Emergency Fire Response Teams (EFRTs) are units dispatched from all over Japan on the request or instruction of the Commissioner of the Fire and Disaster Management Agency. These are used as fire service support for large-scale disasters that cannot be handled solely by the firefighting capacity of the disaster-stricken area. For the EFRTs to respond rapidly and accurately to changing situations in the event of national emergencies, such as massive or extremely special types of disasters, it is important to logistically coordinate their dispatch, advancement/transfer, on-site activities, and logistic support from a nationwide perspective, which in turn requires that the national government’s command and coordination functions be strengthened. In this paper, we first review the issues of the EFRTs that became apparent through the Great East Japan Earthquake, the undertakings that followed, and the discussion conducted at the Fire and Disaster Management Council surrounding the direction to be taken with regard to wide-area command and coordination. We then review the government plans related to fire service support activities, including EFRT dispatch, premised on the Nankai Trough Earthquake and nuclear emergencies as examples of national emergency disasters. Finally, we point out the need to strengthen the national government’s command and coordination functions over the EFRTs, to allow them to respond rapidly and accurately according to government plans in the event of a national emergency disaster. We likewise discuss the institutional measures necessary to achieve this end.

Keywords: Emergency Fire Response Team, national emergency disaster, Great East Japan Earthquake, Commissioner of the Fire and Disaster Management Agency, command and coordination

1. Introduction

From lessons culled from the Great Hanshin Awaji Earthquake, the Emergency Fire Response Team (EFRT) was established in June 1995. It aimed to set up a mutual support system among fire services around the country to implement rescue activities from a national standpoint in cases when it is difficult to respond to major disasters with only the firefighting capacities of the disaster-stricken area. The Great East Japan Earthquake provided the first opportunity for the EFRT to be deployed on a nationwide scale upon the instruction of the Commissioner of the Fire and Disaster Management Agency (FDMA).

In the Great East Japan Earthquake, EFRTs were dispatched from 44 prefectures excepting the major disaster-stricken areas of Iwate, Miyagi, and Fukushima prefectures; they conducted search-and-rescue and firefighting activities for a period of 88 days, and accomplished much, including the rescue of over 5,000 people. It was the first time that a large-scale force was being mobilized from the entire nation, engaging in various activities over an extended period. Issues such as the intensive and immediate deployment of personnel following a disaster, rapid deployment of forces to the disaster-stricken areas, procurement of supplies, equipment and fuel, as well as cooperation with other organs operating onsite surfaced.

The Japanese government has since enlarged the EFRT in preparation for the possible occurrence of the Nankai Trough Earthquake and Tokyo Inland Earthquake, and to overcome and remedy the issues identified through the Great East Japan Earthquake. They established the Joint Task Force to facilitate rapid deployment, drew up dispatch plans according to the estimated damage, and strengthened cooperation with other onsite organizations through drills.

It is important to carry out the nationwide logistical coordination of the dispatch, advancement and relocation, on-site activities, and logistical support of the EFRT. The national command and coordination function should be strengthened in order for the large-scale EFRTs from all over Japan to be dispatched rapidly to the disaster-stricken areas, coordinate closely with the deployed units of other organizations, and accurately respond to the situation.

The direction of wide-area command and coordination was discussed by the 26th Fire and Disaster Management Council, which was formed immediately after the Great East Japan Earthquake. It was decided that for the time being they would undertake strengthening of the command and support system by reexamining advance plans.
and conducting practical training under the current framework [1].

However, we find that in order to prepare for national emergency disasters, it is also necessary to examine institutional measures, including the extension of the government’s command authority over the EFRT to strengthen the nation’s command and coordination functions, in addition to undertaking operational improvements through reexamination of advance plans and training, etc.

In this paper, we first review the issues of the EFRT, which became apparent through the Great East Japan Earthquake, the undertakings that followed, and the discussion conducted at the Fire and Disaster Management Council surrounding the direction to be taken with regard to wide-area command and coordination. We then review the government plans related to fire service support activities, including EFRT deployment, premised on the Nankai Trough Earthquake and nuclear emergencies as examples of national emergency disasters. We then point out the need to strengthen the national government’s command and coordination functions over the EFRT, so as to allow it to respond rapidly and accurately according to government plans in the event of a national emergency disaster, and discuss the institutional measures necessary to achieve this end.

2. Outline of EFRT and Legal Scheme of its Deployment

2.1. Outline of EFRT

Individual municipalities are principally responsible for fire service in Japan. However, a system of mutual support among fire services in Japan is complementarily needed to respond to emergency situations that exceed the firefighting capacities of the disaster-stricken area or the local prefecture. EFRTs are units dispatched from all over Japan to the disaster-stricken area in response to a request or instruction by the FDMA Commissioner. Their purpose is to assist in firefighting or provide support (hereafter referred to as “fire service support”) in cases when large-scale or special disasters have occurred and cannot be dealt with adequately by the firefighting capacities of the disaster-stricken area or the local prefecture.

EFRTs were established in June 1995, on the basis of lessons culled from the Great Hanshin Awaji Earthquake. They were legally instituted at the time of amendment of the Fire and Disaster Management Organization Act in June 2003. As of April 1, 2018, there are 5,978 registered teams from 725 Fire service Headquarters.1

The teams registered as EFRTs are engaged full-time in undertaking firefighting activities in their respective local areas; but in the event of a large-scale disaster, they are dispatched from all over Japan upon the request or instruction of the FDMA Commissioner to converge at the disaster-stricken area, where they will undertake firefighting activities together [2]. From their establishment up to September 2018, EFRTs have been deployed 38 times, including in response to the Great East Japan Earthquake.

In the United States, the Federal Emergency Management Agency (FEMA) coordinates a national network of 28 major fire services. At times of disasters the FEMA is authorized to request the wide-area dispatch of Urban Search and Rescue (USAR) teams, which undertake rescue activities under FEMA direction [3]. The chain of command and management method of activities at the disaster site are standardized on the basis of a management system called the Incident Command System (ICS) [4].

2.2. Legal Scheme of EFRT Deployment

In the Fire and Disaster Management Organization Act, the deployment scheme of the EFRT is set forth as follows:

1) A request by the FDMA Commissioner for fire service support to the prefectural governor or municipal mayor based on a request from the governor of the prefecture in which the disaster-stricken municipality exists (Items 1 and 4, Article 44)

2) A request by the FDMA Commissioner for fire service support to the prefectural governor or municipal mayor in cases that require urgency and cannot wait for a request from the governor of the prefecture in which the disaster-stricken municipality exists (Items 2 and 4, Article 44)

3) An instruction to dispatch EFRT by the FDMA Commissioner issued to the prefectural governor or municipal mayor in the event of a large-scale or special disaster (Item 5, Article 44)

In the cases of 1) and 2), when the FDMA Commissioner issues a “request,” the national government assumes, by exercising this authority, the role of coordinator to facilitate the functioning of mutual assistance or support between local governments. Although the local government has the duty to implement the necessary measures as long as there is no justifiable reason to do otherwise, the concrete decision regarding whether or not to dispatch EFRT rests on the concerned prefecture or municipality, for which the decision of the national government (FDMA Commissioner) merely provides a prior condition [5].

However, in the case of 3), when the FDMA Commissioner issues an “instruction,” the instructed party is legally bound to dispatch a unit to the disaster-stricken area. This stipulation was introduced with the intent of placing the primary responsibility of sending firefighting forces on the national government only in cases when the responses by 1) and 2) are inadequate for dealing with large-scale or special kinds of disasters, upon the premise that the local governments will perform their roles to the fullest extent. To fulfill this responsibility, it is necessary to ensure, under the government’s decision making, that the necessary measures will be executed. Hence, the

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1. The EFRT of each prefecture is composed of a brigade, which consists of divisions respectively charged with firefighting, rescue, emergency medical services, etc. Each division consists of several teams, to each of which is assigned a vehicle.
FDMA Commissioner, who is charged with firefighting activities in the nation, was given the authority to issue instructions to dispatch EFRTs [6].

The instruction is limited to being a “measure necessary for the dispatch of EFRT.” The EFRTs are not subject to further instructions from the FDMA Commissioner regarding their activities at the dispatched destinations. They are incorporated into the firefighting forces of the area in question, where they act under the direction of the mayor of the municipality receiving support. This is because the responsibility for firefighting activities continues to rest on the local bodies, while the objective of the national government’s involvement is to support the firefighting activities of the disaster-stricken area [7].

3. Issues of EFRT Identified with the Great East Japan Earthquake and Subsequent Response Measures

3.1. Status of EFRT Deployment Following the Great East Japan Earthquake

In the Great East Japan Earthquake, there were eight prefectures that experienced seismic intensities of six minus and above; the communications network was disrupted in several of them immediately after the earthquake (14:46, March 11, 2011). Meanwhile, tsunami warnings had been issued for an even wider area.

In response, the FDMA Commissioner issued dispatch instructions to the EFRTs of 20 prefectures at 15:40 on March 11, pursuant to Item 5, Article 44 of the Fire and Disaster Management Organization Act. This was the first time since the stipulation was written into law in 2003. Efforts were continued to collect further information, and further dispatch instructions were issued in succession as the severity of damage became apparent. Dispatch instructions were ultimately issued to the EFRTs of 44 prefectures, which covered all of Japan’s prefectures, except the Iwate, Miyagi, and Fukushima prefectures, which were the prefectures that suffered major damage from the disaster.

The EFRTs were dispatched for a period of 88 days, from March 11 to June 6, consisting of 8,854 teams (cumulative total of 31,166 teams) and 30,684 personnel (cumulative total of 109,919 personnel) [8].

It was the first time that reinforcement units from so many local governments in Japan engaged in activities in the disaster-stricken areas for an extended period in response to a large-scale, wide-area disaster that extended to several prefectures. Moreover, it was necessary to deal with a complex of disasters, including large-scale urban fires, petrochemical complex fires, nuclear power plant accidents, etc., in addition to the severe damage caused by the earthquake and tsunami.

3.2. Issues of EFRT and Response Measures

Described below are the issues identified through the dispatch of EFRTs following the Great East Japan Earthquake, which resulted in a wide-area and complex disaster, as well as the subsequent measures undertaken.

3.2.1. Intensive Deployment of Units Immediately After Disaster

The number of dispatched EFRTs reached a peak on March 18, seven days after the earthquake, at 1,870 teams (6,835 personnel), amounting to approximately 44% of the registered teams (4,264 teams, as of April 2010).

One of the reasons for the relatively low dispatch rate is that many of the prefectures surrounding Iwate, Miyagi, and Fukushima had also incurred some damage due to the earthquake or tsunami. They were able to dispatch only a limited number of units since they had to first ascertain the damage status or undertake response measures in their own areas immediately after the disaster. As a consequence, the dispatched units mainly consisted of those of distant prefectures, requiring more time for them to arrive at the disaster-stricken areas. If priority had been given to the severely damaged areas, from the standpoint of optimizing the nationwide allocation of units, it is possible that a greater number of units would have been deployed earlier on.

To “save as many lives as possible” in a large-scale wide-area disaster, it is important to undertake large-scale rescue activities at the earliest time possible in order for deployment to peak early on and mobilize a greater force. To this end, it was decided in the third-term plan (H26-30) of the Emergency Fire Response Team Basic Plan to drastically expand the EFRTs by setting a target of 6,000 registered teams for the end of FY2018 (from 4,694 teams as of April 2014) to strengthen the response capacity against the Nankai Trough Earthquake and similar disasters [9]. Furthermore, to intensively assemble the greatly expanded EFRTs to disaster-stricken areas speedily following a disaster, dispatch plans based on the estimated damage levels are being drawn up and drills based on these plans are being conducted.

3.2.2. Rapid Advancement of Units to Disaster-Stricken Areas

In addition to fact that the main body consisted of units from distant locations, the EFRTs required a lengthy period of time to arrive at the disaster-stricken areas because some of the roads had been severed by the disaster, and it required time to fuel the vehicles transporting the numerous units.

To rapidly dispatch the units to the disaster-stricken areas, it is necessary to secure the routes for advancement by setting up multiple and alternative paths, clearing and opening damaged roads, designating emergency traffic routes, collecting and sharing road information, etc. To this end, cooperation with the road authorities and police is being strengthened by joint drills, and advanced and diverse methods are being developed for information sharing with the units in transit.

Furthermore, in response to the lengthy time it took to refuel the large units during transit, each prefecture has
set up a Joint Task Force, to be dispatched at the earliest date ahead of the main unit. It is charged with engaging in highly urgent firefighting, rescue and emergency medical service activities, and collecting and supplying information that would be useful for the activities of the main unit arriving later.

In addition, major arterial roads, including freeways, are likely to be severed in the event of a large-scale earthquake such as the Nankai Trough Earthquake or the Tokyo Inland Earthquake, and thus it may not be possible to reach the disaster-stricken areas by land [10]. In such cases, it would be highly effective to transport EFRT personnel by aircraft to rescue activity bases in disaster-stricken areas, where they can engage in rescue activities using the supplies, equipment, fuel, etc., stocked in advance. For this purpose, cooperation with the Self Defense Forces and other relevant bodies is being strengthened regarding the use of aircraft and marine vessels, and rescue activity bases are being prepared and stocked with supplies, equipment, fuel, etc.

3.2.3. Flexible Response Against Complex Disasters

Although an instruction was issued to dispatch EFRTs to Iwate, Miyagi, and Fukushima prefectures immediately following the March 11 disaster, many of the dispatched units were successively relocated to deal with the subsequent northern Nagano prefecture earthquake (occurred before daybreak on March 12, seismic intensity 6+), eastern Shizukuoka prefecture earthquake (occurred on the night of March 15, seismic intensity 6+), the petrochemical complex fire at Ichihara city, Chiba prefecture, and the Fukushima Dai-ichi Nuclear Power Station (hereafter called Fuku-ichi) accident.

To respond to such complex disasters, it is necessary to coordinate the deployment of EFRTs in a flexible manner in response to changing situations. Since such coordination efforts will usually transcend prefectural boundaries, a system is being installed at the national level to enable accurate collection of information of disaster-stricken areas, while improved and diverse methods are being developed to facilitate information sharing among the national, prefectural, and municipal governments and between individual EFRTs.

3.2.4. Measures to Support Long-Term Activities

During the 88-day period in which the EFRT engaged in rescue activities, there were instances when they encountered difficulties in carrying out onsite activities due to weather conditions such as low temperatures and snowfall, severe environmental conditions such as the disruption of life-line services, and shortage of supplies and fuel because of the damage and destruction across an extensive region [11].

So far, efforts have been made to allocate the necessary vehicles to transport personnel, supplies/equipment, and fuel, and establish rescue activity bases, in addition to expanding the reserve units, to support large-scale activities over the long term. In addition to strengthening EFRT’s own logistical support capabilities, it is important to cooperate with the Self Defense Forces to secure fuel; therefore, efforts are being made to strengthen such cooperation by means of joint drills and by securing communication methods between units.

3.2.5. Measures to Deal with Nuclear Plant Accidents

Although the EFRTs dispatched to Fukushima prefecture from four prefectures were engaged in rescue activities and transportation of residents from the evacuation zones in response to the Fuku-ichi accident, they voluntarily withdrew from the 30 km zone that had been designated by the government as an “indoor refuge” zone because of the successive occurrences of hydrogen explosions. The prefectural air corps grew concerned that the equipment may have been exposed to radiation [12].

Meanwhile, cooling systems at Fuku-ichi had been disrupted because of the power loss due to earthquake (tsunami) damage, which made it urgent to inject water into the spent fuel pool. This was carried out by the Fire service Headquarters of six designated cities, including the Tokyo Fire Department.

Since successive hydrogen explosions had occurred, and this action would be conducted within the grounds of the nuclear power plant which carried high levels of radiation, the Prime Minister issued a dispatch request to the governor of Tokyo, while the Minister of Internal Affairs and Communications issued similar requests to the mayors of the concerned municipalities. In response, the FDMA Commissioner issued dispatch requests to the Fire service Headquarters of six designated cities, including the Tokyo Fire Department, under the Fire and Disaster Management Organization Act [13].

Incidentally, the long-term health status of fire department personnel who engaged in action at Fuku-ichi is being monitored by the national government. Furthermore, the helicopters deployed for EFRT duties were internally decontaminated during engine maintenance, at the government’s expense.

3.2.6. Coordination with Other Organs Operating Onsite

In addition to the EFRTs, the Self Defense Forces, Police, Japan Coast Guard, Disaster Medical Assistance Team (DMAT), and Technical Emergency Control Team (TEC-FORCE) conducted large-scale rescue activities in the disaster-stricken areas. Their activities were coordinated by the Prefectural Disaster Management Headquarters, while onsite joint command centers were set up to assign their respective areas of activities and share information, as a result of which cooperation went smoothly with regard to aircraft deployment, opening of roads, and...
transportation of personnel and vehicles, in addition to the onsite relief activities.

On the other hand, there were instances in which onsite information sharing and communication were insufficient, resulting in the overlapping of search areas or the existence of unsearched areas, due to insufficient advance coordination on their policies and range of activities [14].

Since such resources as manpower, supplies, and equipment are limited at the site of large-scale wide-area disasters, it is desirable to share information among the different organs and strengthen cooperation so that they can carry out the maximum level of rescue and search activities by making full use of their expertise. It is also extremely important for the different organs to cooperate to secure the transportation capacity, open up roads, and secure fuel for the large-scale, rapid deployment of units to the rescue sites.

Therefore, the relevant entities have been engaged in establishing the framework or rules of cooperation, securing the means of communication between units, and confirming the methods of information sharing, coordination, and communication through joint drills at the national, prefectural, and municipal/onsite levels.

4. Discussion on Desirable Approach to Wide-Area Command and Coordination

During times of large-scale disasters that affect multiple prefectures, such as the Great East Japan Earthquake, the EFRTs dispatched from many local governments in Japan will work at the disaster-stricken areas. The system of command and coordination at the national, prefectural, and municipal/onsite levels will greatly affect the performance of the EFRTs.

To resolve the issues that were identified from the Great East Japan Earthquake and prepare for national emergency disasters, it is essential to strengthen wide-area command and coordination functions in addition to the measures described in Section 3.

In this section, we review the existing mechanism for command and coordination of EFRT and the discussion that took place at the Fire and Disaster Management Council on how best to establish a system of wide-area command and coordination.

4.1. Existing Mechanism of EFRT Command and Coordination

In times of large-scale disasters, command and coordination of EFRTs take place on three levels: municipal/onsite, prefectural, and national.

At the municipal or onsite level, the deployed EFRT members are to “act under the direction of the head of the municipality that is receiving support” (Item 1, Article 47, Fire and Disaster Management Organization Act). However, it is also stipulated that the command and support team of the Fire service Headquarters of designated cities shall join the Disaster Management Headquarters of the municipality receiving support to assist the command and coordination activities of the head of that municipality. This stipulation is meant to address situations in which the local municipality has suffered extremely severe damage and is thus unable to adequately carry out command and coordination, and also in view of the fact that large-scale units must be operated and advanced equipment must be used at the disaster sites.

At the prefectural level, “in case there are two or more municipalities which have been affected by a disaster within the area of a single prefecture, and the EFRT has been dispatched to support firefighting activities, etc., the governor of the prefecture in question shall establish the Coordinating Headquarters for Fire Service Support Activities” (Item 2, Article 44, Fire and Disaster Management Organization Act). Such headquarters will be charged with overall coordination, including the determination of the municipalities at which activities are to take place, as well as contact with relevant organs such as the Self Defense Forces, police, and medical institutions. In this case, the general command and support team of the command and support unit is to join the Coordinating Headquarters, where it will assist the prefectural governor, who is the Headquarters director, and manage the EFRT’s activities in the disaster-stricken areas.

At the national level, when multiple prefectures have been struck by a disaster, the FDMA, after grasping the damage status and the possible scale of the EFRT to be dispatched, determines, for each disaster-stricken prefecture, which prefectures to issue a request or instruction to deploy its EFRT.

4.2. Discussion on Desirable Approach to Wide-Area Command and Coordination at the Fire and Disaster Management Council

At the 26th session of the Fire and Disaster Management Council, a discussion regarding the desirable system of wide-area command and coordination took place. This included the deployment of EFRT, dealing with earthquakes that exceed previously assumed levels, such as the Tokyo Inland Earthquake and the Nankai Trough Mega Earthquake, and improvements based on the lessons culled from the Great East Japan Earthquake, where the approach to wide-area command and coordination of the EFRTs was a major issue.

In this discussion, the following views were voiced from the standpoint of strengthening the national government’s command and coordination functions [15].

- Whether or not it is possible to transfer authority to the prefecture or national government depending on the scale of the disaster. In cases of large-scale disasters, the prefectural or national government (FDMA) will directly command the EFRT.

3. The command and support unit is transported by helicopter or by some other means to the disaster-stricken area (prefectural government office). It is charged with collecting disaster-related information and relaying it to the FDMA Commissioner and prefectural governor, and conducting support activities to facilitate command of the EFRTs in the disaster-stricken area.
5.1. EFRT Dispatch Plans for Nankai Trough Earthquake

It is expected that the Nankai Trough Earthquake will bring about extensive and severe damage, accompanied by a serious shortage of human and material resources, as well as a serious lack of information about the damage immediately following the earthquake. Therefore, it is essential that operating organs immediately take action, without waiting to assess the overall damage, and undertake disaster emergency measures and activities in a smooth and rapid manner, so as to minimize the damage [17].

To this end, the “Plan on concrete emergency measures and activities in the event of the Nankai Trough Earthquake” [18] (hereinafter called Concrete Plan) has been drawn up. It is premised on the Nankai Trough Mega Earthquake and sets forth the guidelines for deployment of units that will undertake disaster emergency measures and activities in response. It sets out concrete terms for the scale of their activities, emergency transport routes, methods to send in the units premised on traffic disruption, disaster management bases, coordination of activities among units, etc.

In the Concrete Plan, the basic policies for deploying units of operating organs have been set forth as follows.

- To rapidly deploy in the disaster-stricken areas the maximum level of relief forces, including units of the police, fire services, Self Defense Forces and Japan Coast Guard, DMAT, and TEC-FORCE, except for those units that are essential for national defense, maintenance of social order, and firefighting, and do the utmost to carry out disaster emergency measures and activities in which rescue efforts are the top priority.
- Relief forces are to be selectively deployed in areas where the damage is estimated to be particularly severe.
- To call on the Japanese people and companies and request their active understanding and cooperation to undertake local activities for crime prevention, disaster mitigation, fire prevention, and emergency measures, with the spirit of self- and mutual-help, in view of the fact that the police and fire services of areas other than the disaster-stricken areas will be doing their utmost to respond to the disaster-stricken areas.

Under these basic policies, the policies for EFRT dispatch are set forth as follows.

[EFRTs immediately dispatched]

- FDMA will instruct the immediate dispatch to regional advance bases of EFRTs in 18 prefectures that are not expected to suffer damage (Hokkaido, Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Tochigi, Gunma, Saitama, Niigata, Toyama, Ishikawa, Fukui, Tottori, Shimane, Saga, and Nagasaki).
- The maximum dispatch scale of the EFRTs from the 18 prefectures will be approximately 7,770 personnel and 1,930 teams (based on the number of registered teams as of April 2017). The regional advance bases and deployed areas are determined in advance for the units of each prefecture. However, a flexible response is to be taken depending on the damage status.

4. The Nankai Trough Mega Earthquake refers to a Nankai Trough Earthquake of the greatest scale based on the scientific estimation of the Investigative Committee on Nankai Trough Mega Earthquake Model.
5. The locally based units refer to police, fire services, and TEC-FORCE are expected to:

- FDMA will instruct the immediate dispatch to regional advance bases of EFRTs in 19 prefectures (Ibaraki, Chiba, Tokyo, Kanagawa, Yamanashi, Nagano, Gifu, Shiga, Kyoto, Osaka, Hyogo, Nara, Okayama, Hiroshima, Yamaguchi, Fukuoka, Kumamoto, Kagoshima, and Okinawa), which are located in areas in which damage is expected, but are not prefectures designated selectively to receive support (Shizuoka, Aichi, Mie, Wakayama, Tokushima, Kagawa, Ehime, Kochi, Oita, and Miyazaki), in case it is possible to dispatch their EFRTs to the designated prefectures to receive support after confirming the damage status in their respective prefectures.
- The maximum dispatch scale of the EFRTs from the 19 prefectures will be approximately 11,120 personnel and 2,800 teams (based on the number of registered teams as of April 2017). The regional advance bases and deployed areas are determined in advance for each prefecture. However, a flexible response is to be taken depending on the damage status.

Within the EFRT of each prefecture instructed to be dispatched, the Joint Task Force and command and support unit are to be dispatched within approximately an hour following the instruction, while the remaining units are to be dispatched as soon as they have assembled.

During this period, the Extreme Disaster Management Headquarters shall periodically provide to the relevant Ministries and Agencies information on the possibility of passage of the emergency transport routes, refueling, and other information necessary to dispatch wide-area relief forces, based on the latest damage status following the disaster, and collate and coordinate the dispatch guidelines of the respective units as needed.

Meanwhile, the locally based units\(^5\) and the relief units are expected to:

- secure the emergency transport routes (clearing debris, draining water, etc.), carry out traffic control when necessary, and share the associated information
- provide alternative means of transporting units, in particular, by using aircraft, premised on traffic disruption
- secure a fuel supply system that places priority on the dispatched relief units, provide mutual cooperation among units when necessary
- The relevant Ministries and Agencies are to share information that serve to facilitate effective rescue, emergency medical services, and firefighting activities (e.g., location of those in need of rescue, information useful for identifying missing persons, status of confirmed fuel supply, etc.) with the Extreme Disaster Management Headquarters, onsite government headquarters for disaster management, as well as the Prefectural and Municipal Disaster Management Headquarters, through activity coordination meetings.
- The units of the police, fire services, and Self Defense Forces working at the disaster site are to establish a joint coordination center as needed, to share information among, coordinate the activities of, and promote mutual cooperation if necessary among the units, with regard to the areas, contents, and procedures of their activities, and means of communication.

5.2. Plan Regarding Fire Service Support in the Event of Nuclear Emergency

Measures against nuclear emergencies are stipulated in the Basic Disaster Management Plan (items to be implemented respectively by the national government, local governments, and electric power companies) and Nuclear Emergency Response Guidelines (expert and technical items related to nuclear emergency response).

With regard to fire service support in the event of a nuclear emergency, the section on nuclear emergency management in the Basic Disaster Management Plan stipulates as follows [19].

- The local government is to conduct rescue and emergency medical service activities such as the transport of residents who are suspected of having been contaminated by or exposed to radiation to medical institutions specializing in radiation hazards, make efforts to grasp the damage status as soon as possible, and request assistance from the onsite headquarters for disaster management, other local governments, nuclear power plant operator, etc., as necessary.
- The national government (Fire and Disaster Management Agency) shall preferentially secure the means to transport radiation-contaminated and -exposed patients to a high-level radiation exposure medical support center and nuclear disaster medical care/general support center in case a request has been made by the Prefectural Disaster Management Headquarters or onsite headquarters for disaster management.
- When necessary, the national government (Fire and Disaster Management Agency) shall undertake measures to enable support activities conducted by the fire departments of local governments outside the area in which the nuclear emergency has occurred, and carry out overall coordination of firefighting activities.

Furthermore, the cooperation between the Extreme Disaster Management Headquarters and Nuclear Emergency Response Headquarters, with respect to relief activities by the organs operating onsite in case a complex

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5. The locally based units refer to police, fire services, and TEC-FORCE (Ministry of Land, Infrastructure, Transport and Tourism) units that are stationed in and deployed from the disaster-stricken areas.
disaster consisting of a natural disaster and nuclear emergency has occurred, is stipulated as follows.

- When it is difficult for the local government to coordinate transport for evacuation, the Nuclear Emergency Response Headquarters shall make a request to the Extreme Disaster Management Headquarters for the latter to unitarily coordinate transport activities.
- The Extreme Disaster Management Headquarters shall carry out overall coordination of resource allocation for disaster emergency measures undertaken by relevant operational organs (police forces, fire services, Japan Coast Guard, and Self Defense Forces). The Nuclear Emergency Response Headquarters, when it determines that cooperation of the operational organs is necessary, shall submit a request to this effect to the Extreme Disaster Management Headquarters.
- The Nuclear Emergency Response Headquarters shall draw up radiological protection measures (protective gear, equipment and supplies, work safety, etc.) for the personnel of operational organs engaged in the rescue of victims of natural disasters and others engaged in disaster management operations, and provide advice and assistance to the Extreme Disaster Management Headquarters.

Although concrete measures regarding evacuation and those in need of assistance are to be determined by the local disaster management plans or evacuation plans of the relevant local government, the national government is expected to provide assistance with measures that are difficult to carry out by the local government itself. It is for this purpose that local nuclear disaster management committees have been set up in the local areas of nuclear power plants. These committees, which enlist personnel from all relevant Ministries and Agencies and the relevant local government that draws up the plans, are charged with coordinating “emergency responses” for the local area, including the evacuation plans of the local governments.

It is also stipulated that, in the local “emergency responses,” a national-scale operational organ, such as the EFRT, is to provide support in case a request for assistance has been submitted with regard to measures that are difficult to implement at the local level, taking into consideration the various requests have been made by the relevant local government [20].


6.1. Items that Require Governmental Command and Coordination

To ensure the execution of the Concrete Plan or Basic Disaster Management Plan described in Section 5 in the event of the Nankai Trough Earthquake or nuclear emergencies, it is essential for the national government to assume responsibility and carry out command and coordination functions of the following items from a nationwide perspective.

6.1.1. Coordination with Originating Prefectures for Large-Scale, Emergency Dispatch of EFRTs

Although it is expected that a mega-disaster such as the Nankai Trough Earthquake will result in tremendous human and material damage, the human and material resources available for rescue activities are utterly inadequate. Thus, it is essential to dispatch the maximum level of EFRTs immediately following the earthquake, concentrating deployment to areas that are expected to suffer the greatest damage.

In the Nankai Trough Earthquake, it is expected that an extensive area that includes metropolitan areas will suffer damage. Many units of large-scale Fire service Headquarters will be caught up in dealing with disasters in their own areas, and thus may not be dispatched immediately to other prefectures. To mobilize as many units as possible in this situation, it is necessary to 1) immediately dispatch all registered units from areas that are not expected to receive damage, and 2) quickly dispatch as many units as possible from those areas that are expected to receive damage but are not prefectures selectively designated to receive support, leaving the minimum number of units necessary to respond to their own areas, in accordance with the Concrete Plan.

In case the registered units are all dispatched immediately after the disaster, the local governments that dispatch the EFRTs will need to take measures to secure their firefighting capacity by mobilizing off-duty and office personnel to secure manpower, allocating emergency vehicles, and cooperating with the local fire departments. Furthermore, in areas that have received some damage, the local government tasked with dispatching units will face a difficult decision as it tries to strike a balance between responding to their own damage and dispatching relief units. In such cases, the local government may decide to place a higher priority on local disaster response and retain a greater part of its EFRT. For this reason, it is necessary for the national government to assume responsibility for coordinating with the local governments regarding the scale and timing of the dispatched units from the standpoint of the optimal nationwide allocation of units.

Furthermore, during special disasters, such as a nuclear power plant accident, the national government will be expected to coordinate EFRT dispatch on the premise that it will assume responsibility for taking all possible safety measures and the local governments will have no concerns about health hazards among EFRT personnel.

6.1.2. Command and Coordination Regarding Transportation Methods and Routes for Rapid EFRT Deployment

To enable the dispatched units to arrive at the disaster-stricken areas as quickly as possible, the national govern-
ment is expected to collect information on the possibility of passage of emergency transportation routes or alternative routes for sections blocked due to damage, and relay this information to the dispatching prefectures or dispatched units. It is also necessary for the organs engaged in onsite operations to cooperate in opening up or draining water from damaged roads, designate emergency traffic routes, and secure the routes of advancement.

Furthermore, the transportation of EFRTs via air or sea routes will be useful in areas that have become difficult to reach quickly by land because of disrupted roads or inundation due to tsunamis. It will be necessary to coordinate the relevant Ministries and Agencies on the deployment of aircraft and marine vessels under the overall coordination of the Extreme Disaster Management Headquarters.

6.1.3. Coordination of Wide-Area Deployment of EFRT

Since it is expected that there will be a serious lack of information regarding the damage immediately following the Nankai Trough Earthquake, it will be important for EFRTs to be dispatched immediately, without waiting for an assessment of the overall damage, and initiate relief activities in the disaster-stricken areas as quickly as possible. To this end, the government has drawn up the “Emergency Fire Response Team Action Plan for the Nankai Trough Earthquake,” which assumes four scenarios for the estimated damage caused by the Nankai Trough Mega Earthquake, and sets forth, for each unit-dispatching prefecture, the prefectures to which the units are to be dispatched, the routes of advancement, and destinations for each scenario.

While the EFRTs of the prefectures are to be immediately dispatched following the earthquake according to the Action Plan, it will be necessary to respond flexibly in case the actual damage is different from that predicted. In such cases, the government will be expected to assess the damage status as accurately as possible and command and coordinate actions by modifying the dispatch destinations or transferring units across prefectural boundaries, depending on the status of the damage.

Furthermore, large-scale urban fires, petrochemical complex fires, or nuclear plant accidents may occur in addition to the earthquake and tsunami when a large-scale earthquake strikes. To mobilize the response against such complex disasters, it will be necessary for the government to form additional units or coordinate the transfer/relocation of units.

6.1.4. Coordination for Cooperation among the Organs Operating Onsite

Since it is expected that manpower, supplies, and equipment needed for search and rescue activities will be utterly inadequate in relation to the extent of damage during a massive disaster, it will be important for the respective organs operating onsite to cooperate closely so that search and rescue activities can be carried out with utmost efficiency and effectiveness, with each organ displaying their strong points. To this end, it is necessary to share information, coordinate activities, and achieve mutual cooperation among individual units on three levels: national, prefectural, and municipal/onsite.

To achieve cooperation at the national level, the Extreme Disaster Management Headquarters shall coordinate the relevant Ministries and Agencies with respect to the framework for national deployment of units based on the damage status, share information on the routes of advancement, secure emergency transportation routes, deploy aircraft and marine vessels for emergency transport of units, fuel supply, and so on.

In cases of special disasters such as a nuclear power plant accident, it will be necessary for the relevant Ministries and Agencies to share information on the units and capacities of equipment belonging to the respective onsite organs. Afterwards they must adopt disaster emergency measures that take advantage of the strengths of the respective organs, draw up guidelines on safety measures such as the radiation protection measures for personnel, and carry out overall coordination of resource allocation.

6.2. Need to Strengthen Command and Coordination Functions of the National Government

Command and coordination can involve operations carried out by onsite units, or take place in the form of logistical coordination such as determining guidelines for emergency measures, strategic resource allocation, coordination of local governments that dispatch units, transport of units, logistical support, etc. The items discussed in Section 6.1 all fall under logistical coordination at the national level.

Logistical coordination takes place among the national government, the local governments, both those receiving support and those dispatching units, the dispatched units, and other organs operating onsite, where the coordination across prefectural jurisdictions must be undertaken by the national government. In this case, since the government does not directly intervene in the command structure within units, the authors feel that the opinion of the Fire and Disaster Management Council described in Section 4.2, that government coordination is difficult to achieve because the government does not directly control the units operating onsite, does not necessarily hold.

The government (FDMA) is required to develop its command and coordination capacity by improving methods of information collection and sharing, setting up multiple channels for this, drawing up advance plans, and conducting practical drills, to smoothly carry out command and coordination. In addition to such operational improvements, the authors feel that the government’s responsibility should be clarified in relation to logistical coordination at the national level, and that a dialogue should take place on institutionally strengthening the government’s command and coordination functions by imparting a certain level of command and coordination authority to the government, from the standpoint of ensuring the
smooth implementation of such logistical coordination.

7. Discussion on Institutional Measures Aimed at Strengthening the Government’s Command and Coordination Functions

7.1. Institutional Measures Aimed at Strengthening the Government’s Command and Coordination Functions

The following institutional measures can be considered to clarify the government’s responsibility and strengthen its command and coordination functions with regard to the nationwide logistical coordination of EFRTs in times of national emergency disasters.


The affairs conducted by local governments can be classified into clerical works and statutory-entrusted functions. The latter are defined as “functions that by nature should be carried out by the national government, and which the national government deems it necessary to specifically ensure their proper execution by stipulating as such by a law or cabinet order” (No. 1, Item 9, Article 2, Local Autonomy Law), so that their execution is always mandatory by law or cabinet order, and is subject to strong intervention by the government, such as by a “correction instruction.” Meanwhile, the clerical works of the local government are defined as “those functions carried out by the local government other than the statutory entrusted functions” (Item 8, Article 2, Local Autonomy Law).

As stated in Section 2.2, the FDMA Commissioner is given the authority to issue instructions to dispatch EFRTs in the event of large-scale disasters or extremely special kinds of disasters, the intent of which is to place the primary responsibility of sending firefighting forces on the national government. Yet, the functions of the prefecture or municipality carried out in response to an instruction to dispatch EFRTs are all classified as “clerical works of the local government.”

Although these functions related to EFRT dispatch constitute “functions that by nature should be carried out by the national government,” which is the primary requirement of statutory entrusted functions as stipulated in No. 1, Item 9, Article 2, Local Autonomy Law, the above classification is adopted for the following reasons.

- Once an instruction is issued, it is expected that the local government that receives the instruction will take it very seriously and execute the necessary measures quickly and smoothly.
- There is little meaning for the government to get involved with the specifics of execution of functions in the disaster-stricken areas.

As such, these functions are considered to fall outside of those “which the national government deems it necessary to specifically ensure their proper execution,” and thus do not specifically require the force associated with statutory entrusted functions [21].

Meanwhile, the Act concerning the Measures for Civil Protection in Armed Attack Situations, etc. (hereafter called “Civil Protection Act”) stipulates that the FDMA Commissioner is given the authority to issue an instruction to the prefectural governor or municipal mayor with regard to fire service support when an armed attack situation occurs (Article 119). The FDMA Commissioner is given the authority to issue instructions because it is considered necessary to implement the utmost measures as a nation in an armed attack situation, and because the national government is considered to play the principal role in dealing with an armed attack situation and similar incidents [22].

The functions to be carried out by the local governments based on the Civil Protection Act are those that by nature should be carried out by the national government, for which proper execution needs to be ensured by the national government, and are thus classified as statutory entrusted functions [23]. Thus, the fire service support measures implemented by the prefectural governor or municipal mayor based on the FDMA Commissioner’s instruction are classified as statutory entrusted functions.

The dispatch of EFRTs in the event of a national emergency disaster, such as the Nankai Trough Earthquake or nuclear emergency, substantially goes beyond the framework of “complementing the principle of municipal-centered fire service.” It is something for which the national government should play the principal role from a national perspective. The functions related to the dispatch of EFRT, which can be considered a matter of national policy, satisfy the two requirements of statutory entrusted functions as described below.

First, as stated earlier, EFRT dispatch based on the FDMA Commissioner’s instruction constitutes a “function that by nature should be carried out by the national government,” which is the primary requirement of a statutory entrusted function. It is clear that EFRT dispatch in the event of a national emergency disaster, in which the national government must play the principal role, satisfies this requirement.

Next, as discussed in Section 6.1, to carry out large-scale, emergency deployment of EFRT in the event of a national emergency disaster, the national government must, in issuing instructions, assume responsibility for coordinating with the dispatching prefectures regarding the scale and timing of dispatch. Furthermore, once the instructions have been issued, the national government is expected to be at the forefront to carry out command and coordination to secure transportation methods and routes, transfer units across prefectural boundaries, and facilitate cooperation among the various organs operating onsite. Thus, these functions are considered to be those “which proper execution needs to be specifically ensured by the national government,” which is the second requirement of
a statutory entrusted function.

Since the functions related to the dispatch of EFRTs in the event of a national emergency disaster satisfy the requirements of statutory entrusted functions, we feel that a dialogue should take place on whether to classify them as statutory entrusted functions, like fire service support measures based on the Civil Protection Act, so as to clarify the responsibility of the national government and strengthen its involvement with respect to command and coordination.

7.1.2. Extension of Scope of Instruction Issued by the National Government

Under the current laws, the instruction issued by the FDMA Commissioner is limited to being a “measure regarding the dispatch” of EFRTs, while the dispatched EFRTs are to act under the direction of the head of the municipality receiving support (Item 1, Article 47, Fire and Disaster Management Organization Act). Meanwhile, command and coordination at the prefectural level are conducted by the Coordinating Headquarters for Fire Service Support Activities established by the prefectural governor, and involves overall coordination of the fire service support activities carried out in that prefecture, and also serves as a liaison with the relevant organs, such as the Self Defense Forces, police, and medical institutions (No. 2, Article 44, Fire and Disaster Management Organization Act).

Yet, in a national emergency disaster, after issuing instructions to dispatch EFRTs, the national government must direct the selection and/or revision of transportation methods and routes depending on the damage status, determine emergency transport routes, and direct the use of aircraft and marine vessels, securement of fuel, etc., and coordinate the EFRTs with the other organs operating on-site to rapidly deploy the units to the disaster-stricken areas. Furthermore, with regard to activities at the disaster site, coordination and decision-making regarding the framework and procedure of the EFRT’s cooperation with other organs onsite, measures against special disasters, and guidelines on safety measures for EFRT personnel must take place at the national level.

Thus, we feel that the issue needs to be examined. It is a question of imparting a certain degree of authority to the national government (FDMA Commissioner), allowing it to direct EFRTs over their entire operation with regard to not only their dispatch but also their advancement/transfer, onsite activities, and logistical support, so that the government’s command and coordination functions can be implemented smoothly.

In this case, it will be necessary to limit the scope of the government’s instruction to the transport and transfer of EFRTs across prefectural boundaries, basic response guidelines, and cooperation with other onsite organs, so that it will not overlap with the directions of the mayors of the municipalities receiving support, or the overall coordination efforts of the Coordinating Headquarters for Fire Service Support Activities.

With this, the FDMA Commissioner’s instruction with regard to fire service support, as set forth in Article 119 of the Civil Protection Act, covers “not only units registered as Emergency Fire Response Teams but also units composed of personnel and facilities connected to the fire services of all prefectures and municipalities, since it will be necessary to conduct wide-area operations of the entire firefighting capacity of the nation in an armed attack situation” [24].

Meanwhile, in the event of a national emergency disaster, the fire services of disaster-stricken areas are expected to channel their entire resources toward firefighting in the areas over which they have jurisdiction, so that the FDMA Commissioner’s instruction should properly be limited to EFRTs, also to maintain consistency with the direction of the mayor of the municipality receiving support and the overall coordination efforts of the Coordinating Headquarters for Fire Service Support Activities.

7.1.3. Placement of Command and Support Unit Under Direct Government Control and Concurrent Appointment of Their Members as Government Employees

If the scope of the national government’s (FDMA Commissioner’s) instruction is to be extended, as proposed in Section 7.1.2, it will be necessary for the government to closely cooperate with the prefectures and municipalities to ensure the potency of governmental command and coordination, or the consistency of command and coordination among the respective administrative levels. In this respect, the command and support unit that will join the Coordinating Headquarters for Fire Service Support Activities set up in the disaster-stricken prefectures and carry out logistical coordination between the national, prefectural, and municipal governments, the dispatched EFRTs, and other organs operating onsite will play an important role.

In this regard, Nobuyasu Kubo, the former FDMA Commissioner who instructed the dispatch of EFRTs following the Great East Japan Earthquake, notes that “the United States Federal Emergency Management Agency has a system of temporarily hiring officers (on-call personnel) of the fire departments of New York City and other cities in times of emergency,” has proposed “1) placing the command and support unit, which are currently served by the fire departments of large metropolises, under direct control of the Fire and Disaster Management Agency, and 2) considering the concurrent appointment of dispatched EFRT personnel to government employees during the dispatched period since such dispatch is a matter of national policy, since the extra expenses involved in dispatching EFRTs based on the instruction of the Commissioner of the Fire and Disaster Management Agency are to be paid by the government under current laws” [25].

We feel that placing the command and support unit, which perform a crucial role in facilitating cooperation among the national, prefectural, and municipal governments, and the dispatched units, under direct government
control, or the concurrent appointment of members of the command and support unit to government employees during the dispatch period, is an important issue that needs to be examined to ensure the potency of the government’s command and coordination functions.

Meanwhile, Shobu Takami, a former official of the Tokyo Fire Department, is critical of such proposals, stating that “Crisis management is an extension of (management of) disasters during normal times. Only when there exist experience in disaster activities, training, unit deployment plans, operational planning, strategy, commander competency, and human ties between the squad commander and members during normal times, is it possible to achieve smooth functioning of the activities of fire squads, in terms of the chain of command, information, communication, etc. It is rash thinking to expect units to act as planned based on the ranking, authority, instruction, and orders of the commanding officer, and it does not display (an understanding of) the basics of disaster response activities” [26].

However, as long as governmental command and coordination are limited to the dispatch of EFRTs and their logistical coordination, such as the transport or transfer of EFRTs across prefectural boundaries, basic response guidelines, and cooperation with other organs operating onsite, they should not interfere with the command chain within units. Thus, we feel that “governmental command and coordination” and “intra-unit command system” are not conflicting items.

While proposals have also been made to place the entire EFRT force under direct governmental control or to concurrently appoint all dispatched personnel to government employees, this would entail a radical modification of the current framework based on the principle of a municipal-centered fire service. We thus feel that it would be more realistic at this juncture to restrict the discussion to the command and support unit, which are necessary for smooth execution of a nationwide logistical coordination.

7.2. Requirements to Institutionally Strengthen the Government’s Command and Coordination Functions

The institutional measures discussed in the previous section all constitute exceptions to the current framework based on the principle of municipal-centered fire service, and must be applied only when it is essential for the government to take command and carry out coordination.

As stated in Section 2.2, the FDMA Commissioner is given the authority to instruct the dispatch of EFRTs only when there is a special necessity to deal with a large-scale disaster that affects two or more prefectures or special kinds of disasters, such as that resulting from the release of toxic substances (Item 5, Article 44, Fire and Disaster Management Organization Act). Yet, the requirement must be made more stringent if the national government’s authority is to be strengthened.

In this regard, we feel that it would be suitable to make the occurrence of a national emergency disaster, such as a Declaration of Disaster Emergency State (Article 105, Disaster Countermeasures Basic Act) or a Declaration of a Nuclear Emergency Situation (Article 15, Act on Special Measures Concerning Nuclear Emergency Preparedness), as the requirement.

7.3. Effect of Institutional Measures

The following effects can be expected if the three measures proposed in Section 7.1 are adopted. These will also contribute to resolving the issues identified from the Great East Japan Earthquake described in Section 3.2.

- With the “(1) Reclassification of fire service support at times of national emergency disasters to statutory entrusted function,” the government’s responsibility will be clarified and its command and coordination authority regarding the dispatch of EFRTs will be strengthened. This should facilitate the intensive deployment of units immediately following the disaster, coordination of EFRT deployment over a wide area, and coordination of dispatching local governments in the mobile response to complex disasters.
- With the “(2) Extension of scope of instruction issued by the national government,” the government’s command and coordination authority over the entire range of EFRT activities will be strengthened, allowing it to be at the forefront to carry out command and coordination regarding the transportation methods and routes to the disaster-stricken areas, response guidelines against special disasters such as nuclear emergencies, and cooperation with the various organs operating onsite.
- With the “(3) Placement of command and support unit under direct government control and concurrent appointment of members as government employees,” the government’s command and coordination authority will be strengthened in prefectures in which the EFRTs are dispatched, which will facilitate the transfer of EFRTs across prefectural boundaries, coordination with prefectures to which the units are dispatched regarding the securement of fuel, etc., and coordination with other organs operating onsite regarding the guidelines of mutual cooperation among units at the prefectural level.

8. Conclusions

The institutional measures discussed in Section 7.1, if adopted, will all strengthen the government’s authority over EFRT operations; these will be necessary when discussing their adoption to pay sufficient consideration to achieving consistency with the issue of decentralization of power. However, to save as many lives as possible in the event of a national emergency disaster which could constitute a national crisis, it is necessary for EFRTs of the greatest scale to rapidly and accurately respond according to the situation, for which the most pressing issue is to institutionally strengthen the government’s command and coordination. Therefore, based on the principles and guidelines discussed in Section 7.1, it is necessary to further strengthen the authority of the central government to instruct the dispatch of EFRTs.
coordination functions in addition to improving the operational aspect.

It is the authors’ hope that the government, together with relevant organizations, will conduct an examination to consider strengthening its command and coordination functions related to EFRTs, including a system of remuneration. Our goal will have been accomplished if this paper can contribute in this endeavor.

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