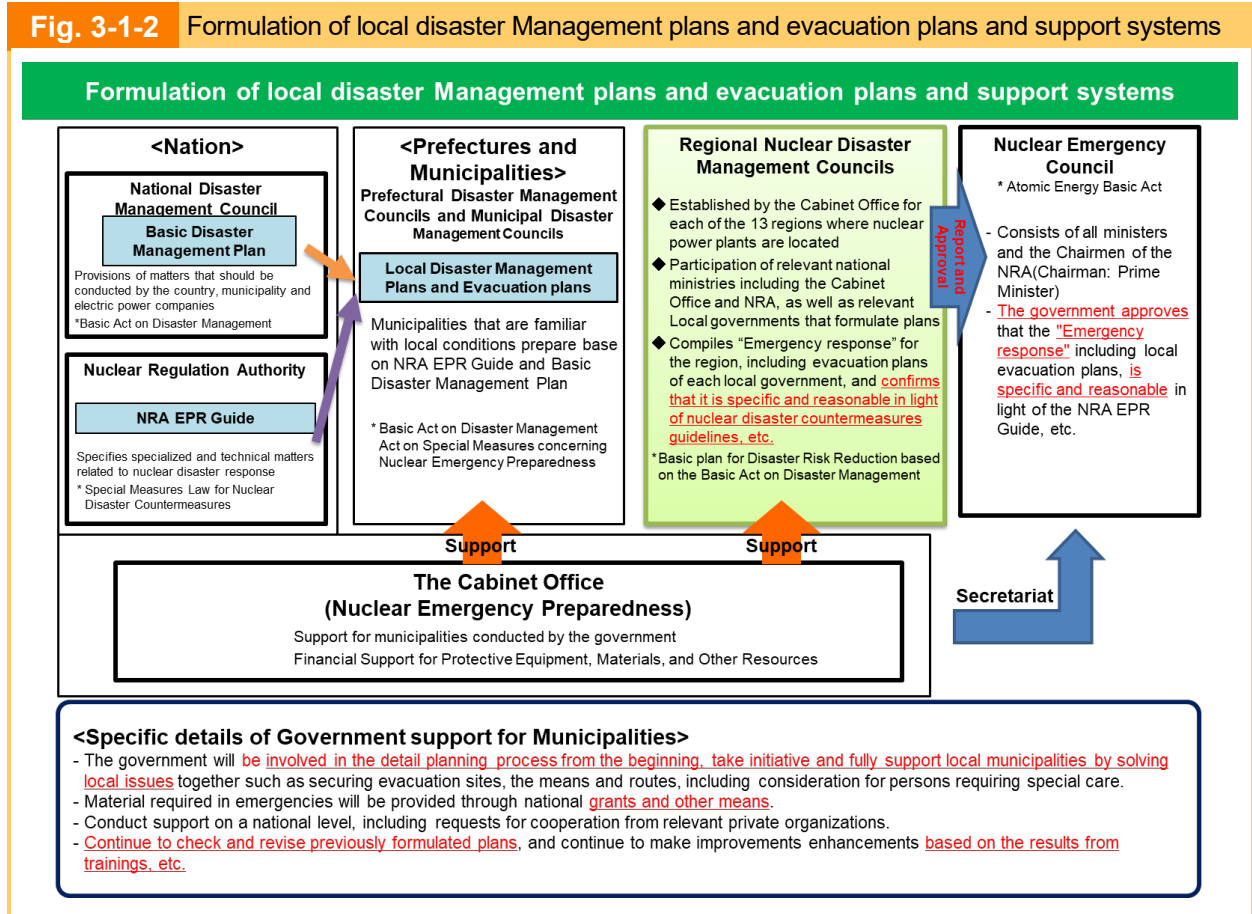
Status of Local Disaster Management Plans and Evacuation Plans			
(as of March 31, 2025)			
	Target municipalities	Number of disaster management plans formulated	Number of plans evacuation formulated
Tomari Area	13	13	13
Higashidori Area	5	5	5
Onagawa area	7	7	7
Fukushima Area	13	13	13
Kashiwazaki Kariwa Area	9	9	9
Tokai Dai-ni Area	14	14	8
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	129

Source: Cabinet Office data

The 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 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).

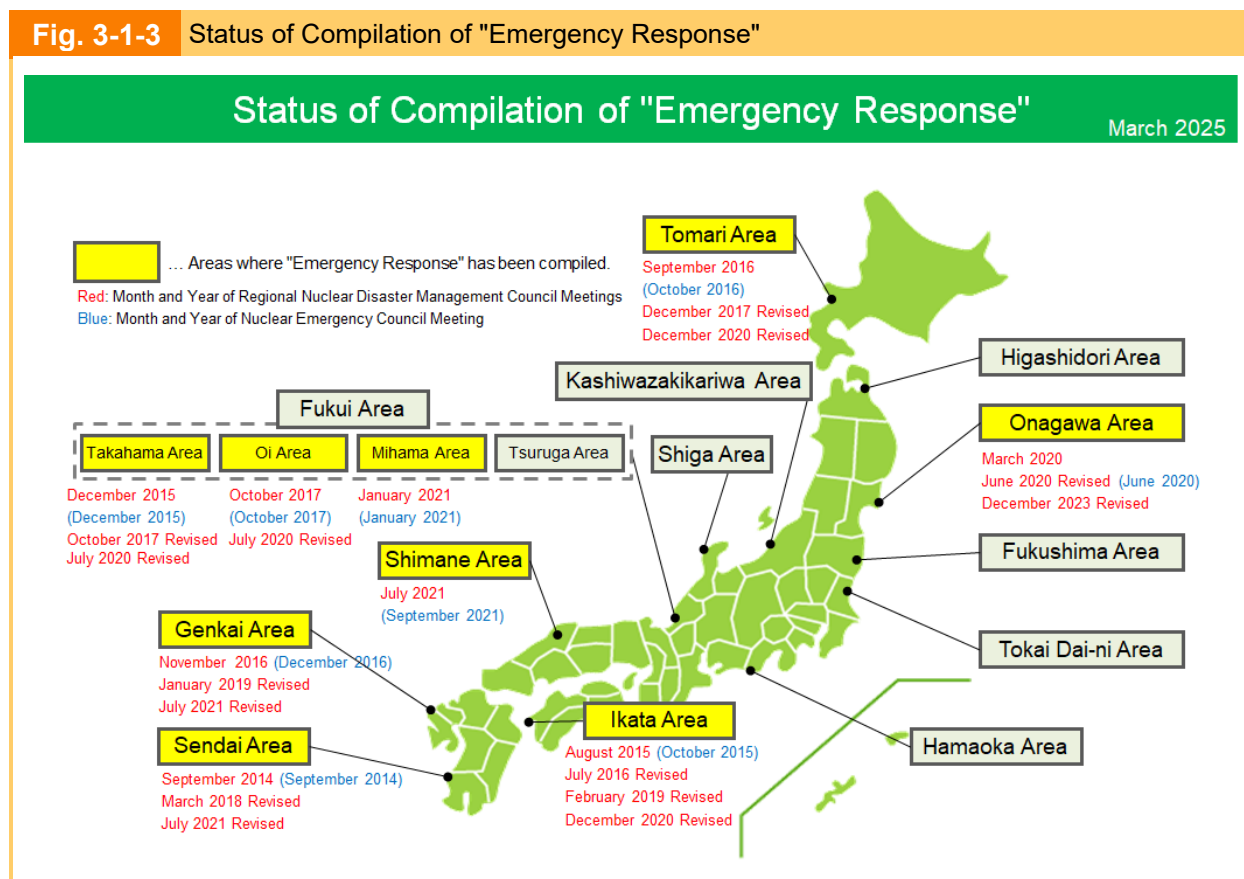


Source: Cabinet Office data

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 responses are specific and reasonable in light of the NRA EPR Guide. In addition, the emergency responses 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 the NRA. In addition to confirming the emergency responses, a PDCA cycle has been introduced, in which the central government provides support for the concretization and enhancement of each region’s nuclear disaster prevention system based on these emergency responses (Plan), 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 (Act). 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 FY2024, the emergency response plans for 9 out of the 16 target regions have been compiled and confirmed (FIG. 3-1-3).



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.

3-2 Other Support and Measures for Related Prefectures

(1) Stockpiling and Distribution of Stable Iodine Tablets

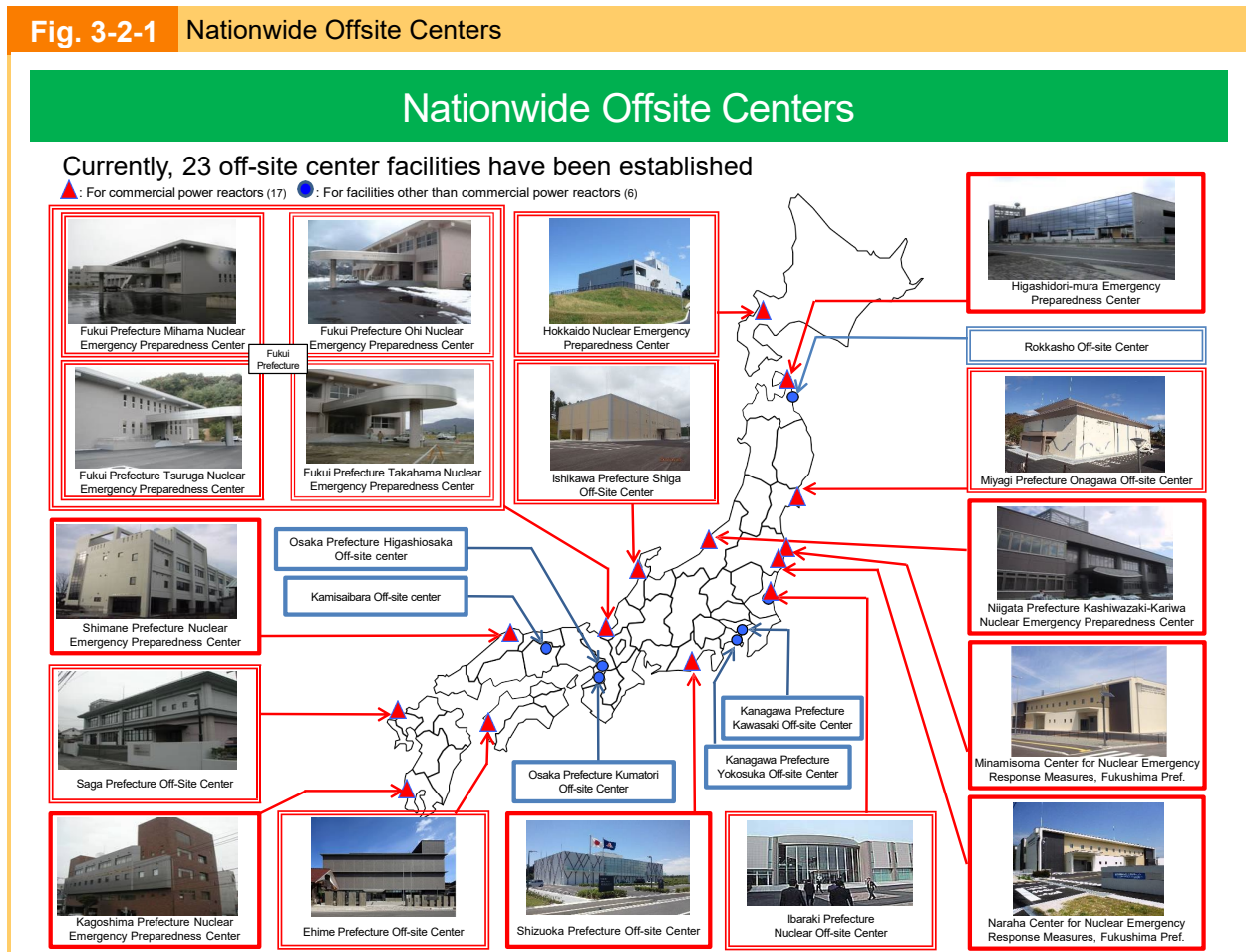
Stable iodine tablets, which are taken to prevent or reduce internal exposure of the thyroid gland to radioactive iodine (I), are stockpiled and distributed in advance by local governments with financial support from the government in the PAZ (Precautionary Action Zone) and the UPZ (Urgent Protective 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. In addition to holding briefing sessions for residents, efforts are being made to improve the distribution rate by distributing materials through pharmacies and holding briefings remotely to reduce the burden on residents.

(2) Designation of an Offsite Center

According to Article 12, paragraph 1 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 (Ordinance of the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Economy, Trade and Industry No. 3 of 2012). 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 Off-Site Centers for commercial power generation reactors. Currently, 23 Offsite Centers have been established (Fig. 3-2-1).



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 FY2021 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. In the drills organized by the prefectures, normally, prefectural governors, local governments, the Cabinet Office and relevant operational organizations such as the police, fire department, coast guard, and self-defense forces will participate. These drills include some practical exercises for the evacuation of citizens and inspections upon returning from evacuation areas (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” to raise awareness.

(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 FY2024

Region	Exercise Name	Date
Tomari	Hokkaido Nuclear Disaster Management Drill	October 31, 2024, and February 13, 2025
Higashidori	Aomori Prefecture Nuclear Disaster Management Drill	November 9, 2024, December 23, 2024
Onagawa	Miyagi Prefecture Nuclear Disaster Management Drill	June 12, 2024, February 8, 2025, February 13, 2025
Fukushima	Fukushima Prefecture Nuclear Disaster Management Drill	November 9, 2024, January 21, 2025
Tokai Dai-ni	Ibaraki Prefecture Nuclear Disaster Management Drill	October 9, 2024
Kashiwazaki-Kariwa	Niigata Prefecture Nuclear Disaster Management Drill	August 24, 2024, September 6, 2024, October 22, 2024, October 24, 2024, October 26, 2024, October 29, 2024, November 1, 2024, November 2, 2024, November 14, 2024, January 24, 2025, January 25, 2025
Shiga	Ishikawa Prefecture Nuclear Disaster Management Drill	November 24, 2024
	Toyama Prefecture Nuclear Disaster Management Drill	November 24, 2024
Fukui	Fukui Prefecture Comprehensive Nuclear Disaster Management Drill	October 25, 2024, October 26, 2024
	Shiga Prefecture Nuclear Disaster Management Drill	August 26, 2024, October 28, 2024, November 14, 2024, November 16, 2024, January 21, 2025, January 22, 2025
	Gifu Prefecture Nuclear Disaster Management Drill	November 16, 2024
	Kyoto Prefecture Comprehensive Nuclear Disaster Management Drill	December 1, 2024
Hamaoka	Shizuoka Prefecture Nuclear Disaster Management Drill	January 29, 2025, February 2, 2025
Shimane	Shimane Prefecture Nuclear Disaster Management Drill	October 9, 2024, November 7, 2024, November 9, 2024, November 13, 2024, November 16, 2024, November 18, 2024, November 23, 2024, February 6, 2025
	Tottori Prefecture Nuclear Disaster Management Drill	July 31, 2024, September 3, 2024, November 15, 2024, November 16, 2024, November 22, 2024, February 6, 2025
Ikata	Ehime Prefecture Nuclear Disaster Management Drill	October 16, 2024, October 17, 2024
	Yamaguchi Prefecture Nuclear Disaster Management Drill	October 16, 2024, October 17, 2024, October 22, 2024
Genkai	Saga Prefecture Nuclear Disaster Management Drill	November 30, 2024, January 31, 2025
	Nagasaki Prefecture Nuclear Disaster Management Drill	November 30, 2024
	Fukuoka Prefecture Nuclear Disaster Management Drill	November 30, 2024
Sendai	Kagoshima Prefecture Nuclear Disaster Management Drill	February 14, 2025, February 15, 2025, February 16, 2025 (*These were conducted in coordination with the 2024 Comprehensive Nuclear Disaster Management Drill by the national government and others.)

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 FY2024, 40 sessions were held. The main content of the training was 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 FY2024, 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 FY2024, 6 sessions were held for national personnel, 2 sessions for prefectural personnel and 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)
- 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 FY2024, 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 FY2024, 6 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 FY2024, 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.

To this end, efforts were made to strengthen coordination with the departments responsible for nuclear disaster preparedness in other countries and to conduct regular exchanges of views. In addition, by mutually inviting each other to participate in nuclear disaster drills, the sharing of international knowledge and experience on nuclear disaster preparedness was promoted. Surveys were also conducted on IAEA standards for off-site nuclear emergency preparedness, as well as on the systems and practices of major nuclear power-utilizing countries.

(1) Bilateral Cooperation on Nuclear Emergency Preparedness System

1) Cooperation with the United States of America

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 FY2024, two online technical

workshops, one online tabletop exercise observation, and one EMWG meeting were held to exchange views on nuclear emergency response exercises and training.

2) Cooperation with the French Republic

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 systems through mutual invitations to drills and regular meetings of the “Cooperation Committee for Planning and Crisis Management in Case of Nuclear Accident” since 2019. In FY2024, the two countries exchanged opinions on disaster drills and related matters.

3) Invitation to observe the Comprehensive Nuclear Emergency Prevention Drill

Regarding the Comprehensive Nuclear Emergency Prevention Drill, the U.S., France, and other foreign countries and international organizations were invited to observe the drill. From February 14 to 16, 2025, the Comprehensive Nuclear Emergency Prevention Drill was conducted at the Sendai Nuclear Power Plant of Kyushu Electric Power Co., Inc., with 27 observers from eight countries, including international organizations involved in nuclear disaster prevention and embassies in Tokyo. 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 Survey 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 (EPRReSC) 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 FY2024 Comprehensive Nuclear Emergency Disaster Prevention Drill

4-1 Implementation Overview

(1) Definition and Purpose

The purpose of the 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, assuming a nuclear emergency. In FY2024, the drill was conducted for the following purposes.

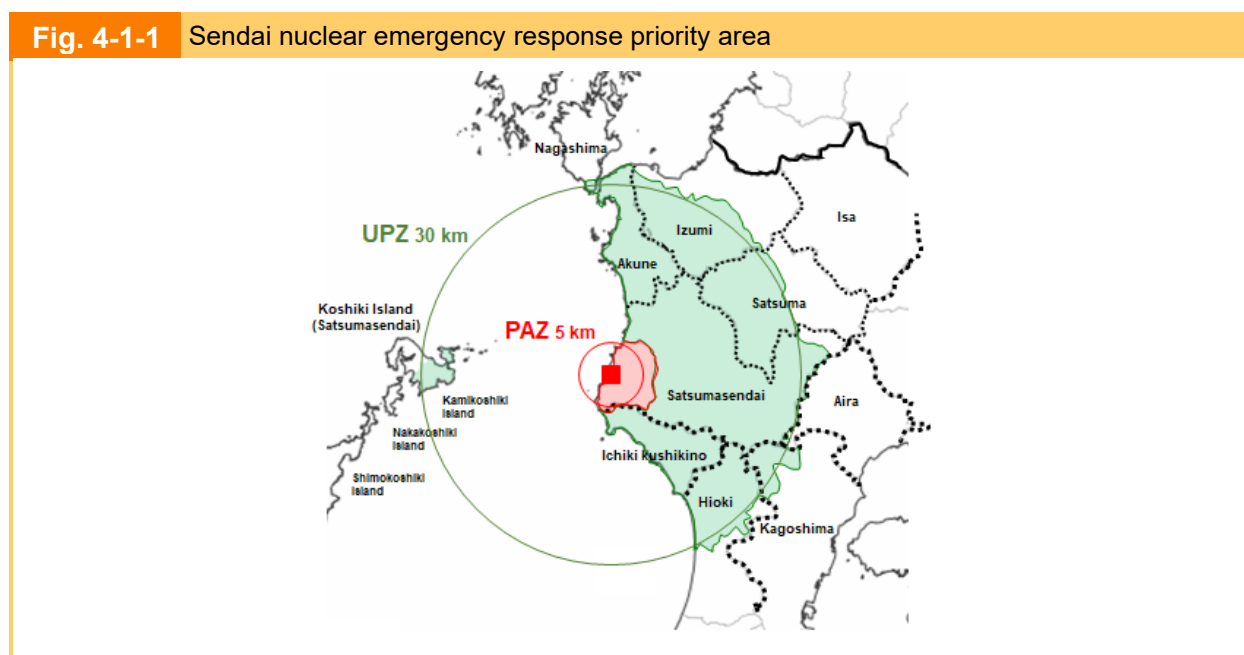


(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kunren/kunren.html)

- 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
- To verify the “Sendai Area Emergency Response” plan, the local disaster management plan, etc.
- 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) Schedule and Targeted Power Plant

Exercises were conducted at the Sendai Nuclear Power Plant of Kyushu Electric Power Company, Inc. from February 14 to 16, 2025 (Fig. 4-1-1).



Source: Compiled by the Cabinet Office based on the Geospatial Information Authority of Japan website “Geospatial Information Authority Maps (Digital Land Web)” (<https://maps.gsi.go.jp>)

(3) Participating Organizations

- Government agencies: Cabinet Secretariat, the Cabinet Office, Nuclear Regulation Authority, and other relevant ministries and agencies
- Local governments: Kagoshima Prefecture, Kagoshima City, Akune City, Izumi City, Satsumasendai City, Hioki City, and Ichikikushikino City, Satsuma Town
- Operator: Kyushu Electric Power Co., etc.
- Related organizations: National Institutes for Quantum Science and Technology, Japan Atomic Energy Agency, etc.

(4) Assumed Accident Scenario

An earthquake occurs with its epicenter offshore of the Satsuma Peninsula in Kagoshima Prefecture. This causes reactor units 1 and 2 at the Sendai Nuclear Power Plant, which were operating at constant rated thermal power, to shut down automatically. Then, a series of equipment failures occur in unit 1, resulting in the loss of the reactor's 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 three items listed below were the main focus, which ranged from initial response drills to actual drills in response to a full-scale emergency situation under worsening conditions.

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 transported by relevant emergency transportation related ministries or private transport operators to emergency preparedness base facilities (Nuclear Disaster Prevention Center, Kagoshima Prefecture) and rapid response center at nuclear facilities (the head office of Kyushu Electric Power Co., Inc.).



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 Kagoshima Nuclear Disaster Prevention Center, the offices of ministries utilizing nuclear power, the Kagoshima 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 centralize information sharing, decision-making, coordination and the provision of instructions, including with local organizations. 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 Ishiba 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 based on operational intervention levels (OIL), measures were carried out for residents in certain areas within the UPZ where OIL2 criteria were exceeded. These measures included the consideration of temporary relocation areas, the emergency distribution of stable iodine tablets, the temporary relocation of residents to prefectural evacuation shelters, and inspections upon returning from evacuation areas. Furthermore, in order to smoothly implement protective measures such as resident evacuation and shelter-in-place, disaster responses required during complex disasters were carried out in cooperation with relevant organizations and on-site response teams.



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 “Sendai Area Emergency Response,” various plans, and manuals.