

Section 3: Enhancing and Strengthening Local Nuclear Emergency Preparedness Systems

3-1 Formulating and Supporting Local Plans for Disaster Risk Reduction / Evacuation Plans

Under the Basic Act on Disaster Management, local governments must prepare Local Plans for DRR with Nuclear Emergency Response Measures (hereinafter “Local Plans for DRR”) that set out the basic response to be adopted by prefectures and municipalities in dealing with a nuclear emergency.

Currently, related local governments within a radius of around 30km of a nuclear power plant are preparing Local Plans for DRR based on the Basic Plan for DRR and the Nuclear Emergency Response Guidelines (Fig. 3-1-1). Ensuring that the content of Local Plans for DRR is highly specific and satisfactory is crucial, so the government provides proactive support regarding measures to tackle issues that are difficult for local governments alone to resolve in developing more specific Evacuation Plans and measures to assist persons requiring special care.

Fig. 3-1-1 Status of Local Plans for DRR / Evacuation Plans (as of March 31, 2020)

	Municipalities Concerned	Number of Local Plans for DRR Formulated	Number of Evacuation Plans Formulated	Remarks
Municipalities Concerned	13	13	13	
Higashidori region	5	5	5	
Onagawa region	7	7	7	
Fukushima region*	13	13	9	In December 2016, Fukushima Prefecture revised the Fukushima Prefecture Region-wide Evacuation Plan in Case of Nuclear Emergency.
Kashiwazaki-Kariwa region	9	9	9	
Tokai region	14	14	4	In March 2019, Ibaraki Prefecture revised and released the Plan for Region-wide Evacuation in Ibaraki Prefecture in Case of a Nuclear Emergency.
Hamaoka region	11	11	9	In March 2017, Shizuoka Prefecture revised the Plan for Region-wide Evacuation in Case of a Nuclear Emergency in the Hamaoka region.
Shika region	9	9	9	
Fukui area	23	23	23	
Shimane region	6	6	6	
Ikata region	8	8	8	
Genkai region	8	8	8	
Sendai region	9	9	9	
Total for the 13 regions	135	135	119	

Note: * Readers should be aware that Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station, which is a Specified Nuclear Facility, is located in the Fukushima region and that the area around it is an evacuation instruction area.

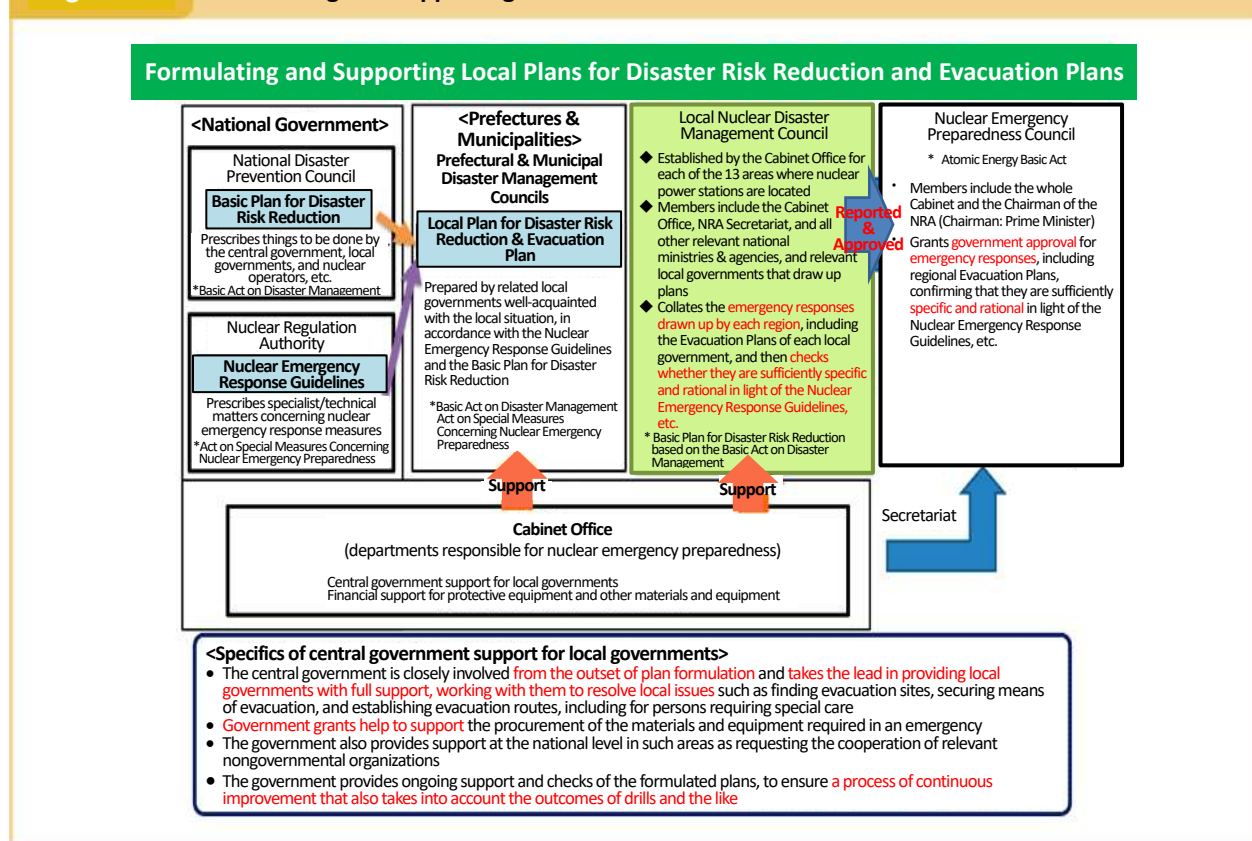
Source: Cabinet Office

In March 2015, the Cabinet Office established Local Nuclear Disaster Management Councils (hereinafter “Management Councils”) to serve as working teams for resolving issues in areas where nuclear power plants are located. Its aim in doing so was to support efforts to flesh out and enhance the content of the Local Plans for DRR and Evacuation Plans formulated by prefectures and municipalities in accordance with “Future Responses to Enhancing Local Plans for DRR” (approved by the Nuclear Emergency Preparedness Council in September 2013). The Cabinet Office also established working groups reporting to these Management Councils. The working groups in each region are considering support and region-wide coordination in the formulation of Evacuation Plans, and the assistance provided by national frontline response organizations, while the national government and related local governments are working together to develop more specific, enhanced Local Plans for DRR and Evacuation Plans (Fig. 3-1-2).

Areas where more specific, enhanced Local Plans for DRR and Evacuation Plans have been developed must summarize their emergency response including evacuation plans and have it confirmed by the Management Councils, to ensure that it is specific and rational in light of the Nuclear Emergency Response Guidelines, etc.

The Cabinet Office then reports the councils' findings to the Nuclear Emergency Preparedness Council, to seek the Council's approval. A PDCA review cycle is introduced for regions whose emergency response has been confirmed: in addition to support for enhancing the emergency response and making it more specific, followed by confirmed of the emergency response (Plan), a drill is carried out by the Management Council based on the confirmed emergency response (Do), areas for improvement are identified from the outcomes of the drill (Check), and the emergency response of the region in question is improved on the basis of those areas for improvement (Action). Thus, the local nuclear emergency preparedness system goes through an ongoing process of enhancement and strengthening.

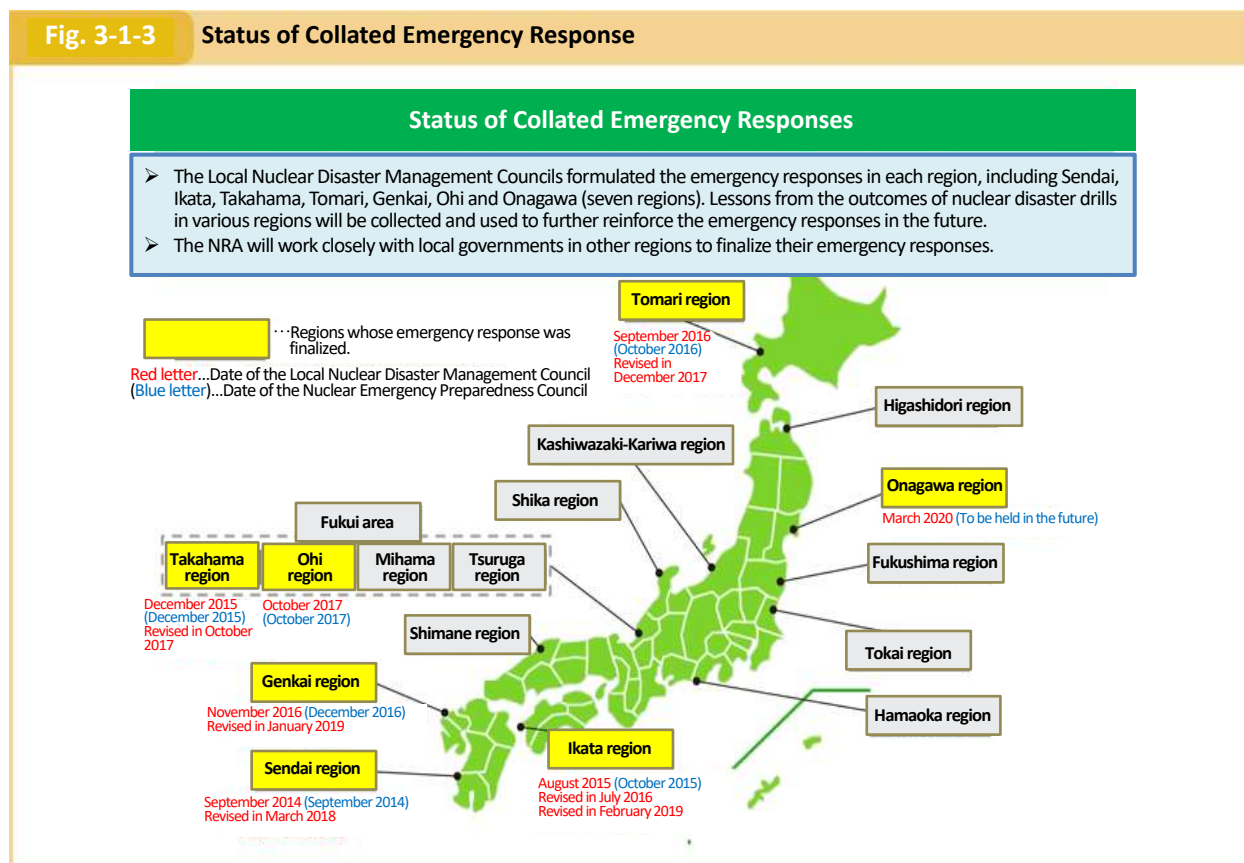
Fig. 3-1-2 Formulating and Supporting Local Plans for DRR and Evacuation Plans



Source: Cabinet Office

In FY 2019, the Onagawa Local Nuclear Disaster Management Council developed the Onagawa Region Emergency Response in its 1st meeting and checked the contents (Fig. 3-1-3).

Fig. 3-1-3 Status of Collated Emergency Response



Source: Cabinet Office

A subcommittee will be set up in each of the Tsuruga, Mihama, Ohi and Takahama regions in the Fukui area to discuss how best to solve issues specific to each region.

(1) Onagawa Region

In the Onagawa region, a working group was established under the Onagawa Local Nuclear Disaster Management Council and held 24 meetings between May 2015 and March 2020 to discuss emergency responses in the event of a nuclear disaster. The Onagawa Local Nuclear Disaster Management Council summarized "Emergency Responses in the Onagawa Region" on March 25, 2020.

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

The four key changes to the Onagawa Region Emergency Response are as follows:

- PAZ (areas within a radius of approximately 5 km from the nuclear power generation facility with about 1,000 people) carries out immediate evacuation in a state of General Emergency. Secure evacuation sites outside a 30 km radius.
- Onagawa Town with special geographical conditions, manned remote islands outside the PAZ in Ishinomaki City, and Oshika Peninsula area (about 2,000 people) shall be the quasi-PAZ, and the same protective actions as the PAZ shall be implemented.
- Within the UPZ (approximately 5-30 km from the power plant with about 195,000 people), indoor evacuation has been implemented in a state of General Emergency. As a result of emergency monitoring, temporary relocation, etc. was conducted within a week or so in areas with radiation doses exceeding a certain

level. Evacuation sites capable of accommodating about 195,000 people in the UPZ have been secured.

(iv) In the event of a complex disaster with a tsunami (when a tsunami warning or major tsunami warning is issued), evacuation from the tsunami should be prioritized rather than evacuation from a nuclear disaster to avoid the tsunami risk on human lives. If safety against tsunamis can be ensured, residents will be evacuated to the designated evacuation site in preparation for a nuclear disaster.

At the first Onagawa Local Disaster Management Council, Miyagi Prefecture, based on the recognition that "nuclear emergency preparedness must be ceaseless and constantly refined" announced that it would work with related cities and towns to enhance and strengthen preparedness. The national government said it would continue to provide support through the council, and four government agencies related to front-line response organizations, namely, the Police, Firefighters, the Japan Coast Guard, and the SDF said that they would provide necessary support in the event of unforeseen circumstances when requested by the relevant local government. In addition, Tohoku Electric Power Co., Inc. announced that it would safeguard equipment of the business operator, such as securing welfare vehicles and providing personnel and equipment to inspect evacuation and relocation areas. Based on the above, it was confirmed that the measures taken by the relevant local governments such as Miyagi Prefecture and relevant government ministries and agencies were specific and reasonable in light of the Nuclear Emergency Response Guidelines, etc.

3-2 Support and Initiatives for Other Prefectures

(1) Stockpiling and Distribution of a Stable Iodine Agent in Jelly Form

Stable iodine agents in pill form are not suitable for infants and young children (aged under three) because their swallowing ability is not fully developed by that stage. In an emergency, a pharmacist or other trained person has to administer a powdered stable iodine agent dissolved in syrup. For this reason, agents suitable for such children could not be distributed in advance, which had been a major issue.

In March 2016, the manufacturer of the pills developed a prepackaged product consisting of the active ingredient (potassium iodide) dissolved in a jelly. Accordingly, local governments in the PAZ and UPZ (Urgent Protective Action Planning Zone: Areas in which urgent protective measures are in place) stockpiled stable iodine agents in jelly form and distributed them to residents in advance with financial support by the national government. The necessary amount had been stocked by the end of FY 2018. Besides, the Cabinet Office has stocked stable iodine agents for residents outside the UPZ, and the necessary amount had been stocked by the end of FY 2019.

Stable iodine agent in jelly form



[Usage and dosage]

Potassium iodine should be administered orally. The usual dosage is 100 mg/time for individuals aged 13 or over; 50 mg/time for children aged at least 3 but under 13; 32.5 g/time for infants aged at least 1 month but under 3; and 16.3 mg for newborn infants.

Source: Provided by the pharmaceutical manufacturer

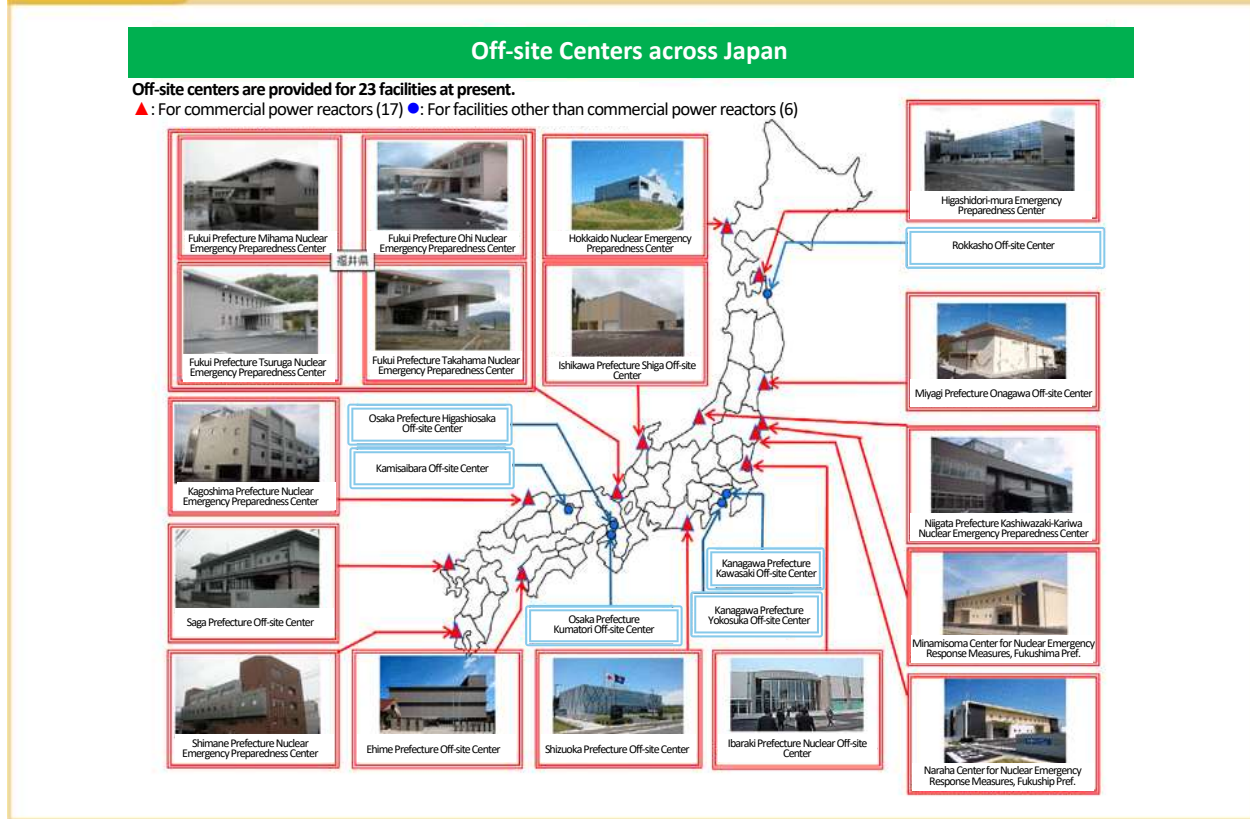
(2) Designation of Off-site Centers

Under Article 12 (1) of the Act on Special Measures Concerning Nuclear Emergency Preparedness, the Prime Minister is required to designate an emergency response base facility (known as “an off-site center”) for each nuclear site, for the coordination of emergency response measures (Fig. 3-2-1).

The requirements that off-site centers must satisfy are prescribed in the Cabinet Office Ordinance on Off-site Centers Pursuant to the Act on Special Measures Concerning Nuclear Emergency Preparedness. Based on the lessons from the accident at Fukushima Daiichi Nuclear Power Station, the siting requirements for the off-site centers of commercial power reactors were revised in September 2012 to be within a radius of 5 - 30 km from the power station in principle (i.e. within the UPZ). Subsequently, in March 2017, the NRA revised the Nuclear Emergency Response Guidelines and established the scope of the Priority Zones for Nuclear Emergency Response for nuclear fuel facilities, etc. In August 2019, the NRA revised the requirements for the off-site center for nuclear fuel facilities to be basically equivalent to those for commercial power reactor facilities.

Since the former Onagawa Off-site Center had been damaged by tsunamis in the Great East Japan Earthquake, a Fire Academy in Sendai City had been designated as a temporary off-site center for the Onagawa region, but a new off-site center was constructed in Onagawa Town and designated as such in April 2020.

Fig. 3-2-1 Off-site Centers across Japan

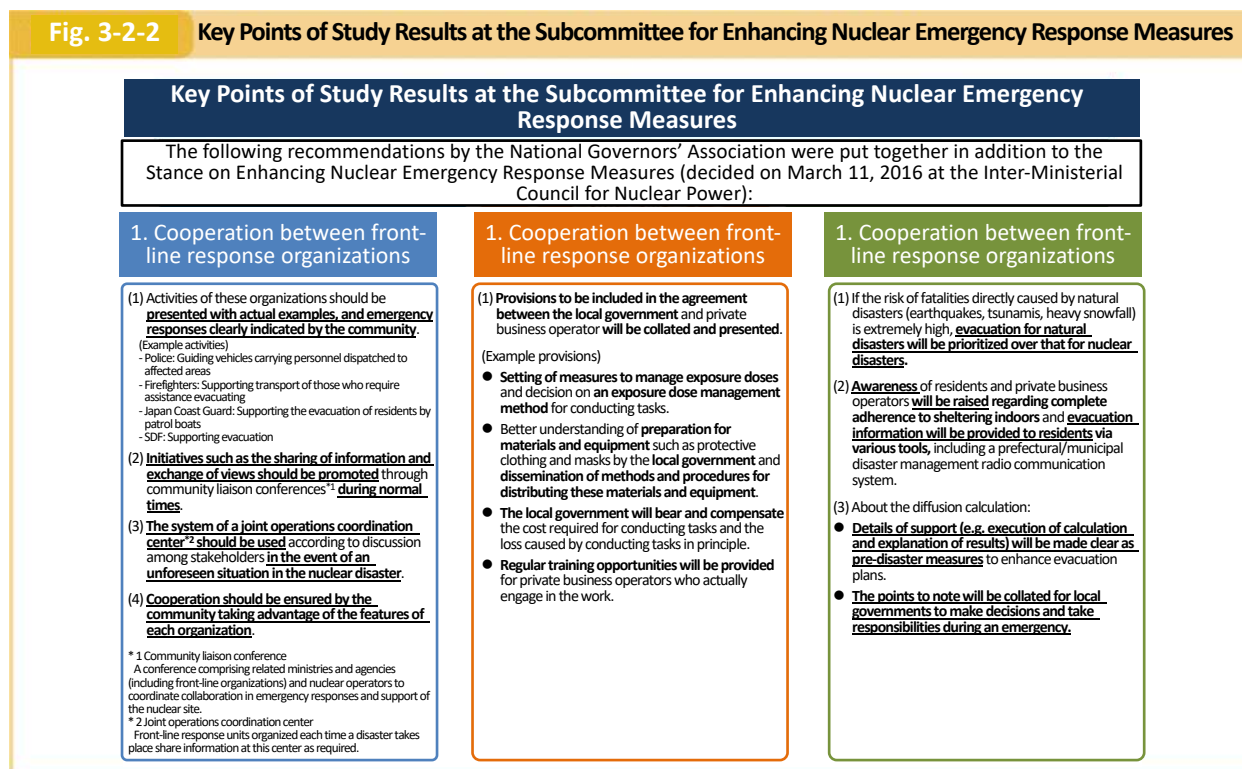


Source: Cabinet Office

(3) Enhancing Nuclear Emergency Response Measures

At a meeting of the Inter-Ministerial Council for Nuclear Power in March 2016, a document concerning nuclear energy policy, entitled the “Stance on Enhancing Nuclear Emergency Response Measures,” was put together at the request of the National Governors’ Association, in response to calls from local governments in charge of local resilience. The Committee of Related Ministries and Agencies on Nuclear Emergency Response Measures was convened in April 2016 to facilitate a government-wide effort to enhance nuclear emergency response measures in light of this stance. At this meeting, committee members decided to establish subcommittees focused on three themes: cooperation between front-line response units (No. 1 Subcommittee), cooperation between private sector business operators (No. 2 Subcommittee), and approaches to the provision of information, including diffusion calculations (No. 3 Subcommittee). Each subcommittee was engaged in professional and practical deliberations that take into account the views of local governments while cooperating with related ministries and agencies. The outcomes were reported at the Inter-Ministerial Council for Nuclear Power, etc. (Fig. 3-2-2)

Fig. 3-2-2 Key Points of Study Results at the Subcommittee for Enhancing Nuclear Emergency Response Measures



Source: Cabinet Office

3-3 Training and Seminars on Regional Nuclear Emergency Preparedness

(1) Support for Nuclear Emergency Preparedness Drills Conducted by Local Governments

Under the Basic Act on Disaster Management, etc., local governments are required to hold a nuclear emergency preparedness drill on a regular basis. Drills organized by related prefectural governments are carried out with the participation of prefectural governors and local governments, as well as national and regional front-line response organizations, namely the police, firefighters, the Japan Coast Guard, and the Self-Defense Forces. They include exercises in evacuating local citizens and conducting inspections when evacuating each area (Fig. 3-3-1).

In regions where the Local Plan for DRR and Evacuation Plan have been enhanced and made more specific, each Local Nuclear Disaster Management Council provides the necessary support in such areas as planning and implementing the drills, promoting the widespread use of evaluation methods, and operating the PDCA cycle via the drills, with the goal of verifying the specificity and effectiveness of the Local Plans for DRR and Evacuation Plan.

In addition, the Cabinet Office formulated the Guidance for Planning, Implementing and Evaluating Emergency Preparedness Drills in March 2018 as basic guidance for the prefectures which operate the entire drills from planning, implementation to evaluation and revised the guidance in March 2019.

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

Fig. 3-3-1 Nuclear Emergency Response Exercises Held by Local Governments in FY 2019

Region	Name of Drill	Date
Tomari	Hokkaido Nuclear Emergency Response Exercise	February 6 and 13, 2020
Higashidori	Aomori Prefecture Nuclear Emergency Response Exercise	November 13, 2019
Onagawa	Miyagi Prefecture Nuclear Emergency Response Exercise	November 12 and 13, 2019
Fukushima	Fukushima Prefecture Nuclear Emergency Response Exercise	Canceled due to responding to disasters of Typhoon Hagis
Kashiwazaki-Kariwa	Niigata Prefecture Nuclear Emergency Response Exercise	November 8 and 9, 2019
Shika	(1) Ishikawa Prefecture Nuclear Emergency Response Exercise (2) Toyama Prefecture Nuclear Emergency Response Exercise	(1) November 4, 2019 (2) November 4 and 17, 2019
Fukui	(1) Fukui Prefecture Nuclear Emergency Response Exercise (2) Kyoto Prefecture Nuclear Emergency Response Exercise (3) Shiga Prefecture Nuclear Emergency Response Exercise (4) Gifu Prefecture Nuclear Emergency Response Exercise	(1) August 30 and 31, 2019 (2) November 30, 2019 (3) November 17, 2019 (4) November 24, 2019
Hamaoka	Shizuoka Prefecture Nuclear Emergency Response Exercise	January 28 and 29, 2020
Shimane	Shimane Prefecture Nuclear Emergency Response Exercise Tottori Prefecture Nuclear Emergency Response Exercise (To be held as a national comprehensive nuclear emergency response exercise this year)	November 8, 9 and 10, 2019
Ikata	Ehime Prefecture Nuclear Emergency Response Exercise Yamaguchi Prefecture Nuclear Emergency Response Exercise	October 30, 2019
Genkai	Saga Prefecture Nuclear Emergency Response Exercise Nagasaki Prefecture Nuclear Emergency Response Exercise Fukuoka Prefecture Nuclear Emergency Response Exercise	November 30, 2019
Sendai	Kagoshima Prefecture Nuclear Emergency Response Exercise	February 9, 2020

Source: Cabinet Office

(2) Training for Staff of the National and Local Governments and Front-line Response Organizations

(Training Programs by the National Government)

The Cabinet Office has organized training of key nuclear emergency response personnel and tabletop exercises for Nuclear Emergency Response Headquarters. The objective of these initiatives was to provide local governments and other disaster response personnel with an understanding of approaches to protection measures in the Nuclear Emergency Response Guidelines and to improve their ability to respond in the event of a nuclear emergency.

In addition, it has organized the Core Personnel Training aimed at promoting the understanding of the core roles among the nuclear emergency response personnel concerning the management of the national headquarters according to the development of the situation of a nuclear disaster and the Practical Capacity Building Training aimed at improving various skills that are necessary for smoothly conducting resident evacuation in the event of a nuclear disaster, such as skills for formulating implementation plans.

It has also provided basic training on nuclear emergency preparedness, aimed at inculcating the basic knowledge required for radiological protection to national disaster response personnel.

(i) Training of key nuclear emergency response personnel

Training is provided to key disaster response personnel at local governments who deal with nuclear emergency preparedness, to teach them basic knowledge required for nuclear emergency management. The course covers legislation concerning nuclear emergency preparedness, the Nuclear Emergency Response Guidelines and lessons from the accident at Fukushima Daiichi Nuclear Power Station. These training sessions

were held on 40 occasions in FY 2019. The main topics covered in the training are as follows:

- Overview of legislation concerning nuclear emergency preparedness (classroom learning)
- Approaches to radiation protection in accordance with the Nuclear Emergency Response Guidelines (classroom learning)
- Lessons from the accident at Fukushima Nuclear Power Station (classroom learning), etc.

(ii) Tabletop Exercises for Nuclear Emergency Response Headquarters

Tabletop Exercises for Nuclear Emergency Response Headquarters are organized for key disaster response personnel at the national and local governments who deal with nuclear emergency preparedness, to provide them with the ability to respond in the event of an emergency and also to review and improve the Local Plans for DRR and Evacuation Plans formulated by local governments. These exercises were held on 13 occasions in FY 2019. The main topics covered in the training are as follows:

- Activities at off-site centers (classroom learning)
- Exercises focused on challenges specific to each functional team
- Tabletop exercise based on scenarios, etc.

(iii) Core Personnel Training

The Core Personnel Training is conducted for those who play leading roles among key disaster response personnel at the national and local governments, with an aim to equip them with necessary knowledge and skills. In FY 2019, two trainings were conducted for national and prefectural government personnel respectively. The main topics covered in the training are as follows:

- Emergency situation concerning power generation reactors (classroom learning)
- Nuclear emergency and health hazards (classroom learning)
- Protective measures against nuclear emergencies (classroom learning)
- Tabletop exercise

(iv) Practical Capacity Building Training

a. Inspection of evacuation and relocation areas, etc.

The Practical Capacity Building Training is conducted for local government employees in charge of developing specific plans for inspection of evacuation and relocation areas, in order to strengthen their skills to formulate specific plans, manuals, etc. In FY 2019, four trainings were conducted. The main topics covered in the training are as follows:

- Basic principles for the inspection of evacuation and relocation areas (classroom learning)
- Planning and development of inspections when evacuating each area and exercises on management

b. Evacuation by bus

The Practical Capacity Building Training was conducted for local government employees in charge of planning evacuation by bus, in order to strengthen their skills to formulate specific bus evacuation plans, manuals, etc. In FY 2019, four trainings were conducted. The main topics covered in the training are as follows:

- Operation procedures related to securing evacuation buses for residents and arrangements and preparation in advance, etc. (classroom learning)

- Status of preparation of a bus evacuation plan in each prefecture, clarification of problems and study for improvement

c. Formulating protective action implementation policy and other responses

Practical Capacity Building Training was conducted for local government employees that oversaw the formulating of protective action implementation policies to develop human resources who understood the contents of implementation policies and formulated them. In FY 2019, two training sessions were conducted. The main topics covered were as follows:

- Formulation and operation of the protective action implementation policy (classroom learning)
- Implementation policy operation preparation and confirmation exercise

(Training Programs by Local Governments)

Each prefecture took initiative in planning and implementing the training for disaster response personnel and basic training in nuclear emergency preparedness, with support from the Cabinet Office as necessary.

(i) Training for disaster response personnel

Training was provided for disaster response personnel including the employees of private business operators who carry out activities to protect local citizens from radiation in the event of a nuclear emergency. As well as providing them with the basic knowledge required for radiation protection, this course teaches them about the basic approach to protecting citizens from radiation and the sequence of protective activities.

(ii) Basic training in nuclear emergency preparedness

Basic training in nuclear emergency preparedness was provided to key disaster response personnel at local governments who deal with nuclear emergency preparedness, to teach them the basic knowledge required for radiation protection.



Lecture

(Training of key nuclear emergency response personnel)



Exercise

(Tabletop Exercises for Nuclear Emergency Response Headquarters)



Lecture
(Core Personnel Training)



Lecture
(Practical Capacity Building Training)

3-4 Strengthening International Partnerships

International organizations such as the International Atomic Energy Agency (IAEA) and various countries undertake initiatives concerning off-site nuclear emergency preparedness. Such advanced knowledge is required to raise the standard of Japan's own nuclear emergency preparedness.

Accordingly, the government has sought to share its knowledge and experience of nuclear emergency preparedness with other countries by such means as strengthening cooperative frameworks with authorities responsible for nuclear emergency preparedness in other countries, conducting regular exchanges of opinions with them and mutual invitation to exercises. In addition, Japan conducts surveys of the IAEA's standards regarding off-site nuclear emergency preparedness and the systems/management of major countries engaging in nuclear power generation

(1) Bilateral Cooperation on Nuclear Emergency Preparedness Systems

(i) Cooperation with the U.S.

Japan is deepening its partnership with the U.S. in the area of nuclear emergency management systems via reciprocal invitations to exercises and regular exchanges of opinions with such bodies as the Department of Energy (DOE), the Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC), based on the U.S.-Japan Bilateral Commission on Civil Nuclear Cooperation framework established in 2012 under the Emergency Management Working Group (EMWG). The 12th EMWG was held in the United States in September 2019 to discuss the outcome of cooperation and the action plan for the next three years. Prior to the meeting, participants participated in seminars and tabletop exercises on nuclear emergency responses in the United States.

(ii) Cooperation with France

The Memorandum of Cooperation between the Parliamentary Vice-Minister of the Cabinet Office of Japan and the Director-General for Civil Security and Crisis Management, Ministry of the Interior of France on Emergency Management related to Nuclear Accidents was signed in 2015. Based on this memorandum, the Cabinet Office is pursuing closer collaboration with the French Ministry of the Interior and other relevant French organizations in the area of nuclear disaster preparedness through regular opinion exchange and reciprocal invitations to exercises. Specifically, in October 2019, the Cabinet Office held the "Committee for Cooperation in the Field of Emergency Situation and Management in the Event of a Nuclear Accident," introducing the efforts

of the two countries, discussing areas of future cooperation and visiting the Off-site Center in Ibaraki Prefecture and JAEA, etc.

(iii) Other international cooperation

In addition to the above, information and opinions are exchanged as needed. In FY 2019, Japan exchanged opinions with visitors from Singapore and Vietnam and guided tours.

In the annual comprehensive nuclear emergency response exercise, Japan invites representatives from the United States and France as stated above and other countries and international organizations to observe the exercise. Japan invited 21 representatives of international organizations and nuclear emergency preparedness organizations in various countries to observe the Comprehensive Nuclear Emergency Response Exercise held at Shimane Nuclear Power Stations of the Chugoku Electric Power Co., Inc. (hereinafter called "Shimane Nuclear Power Station") in November 2019. Members of the delegations spent three days in the area, where they observed Nuclear Emergency Core Hospitals, the evacuation of residents and the Declaration of a Nuclear Emergency Situation from the Prime Minister. Furthermore, after the completion of the exercise, the Cabinet Office held a workshop to exchange opinions on the Comprehensive Nuclear Emergency Response Exercise and the system under emergency with the representatives who observed the nuclear emergency response exercise in foreign countries.



Visit at the Comprehensive Nuclear Emergency Response Exercise

(2) Surveys of International Standards, etc.

Japan actively cooperates with the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA) and exchanges opinions with them. With regard to the IAEA, to cooperate in developing standards for off-site nuclear emergency preparedness and gather information, the IAEA has participated in the regular "Emergency Preparedness and Response Standards Committee (EPReSC)" (the 8th meeting: June 25-27, 2019, the 9th meeting: December 3-5, 2019) as well as cooperating in various information exchange and human resource 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 systems and operations, etc. related to nuclear emergency preparedness in major countries using nuclear power.