

October 25, 2013

Federation of Electric Power Companies

The Japan Atomic Power Company

Status of Preparation of the Nuclear Emergency Support Organization

- Building a power industry-wide support system to prepare for a disaster -

The Federation of Electric Power Companies (FEPC) plans to build a nuclear emergency support organization by FY 2015 to provide diverse and advanced means to deal with a nuclear disaster in a power plant (as announced on July 20, 2012).

Following the announcement in July 2012, a temporary team was established within the Tsuruga Training Center of the Japan Atomic Power Company in January 2013 for purchasing necessary robots and training their operators, while the entire power industry discussed the ideal form and functions of the future organization, including its structure. As a result, the Basic Concept that sets out the policy for preparing and operating the organization was finalized today.

The purpose of this organization is to help a power company tackle a nuclear disaster by dispatching equipment such as remote-controlled robots for checking the site situation, measuring the air dose rate, and removing debris both inside and outside the building, in a highly radioactive environment with debris covering the ground. In normal times, the organization centrally purchases and improves the equipment and trains the operators, gathering know-how and experience from across the industry to maintain and improve an efficient and effective support organization.

In addition to the basic roles and actions of the organization, the Basic Concept defines the response system in the event of an emergency, as well as the requirements for the equipment to be purchased and the siting of the organization.

Going forward, the Japan Atomic Power Company (JAPC) will lead the detailed review based on this Basic Concept to launch the organization by FY 2015. Specifically, the JAPC will procure the necessary equipment, develop manuals, and plan the operation of the organization, while performing measurements and geological surveys in a part of the Fukui Prefectural Horticultural Research Center in Mihama town, as a candidate site where the organization could be located.

While fully meeting the new regulatory requirements, the power companies will make utmost voluntary efforts to improve the safety measures. As part of such efforts, the power industry will work together to build a system that provides the highest level of support in the world.

Overview of the Basic Concept of the Nuclear Emergency Support Organization

In addition to the fundamental roles and actions of the Nuclear Emergency Support Organization, the Basic Concept sets out the response system in the event of an emergency, as well as the requirements for the equipment to be procured and the siting of the organization.

Based on this Basic Concept, detailed reviews will be carried out to establish the organization by FY 2015.

In formulating the Basic Concept, the “Suggestions for the preparation of the Nuclear Emergency Support Organization (February, 2013)” submitted by the Fukui Prefectural Committee for the Preparation of the Nuclear Emergency Support Organization have been reviewed and taken into account.

1. Role

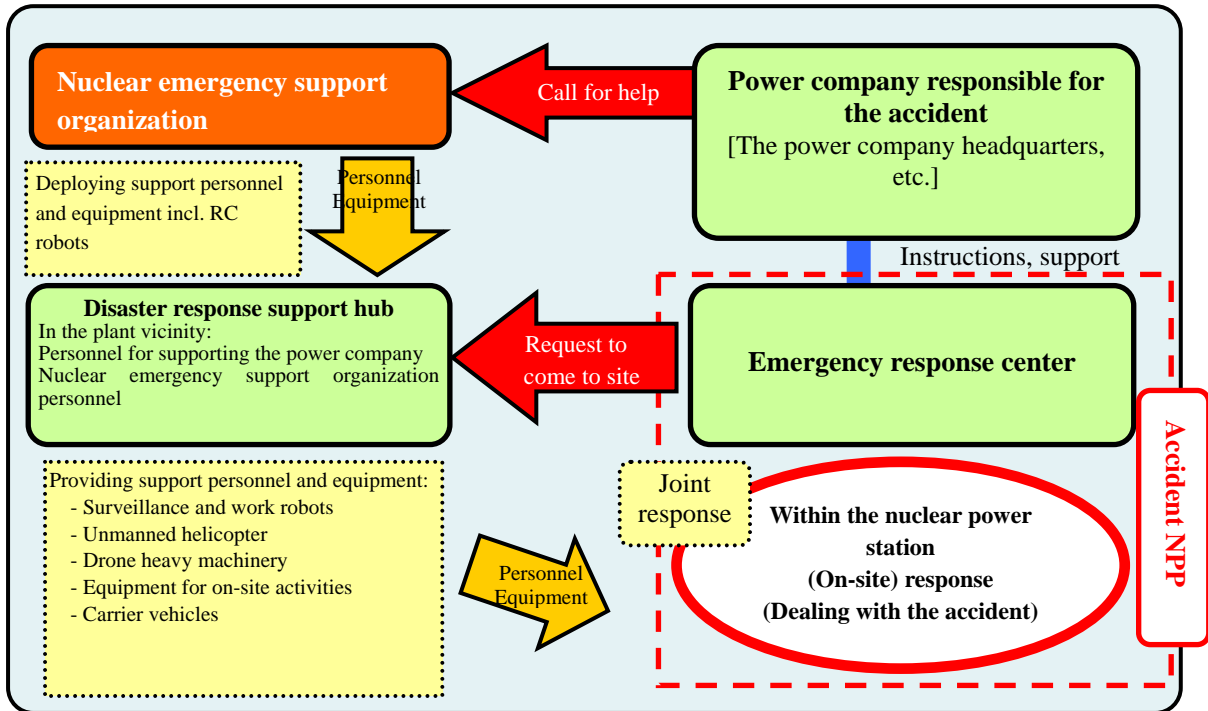
To minimize the radiation exposure of personnel in a highly radioactive environment in a nuclear disaster, the organization centrally manages and operates equipment such as remote-controlled robots, thus helping the power company to tackle the disaster with diverse and advanced measures.

2. Actions to be implemented

a. In an accident

- In the event of a nuclear disaster, quickly send personnel and equipment from the hub to the site in response to a request from the power company responsible for the accident.
- Under the instructions of and in collaboration with the relevant power company, use remote-controlled robots to check the site situation, measure the air dose rate, secure access paths by removing debris, remove obstacles inside the building, and transport equipment.

Details of disaster response and the flow of support activities



B. Normal times

- Secure a 24/7 emergency contact system, and develop a mobilization plan.
- Train personnel on robot operation, and make improvements based on know-how and experience gained through the procurement, maintenance, management and training on necessary equipment.

3. Equipment to be prepared

The following equipment is to be procured by the support organization for conducting support activities:

a. Remote-controlled equipment

Small- and medium-sized robots	Gathering information both indoors and outdoors, removing obstacles indoors, and removing dust.
Small and large drone heavy machinery	Removing obstacles indoors and outdoors, and carrying equipment.
Drone helicopter (small UAV)	Gathering information indoors and outdoors (surveillance from an elevated viewpoint)

b. Equipment for on-site activities (for roughly 3 days of support)

Radiation protection equipment	Full face masks, dosimeters, Tyvek suits
Radiation control and decontamination equipment	Decontamination tents, high-pressure washers, drainage water storage tanks, portable radiation counters
Work equipment	Radio repeaters, maintenance and repair equipment, spare parts
General equipment	Communication devices, light and power sources, fuel, food and water, consumable supplies

c. Carrier vehicles

Carrier vehicles (prepare the number of units needed for each purpose)	Equipment carrier vehicles (robot and light equipment carrier vehicle, heavy equipment carrier vehicle, etc.) On-site command car
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4. Support organization facilities

The functions and specifications of the support organization facilities required in order to serve their roles are as follows:

Function		Rooms and storages	Buildings
Organization management		Office, meeting room, reception room	Office building
Command and support in an emergency		Emergency operation (communication) room, lodging facilities	
Information management		Reference room	
Education and training	Outdoor training	Training field for operating heavy equipment and drone helicopter, debris depot	Outdoor training field
	Classroom lessons and desktop training	Study room	Indoor training building
	Indoor training	Operation training room (operation room, test run room)	
	Radiation	Room for practicing how to wear and	

	protection training	remove equipment	
Maintenance and management of equipment	Maintenance	Engineering room (electrical, mechanical)	
	Storage	Equipment (robot) storage	Robot storage
		Garage for various vehicles, equipment storage	Garage for various vehicles, equipment storage
		General garage, hazardous material storage	General garage, hazardous material storage
Response to emergency at the support hub		Emergency generator, fuel storage	Generator room
Transportation		On-site roads (can be used by heavy equipment and vehicles) Heliport*	Within the premises outdoors
Other		Employee (guest) parking space, green space	

* In selecting the site, make sure that a heliport suitable for large carrier helicopters can be secured near the hub facilities.

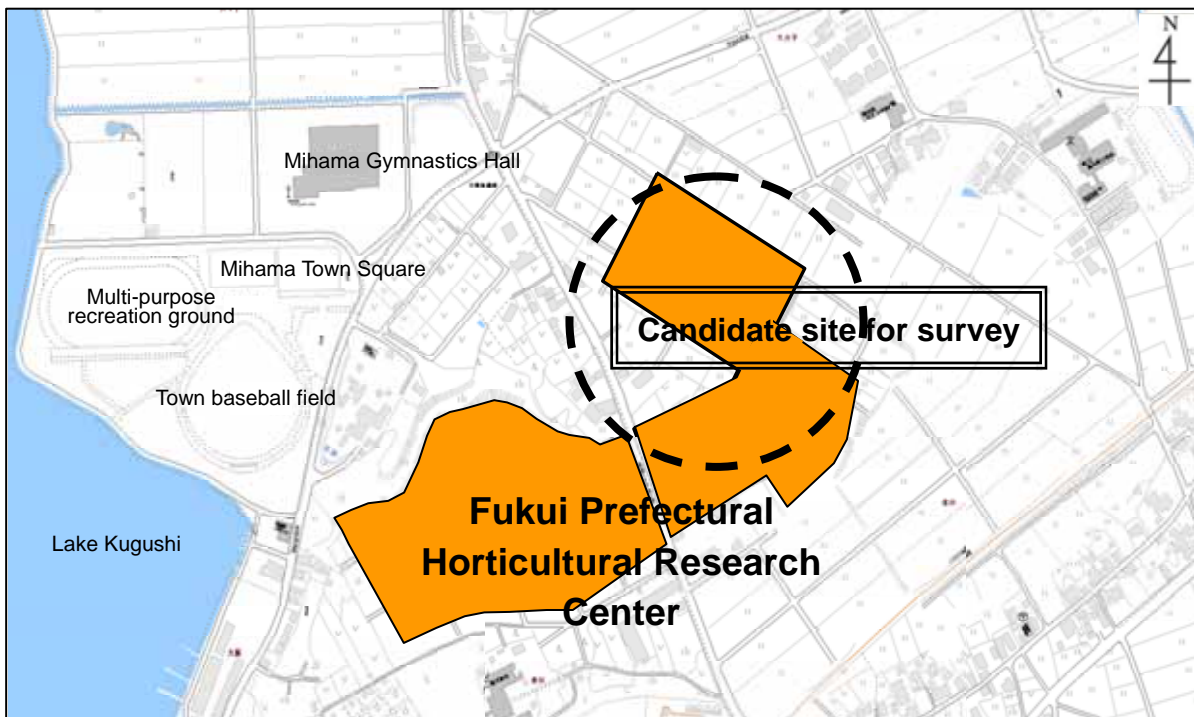
Organization: 1 or 2 hubs in the country (incl. Fukui Prefecture)
Employees: Approx. 20 employees/hub
Launch timing: Established in Fukui prefecture by FY 2015

Nuclear Emergency Support Organization: Overview of Survey at a Candidate Site

Purpose: To check the ground bearing strength (bearing capacity and settlement) for preparing the site for the Organization

Survey conducted by: The Japan Atomic Power Company

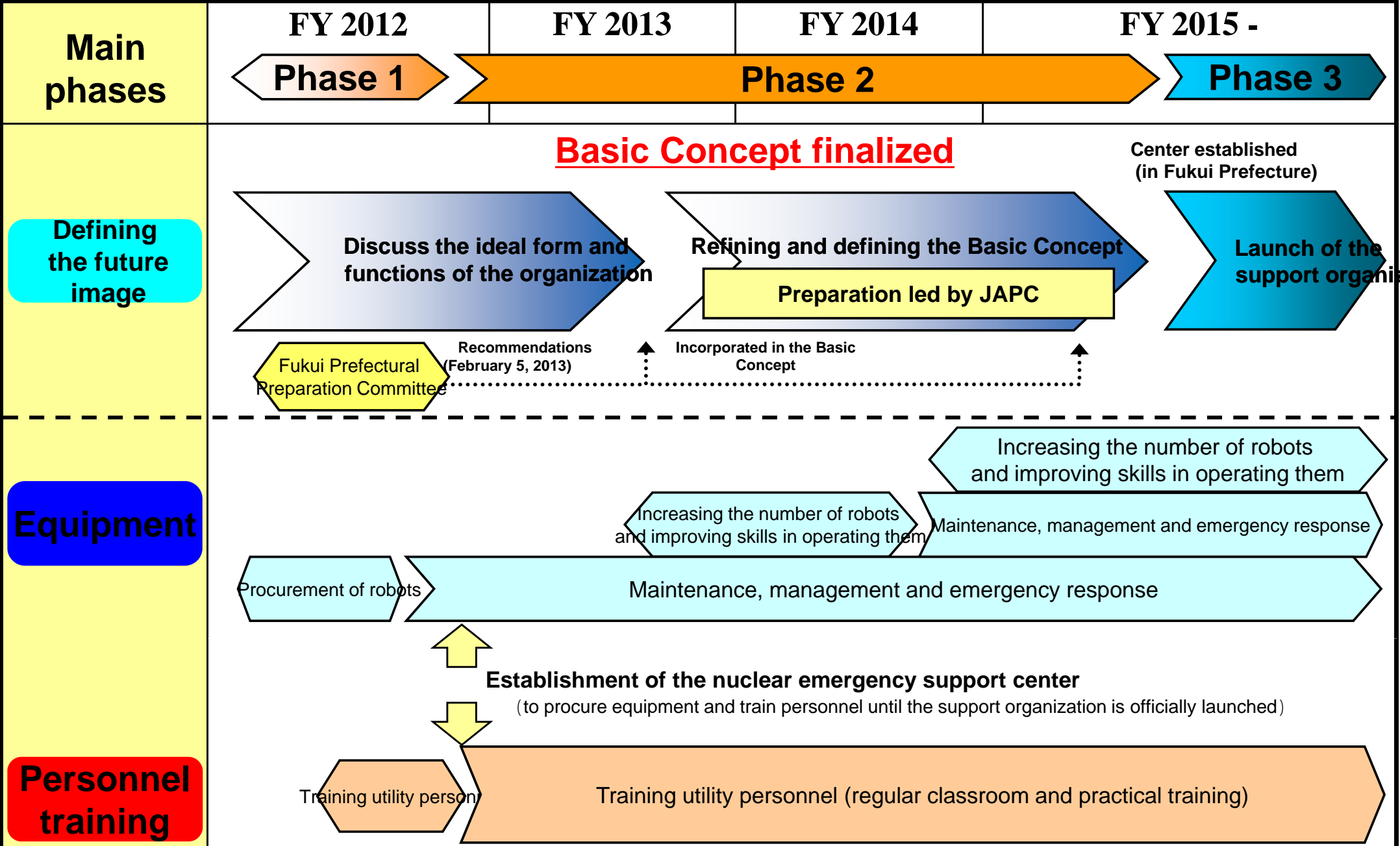
Survey location: within the Fukui Prefectural Horticultural Research Center (Kugushi, Mihama-cho, Mikata-gun, Fukui Prefecture)



- Survey items
- (1) Land measurement
 - (2) Geological survey (drilling investigation)
 - Survey points: 10 points
 - Drilling depth: 10–50 meters

Survey period: October to December, 2013 (planned)

Schedule for the Preparation of the Nuclear Emergency Support Organization



Activities in Phase 1 and 2 (as of September 2013)

A nuclear emergency support center was set up to procure and manage equipment and to train operators.

Establishment of the preliminary nuclear emergency support center (January 23, 2013)

Venue: within the Tsuruga Training Center of the Japan Atomic Power Company (9 personnel)

Role: Procurement and management of equipment and the training of equipment operators until the establishment of the Nuclear Emergency Support Organization

Procurement and management of robots

2 PackBots (site surveillance (video, radiation measurement))

1 Warrior (removing obstacles)



Center: Warrior Left & Right: PackBot (by iRobot)

Robot operation training by utility personnel

Operation of PackBot (driving, ascending and descending steps, grasping objects)



Training scene at the center