# Chapter 7 Response Specific to the Nuclear Disaster

On March 11, 2011, the nuclear reactors of Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station (hereinafter referred to as "Fukushima Daiichi NPS") lost their cooling function, increasing the possibility of radioactive materials leaking into the surrounding area, and in response the national government declared a nuclear emergency on the basis of the Act on Special Measures Concerning Nuclear Emergency Preparedness (Act No. 156 of 1999, hereinafter referred to as the "Nuclear Emergency Preparedness Act") and issued an "evacuation order" for residents within a 3-km radius of the Fukushima Daiichi NPS and a "shelter-in-place order" for residents within a 3- to 10-km radius. The area included in the evacuation order was expanded in stages to reflect the development of the accident and the amount of radiation released, and by April of the same year, no-entry zones, planned evacuation zones, and emergency evacuation preparation zones had been set up in 12 cities, towns, and villages[1] in Fukushima Prefecture.

After the nuclear reactors were placed in a cold shutdown state in December 2011, a review of the areas under evacuation orders was initiated based on domestic and international scientific findings and assessments regarding low-dose radiation exposure in order to improve the environment for residents to return to their homes and to promote reconstruction and revitalization of the region. Based on the situation in each of the 12 affected municipalities in Fukushima Prefecture, the areas under evacuation orders were reviewed sequentially, the no-entry zone designation was lifted, and the areas under evacuation orders were reorganized as the difficult-to-return zone, restricted residential areas, and areas under preparation for lifting evacuation orders by August 2013.

In parallel with the establishment of the areas under evacuation orders, decontamination was also implemented to quickly reduce the impact of radioactive materials released into the environment on human health and the living environment along with compensation for victims of the TEPCO Fukushima Daiichi NPS accident.

To address decontamination, the Act on Special Measures Concerning the Handling of Environmental Contamination by Radioactive Materials Discharged from the Accident at a Nuclear Power Station Caused by the Tohoku-Pacific Ocean Earthquake that Occurred on March 11, 2011 (Act No. 110 of 2011, hereinafter referred to as the "Act on Special Measures Concerning Radioactive Contamination") was enacted in August 2011. In December of the same year, the Ministry of the Environment (hereinafter referred to as "MOE") designated "special decontamination areas"[2] for decontamination by the national government, and in the same month and again in February 2012, MOE designated "intensive contamination survey area"[3] in which to survey the state of decontamination conducted by municipalities, based on the Act on Special Measures Concerning Radioactive Contamination. Full-scale decontamination began in January of the same year, and decontamination was completed in special decontamination areas excluding difficult-to-return zones by March 2017, and in intensive contamination survey area by March 2018. The removed soil, etc. generated as a result of decontamination in Fukushima Prefecture and the specified waste, etc. exceeding 100,000 Bq/kg that is being stored in Fukushima Prefecture are to be safely and centrally managed and stored at interim storage facilities



[1] Tamura City, Minamisoma City, Kawamata Town, Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village and Iitate Village
[2] Areas that have been designated as no-entry zones or planned evacuation zones
[3] Areas other than special decontamination areas that have been designated by the government as areas where decontamination plans are formulated and decontamination projects are carried out by the municipalities involved

established in Okuma Town and Futaba Town until final disposal outside of Fukushima Prefecture. Removed soil, etc., including that originating in the specified reconstruction and revitalization bases area (SRRBA), began to be moved to interim storage facilities in 2015, and as of December 2022, approximately 13.38 million $m^3$ of removed soil, etc. (including that from the difficult-to-return zone)[4] had been moved.

In nuclear damage compensation, the Committee for the Review of Disputes over Compensation for Nuclear Accidents established under the Ministry of Education, Culture, Sports, Science and Technology in accordance with the Act on Compensation for Nuclear Damage has adopted the guideline of providing compensation to victims in stages, beginning with those who are highly likely to have suffered nuclear damage, in order to provide prompt relief to victims, and in August 2011, the "Interim Guidelines on the Determination of the Scope of Nuclear Damage Caused by the Accident at TEPCO Fukushima Daiichi and Daini Nuclear Power Stations" were drawn up, followed by Supplements up to the Fifth Supplement in March of 2023.

As the decontamination made progress, the initial lifting of evacuation orders was made in Tamura-City in April 2014, followed by Kawauchi Village in October 2014 and Naraha Town in September 2015, and by March of 2020, evaluation orders had been lifted in all areas except for the difficult-to-return zone.

In areas where evacuation orders have already been lifted, the living environment is being improved through measures such as the Fukushima Revitalization Acceleration Grants and the Project for Improvement of the Fukushima Living Environment and Accelerated Rehabilitation of Returned Residents.

In addition, as decided in December 2013 in "Toward Accelerating Fukushima's Reconstruction from the Nuclear Disaster" (Cabinet Decision of December 20, 2013), the government decided not only to expand support for those returning home, but also to prepare support measures for residents who are leaving their hometowns to start new lives. Specifically, for residents of difficult-to-return zones, etc., where evacuation orders remain in effect and the inability to return home has been prolonged, it was decided to provide additional compensation to cover the costs of starting a new life at a temporary or permanent relocation site, and to ensure the presence of living bases outside of towns and development of reconstruction bases within towns.

To address the handling of the difficult-to-return zones, the Nuclear Emergency Response Headquarters and Reconstruction Promotion Council released "Approach to Handling Difficult-to-Return Zones" in August 2016. Based on this concept, the Act on Special Measures for the Reconstruction and Revitalization of Fukushima (Act No. 25 of 2012)[5] was amended in May 2017 to allow municipalities to establish specified reconstruction and revitalization bases areas (SRRBAs) within difficult-to-return zones as areas where residents can aim to return after evacuation orders are lifted. Following amendment of the law, "Plans for Areas Designated as Specified Reconstruction and Revitalization Base Areas" were formulated in six towns and villages that had been designated as difficult-to-return zones (Futaba Town, Okuma Town, Namie Town, Tomioka Town, Iitate Village, and Katsurao Village), and decontamination and infrastructure development within these SRRBAs is underway. SRRBA evacuation orders were lifted for Katsurao Village and Okuma Town in June 2022 and for Futaba Town in August of the same year.



[4] Including those in the difficult-to-return zone

[5] Enacted in 2012 to promote smooth and rapid recovery from the Great East Japan Earthquake and contribute to the revitalization of Japan by establishing and promoting special measures for the reconstruction and revitalization of Fukushima, taking into account the special circumstances of Fukushima, which had suffered serious and enormous damage from the nuclear disaster. Amended in 2013, 2015, 2017, 2020, and 2022.

For the area outside the SRRBA, in December 2020, the Nuclear Emergency Response Headquarters announced the "Lifting of Evacuation Orders for Land Use Outside of the Specific Reconstruction and Revitalization Bases Area" and presented a mechanism for lifting of evacuation orders that can be applied only to land use other than for ordinary living purposes. In August 2021, the 30th Reconstruction Promotion Council and the 55th Nuclear Emergency Response Headquarters Conference jointly decided on the "Approach to the Lifting of Evacuation Orders for Return to and Resettlement in the Area outside the Specific Reconstruction and Revitalization Bases Area." Based on this decision, it was decided to make efforts to enable residents who intend to return to their homes to do so over the course of the 2020s by decontaminating the areas necessary for their return and promoting the lifting of evacuation orders after carefully ascertaining their individual intentions regarding such return, and in February 2023, a bill to amend the Act on Special Measures for the Reconstruction and Revitalization of Fukushima was submitted to the Diet to create a system that would allow the establishment of "specified living areas for returnees (SLAR)" in the area outside the SRRBAs with the aim of enabling the return of residents upon lifting of evacuation orders and the reconstruction of their lives after their return.

Furthermore, in June 2014, in order to promote the recovery of industry and employment that was lost in the Hamadori region of Fukushima and other areas because of the Great East Japan Earthquake and nuclear disaster, the government released a report on the "Fukushima Innovation Coast Framework", which aims to build a new industrial base and exchange points in the Hamadori region of Fukushima and other areas affected by the nuclear disaster. Subsequently, with the amendment of the Act on Special Measures for the Reconstruction and Revitalization of Fukushima enacted in May 2017, promotion of the "Fukushima Innovation Coast Framework" was enshrined in law, and in July of the same year, the Fukushima Innovation Coast Framework Promotion Organization was established. Based on this concept, the Fukushima Robot Test Field and the Fukushima Hydrogen Energy Research Field were fully opened in March 2020.

In December 2020, the Reconstruction Promotion Council decided to establish an international education and research center as the "core center for creative reconstruction" to further develop the Fukushima Innovation Coast Framework, and in May 2022, an act for partial revision of Act on Special Measures for the Reconstruction and Revitalization of Fukushima was passed to establish the Fukushima Institute for Research, Education and Innovation (F-REI).

In order to help business operators affected by the nuclear disaster rebuild their businesses and livelihoods, a "Joint Public-Private Fukushima Soso Region Reconstruction Team" (hereinafter referred to as the "Joint Public-Private Team") consisting of the national government, Fukushima Prefecture, and the private sector (Fukushima Soso Reconstruction Promotion Organization) was formed on August 24, 2015, based on the revised "Toward Accelerating Fukushima's Reconstruction from the Nuclear Disaster" (Cabinet Decision of June 12, 2015). Through individual visits to affected businesses, the Public-Private Joint Team is providing expert consulting and support for capital investment, securing human resources, and developing sales channels.

In response to the fact that reputational damage has become a major issue in the reconstruction and revitalization from the nuclear disaster, a "Task Force on Countermeasures for the Effects of the Nuclear Disaster, including Reputational Damage" was established in March 2013 by the relevant ministries and agencies to review the past efforts, identify issues, and discuss how to strengthen rumor countermeasures. As a result of concerted government efforts, by March 2023, 43 of the 55 countries and regions that had implemented import restrictions in response to the nuclear power station accident had

abolished the restrictions and 11 had eased their restrictions.[6]

As described above, in the 11 years since the accident at TEPCO Fukushima Daiichi NPS, reconstruction and revitalization efforts in the disaster-affected area have made steady progress, but evacuation orders are still in effect in most of the difficult-to-return zones, and approximately 27,000 people from the entire Fukushima region are still living as evacuees (as of March 2023). According to the "Opinion Survey of Residents of Areas under Evacuation Orders due to the Nuclear Disaster in Fukushima Prefecture" (FY 2021), in Futaba Town and Okuma Town, where the Fukushima Daiichi NPS is located, and Tomioka Town and Namie Town, which are adjacent to both towns to the north and south, the percentage of residents who responded that they "will not return" is 50 to 60%, while the percentage of residents who responded that they "want to return" is only about 10%. In fact, the occupancy rate tends to be lower in areas where the lifting of evacuation orders took time than in areas where the evacuation order was lifted relatively early on.

Reconstruction and revitalization of Fukushima will require a mid-and-long-term response, and while the national government will continue to take the initiative in the second reconstruction/revitalization period and beyond, the government and TEPCO should each take responsibility for the roles they are expected to play under the "Basic Guidelines for Accelerating the Reconstruction of Fukushima from the Nuclear Disaster" (Cabinet Decision of December 20, 2016). In the future, in addition to reconstructing areas where evacuation orders have been lifted, the government will need to provide support to residents who continue to be evacuees, and make other efforts toward full-scale reconstruction and revitalization, while carefully responding to new issues and the diverse needs that arise as the stage of reconstruction progresses. Specifically, in addition to attending to matters common to all earthquake- and tsunami-damaged areas, the government will continue to promote the following efforts while taking into account the actual conditions and special characteristics of each region.

- Measures for the decommissioning of TEPCO Fukushima Daiichi NPS and the handling of contaminated water and treated water
- Development, management and operation of interim storage facility
- Final disposal outside the prefecture of soil, etc. removed from Fukushima Prefecture within 30 years after the start of interim storage
- Improvement of living environment in areas where evacuation orders have been lifted
- Support for long-term evacuees
- Development of specified reconstruction and revitalization bases area (SRRBA)
- Efforts to lift evacuation orders in area outside the SRRBA
- Promotion of Fukushima Innovation Coast Framework
- Rebuilding of businesses, agriculture, forestry, and fisheries
- Efforts to eliminate harmful rumors
- Promotion of migration and settlement of new residents; expansion of exchange population and related population
- Establishment of Fukushima Institute for Research, Education and Innovation (F-REI) as a "core center for creative reconstruction", etc.



[6] The 27 EU countries and the UK had been counted as one region since they established import restrictions as one after the accident, but because the EU announced deregulation and the EU and the UK adopted different regulatory measures from September 20, 2021 onward, the UK has been accounted for separately in the data since that date.

# Section 1 Overview of the Accident at TEPCO Fukushima Daiichi Nuclear Power Station

## 1. Overview of the accident [7]

When the Great East Japan Earthquake struck, Units 1 through 3 of TEPCO Fukushima Daiichi NPS were all automatically shut down, and emergency diesel generators were activated to ensure power supply. However, the tsunami that reached the power station about an hour after the quake inundated a large area of the power station, causing loss of functionality in many facilities, including the emergency diesel generators, power panels, and seawater pumps for cooling, resulting in the loss of all AC power in Units 1 through 5. Therefore, at 15:42, TEPCO notified the Nuclear and Industrial Safety Agency that an event specified under Article 10 of the Nuclear Emergency Preparedness Act ("loss of all AC power") had occurred. Furthermore, because the cooling function had been lost in Units 1 and 2, TEPCO notified the Nuclear and Industrial Safety Agency again at 16:45 to report the occurrence of an event specified under Article 15 of the Nuclear Emergency Preparedness Act ("emergency core cooling system water injection failure"). In response to these reports, the government declared a nuclear emergency based on the Nuclear Emergency Preparedness Act at 19:03 and established the Nuclear Emergency Response Headquarters (headed by the Prime Minister) and the Local Nuclear Emergency Response Headquarters (headed by the State Minister of Economy, Trade and Industry).

In Units 1-3, the loss of the cooling function caused the water level in the reactor pressure vessel to drop, exposing the reactor core and resulting in core damage and fuel meltdown. It is assumed that the reaction between the molten fuel and the concrete of the floor generated water vapor, and that the metal covering the surface of the fuel reacted with the water and vapor, generating a large amount of hydrogen, which filled the building. As a result, from March 12 to 15, explosions that appeared to be hydrogen explosions occurred in the reactor buildings of Unit 1, Unit 3, and Unit 4, which shared some piping with Unit 3. These explosions badly damaged the building and caused a massive release of radioactive materials such as iodine-131, cesium-134, and cesium-137.

Radioactive materials released into the air were scattered by the wind and eventually fell to the ground in rain, causing high levels of contamination in a strip of land extending northwest from TEPCO Fukushima Daiichi NPS.

Thus, a situation arose that required action both onsite at TEPCO Fukushima Daiichi NPS, where the accident occurred, and offsite. The accident has been provisionally rated on the International Nuclear and Radiological Event Scale (INES) as Level 7 (major accident), the same rating given to the accident at the Chernobyl Nuclear Power Plant in the former Soviet Union.



[7] Quoted from the 2020 White Paper on Nuclear Energy

## 2. Returning to normal after the accident

### (1) Efforts to decommission TEPCO Fukushima Daiichi NPS

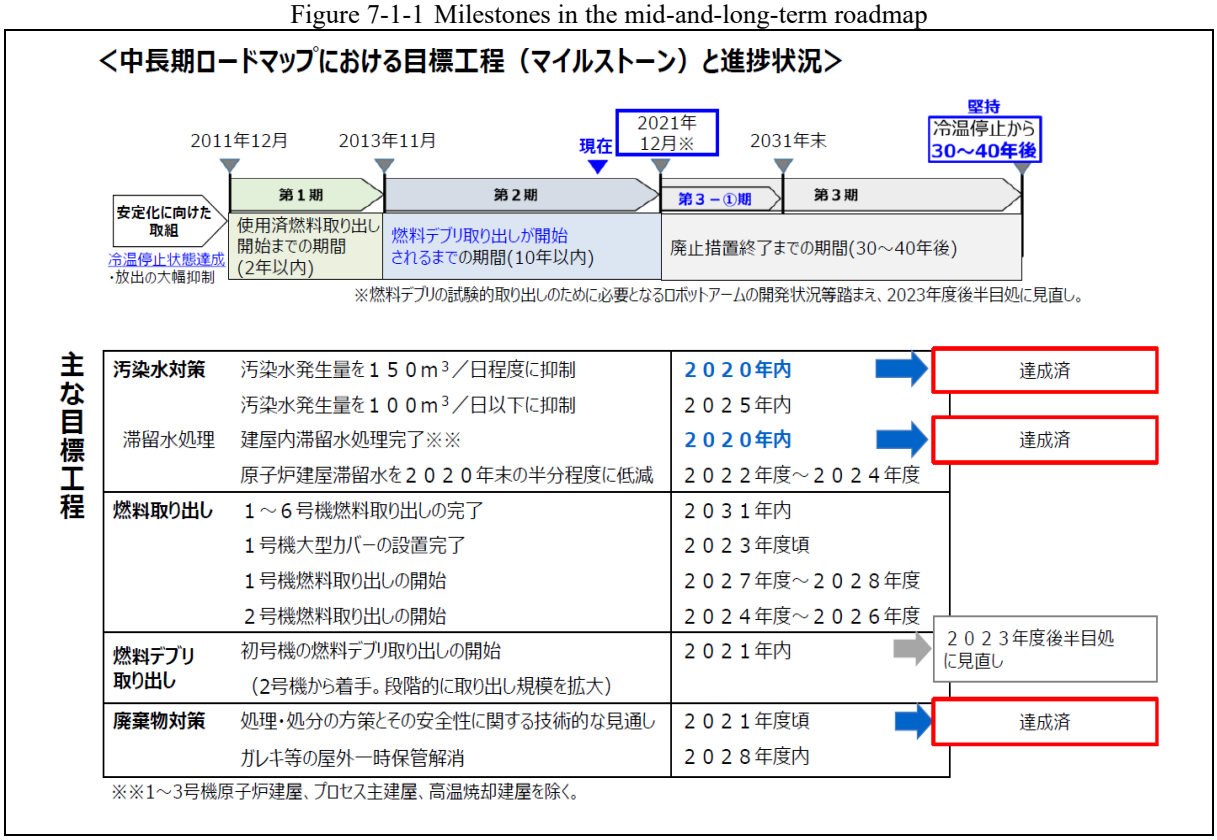
#### 1) "Mid-and-long-term roadmap" for decommissioning of TEPCO Fukushima Daiichi NPS

In December 2011, the reactors involved in the accident achieved cold shutdown status, and on December 21, 2011, the "Mid-and-long-term roadmap for decommissioning of TEPCO Fukushima NPS Units 1-4" was formulated at the TEPCO mid-and-long-term response conference. The roadmap divides the main work of decommissioning into three phases: Phase I, "until the start of spent fuel retrieval (within 2 years)"; Phase II, "until the start of fuel debris retrieval (within 10 years)"; and Phase III, "until the end of decommissioning (in 30 to 40 years' time).

Since then, based on the roadmap, work on contaminated water measures, fuel retrieval from the spent fuel pool, fuel debris retrieval, and other operations has been carried out while giving consideration to safety. In addition, to meet the needs of the decommissioned site over the mid- to long term, knowledge from overseas is incorporated to promote R&D and human resource development at research institutes and other organizations.

The roadmap has been revised five times (July 2012, June 2013, June 2015, September 2017, and December 2019) by the Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning Issues, based on the progress of decommissioning and contaminated water measures and the opinions of local residents and others.

Figure 7-1-1 Milestones in the mid-and-long-term roadmap




Source) Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry

### 2) Measures for contaminated water and treated water, handling of ALPS treated water

Various measures for dealing with contaminated water and treated water are being implemented in a complex manner, and the amount of contaminated water generated has been significantly curbed, while purification treatment for water pooled in the building is being systematically promoted. In September 2016, a “Subcommittee on the Handling of Treated Water with the Advanced Liquid Processing System (ALPS), etc.” was established under the Committee on Measures for Contaminated Water Treatment, following which the subcommittee continued to study the handling of water purified by the Advanced Liquid Processing System (ALPS treated water). In response to a February 2020 report in which the ALPS Subcommittee evaluated the feasibility and reliability of ocean discharge of ALPS treated water, the government decided in April 2021 that ALPS treated water should be discharged to the ocean on the condition that safety could be ensured and rumor countermeasures could be thoroughly implemented. Preparations are underway for facilities, etc., and for dealing with the effects of rumors in Japan and abroad, in preparation for the start of ocean discharge in the spring or summer of 2023.

### 3) Fuel retrieval from spent fuel pool

The fuel stored in the spent fuel pools at the time of the accident was to be retrieved from the pools of each unit and stored in the common pool on site. Fuel retrieval from the spent fuel pools was completed for Unit 4 in December 2014 and for Unit 3 in February 2021. Methods have been adopted as a result of the study of various conditions, including the state of the reactor building and the dust dispersion control, and for Unit 1, a large cover will be installed over the building before proceeding with debris removal, while for Unit 2, the building will be accessed from the south side without dismantling. Spent fuel removal is to begin in Unit 1 between FY 2027 and FY 2028 and in Unit 2 between FY 2024 to FY 2026, and work is proceeding toward completion of all spent fuel removal from Units 1 through 6 by the end of 2031.

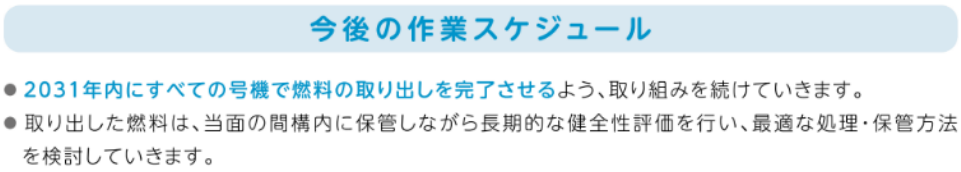
### 4) Retrieval of fuel debris

Since the accident, fluoroscopic studies have been conducted using cosmic rays (muons) with strong penetrating power and remotely operated robots to determine the distribution of fuel debris and obtain information that will confirm access routes to fuel debris, as well as information that will contribute to judging the safety of the construction work. Based on the information obtained from these internal investigations, the plan is to start trial retrieval of fuel debris from Unit 2 first, and then to expand the scale of retrieval in stages while analyzing the properties of the retrieved fuel debris, etc., and the development of a robot arm for retrieving fuel debris is underway in cooperation with the UK, with the aim of starting trial retrieval in the latter half of FY 2023.

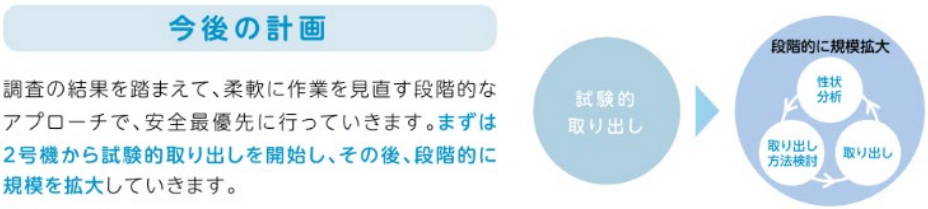
Figure 7-1-2 Efforts to decommission TEPCO Fukushima Daiichi NPS

廃炉の大切な話 2021

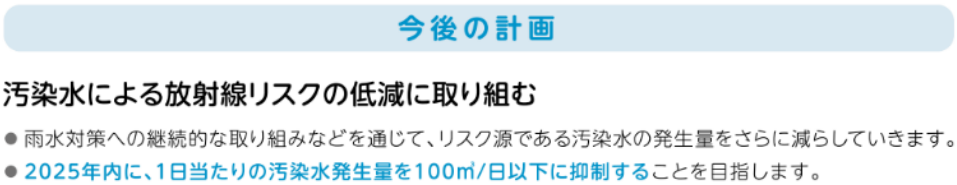

燃料取り出し



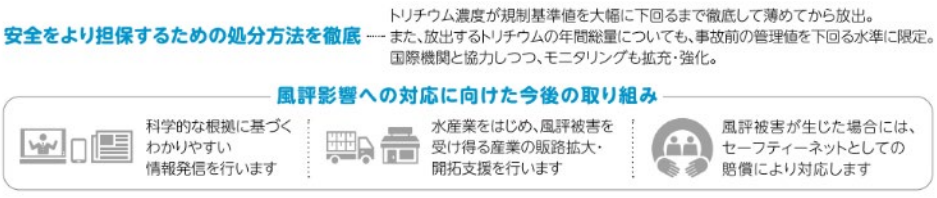

燃料デブリ取り出し




汚染水対策




ALPS 処理水




Source) "Important Talk on Decommissioning 2021," Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry
https://www.meti.go.jp/earthquake/nuclear/hairo_osensui/images/pamph2021.pdf (browsed November 15, 2022)

## (2) Ensuring the health and safety of nuclear power plant workers

At TEPCO Fukushima Daiichi NPS, measures to reduce radiation have been promoted through pavement construction on the site around the buildings, etc., and as of 2018, it was possible to work in ordinary work clothes on 96% of the premises.

Furthermore, measures are being implemented to reduce the workload during operations by making equipment lighter. In a worker survey conducted in 2022, more than 89% of respondents rated the safety of their workplaces as “safe” or “fairly safe,” indicating that the working environment is improving.

In addition, in light of the spread of Covid in Japan since 2020, TEPCO Fukushima Daiichi NPS has taken measures to prevent the spread of infection, such as conducting temperature checks before work, ensuring that all employees wear masks, and staggering the schedule for the use of rest areas to avoid the three Cs: closed spaces, crowds, and close contact.

### 1) Revising the Regulation on Prevention of Ionizing Radiation Hazards, formulating guidelines, and directing compliance with the Regulation and guidelines

At the time of the accident at TEPCO Fukushima Daiichi NPS, it was necessary to implement emergency measures to prevent the spread of the nuclear disaster, and in March 2011, the Ministerial Ordinance on Special Exceptions to the Regulation on Prevention of Ionizing Radiation Hazards came into effect, unavoidably raising the exposure limit during emergency work (until December 2011).

Since then, the Regulation on Prevention of Ionizing Radiation Hazards has been revised several times, and the following items have been stipulated: submission of individual health examination forms to the Minister of Health, Labor and Welfare for designated emergency work, etc., measures to prevent contamination by accident-derived radioactive materials, health examination for occupationally exposed persons engaged in emergency work, special emergency exposure limits, etc. In August 2015, “Guidelines for Safety and Health Management Measures at TEPCO Fukushima Daiichi Nuclear Power Station,” was formulated, and based on these guidelines, guidance is provided to TEPCO and related companies to strengthen safety and health management systems.

### 2) Strengthening measures to reduce radiation exposure during decommissioning work at Fukushima Daiichi NPS

In order to strengthen measures to reduce radiation exposure of workers engaged in decommissioning and other work at TEPCO Fukushima Daiichi NPS, training for work supervisors and other personnel has been conducted since FY 2016.

### 3) Strengthening international dissemination of radiation-related information on TEPCO Fukushima Daiichi NPS workers, etc.

In order to disseminate accurate radiation-related information on TEPCO Fukushima Daiichi NPS workers to international organizations, etc., the MHLW has been operating an English version of its website and conducting tours of the Fukushima Daiichi NPS for foreign media, etc. since FY 2013.

#### 4) Establishment of health support consultation service for TEPCO Fukushima Daiichi NPS workers, etc.

Since July 2016, a health support consultation service for workers involved in decommissioning, etc. has been established to accept-related questions from workers and advise business operators about health support for workers. In addition, the health support consultation service conducts training sessions and other activities related to industrial health support for workers and industrial health staff.

#### 5) Long-term health management and epidemiological studies of emergency workers at TEPCO Fukushima Daiichi NPS

For the emergency workers who dealt with the accident at TEPCO Fukushima Daiichi NPS (approximately 20,000 people), a database has been established to accumulate information on radiation doses and health examinations, based on the "Guidelines for the Maintenance and Promotion of the Health of Emergency Workers at Nuclear Facilities, etc." This database is being used to ensure the long-term health management of emergency workers through health counseling, cancer screenings based on radiation doses, and other services.

In order to investigate the health effects of radiation on emergency workers, an epidemiological study of emergency workers has been conducted since 2014.

### (3) Verifying accidents, etc.[8]

After the accident, the "Investigation Committee on the Accident at the Fukushima Nuclear Power Stations of Tokyo Electric Power Company" (hereinafter referred to as the "Government Investigation Committee") was established by the government, The "Fukushima Nuclear Accident Investigation Committee" (hereinafter referred to as the "TEPCO Investigation Committee") was established by TEPCO, the Independent Investigation Commission on the Fukushima Daiichi Nuclear Accident (hereinafter referred to as the "Private Sector Investigation Commission") was established, the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission (hereinafter referred to as the "National Diet Investigation Commission") was established by the Diet, and the Investigation Committee on the Nuclear Accidents at the Fukushima Daiichi Nuclear Power Station (hereinafter referred to as the "AESJ Investigation Committee") was established by the Atomic Energy Society of Japan, and the respective committees analyzed the cause of the accident and its background and summarized their proposals and the issues in reports (Figure 7-1-3).

In the reports by the Government Investigation Committee, TEPCO Investigation Committee, and Private Sector Investigation Commission, the direct cause of the accident was attributed to the loss of all AC and DC power sources caused by the tsunami and the loss of stable cooling functions for the reactors. On the other hand, the report of the National Diet Investigation Commission suggests that critical equipment may have been damaged not only by the tsunami but also by the earthquake, and the report of the AESJ Investigation Committee also indicates the need for an assessment of the effects of the earthquake on the integrity of major safety equipment. Common to all of the reports of the investigation committees were the findings that the environment for investigation and analysis was inadequate owing to the restricted access to areas with high radiation levels, mainly inside the reactor buildings, and that



[8] Quoted from the 2020 White Paper on Nuclear Energy

investigation of the direct cause of the accident remains an important issue.

All four of the reports except for the report of the TEPCO Investigation Committee found that there were major problems with the countermeasures against earthquakes, tsunamis, severe accidents, and multiple disasters that had been in place on the part of both the government and TEPCO prior to the accident. The National Diet Investigation Commission stated that the role reversal that had developed between the authorities, which should have been playing the regulatory role, and TEPCO, which should have been the party being regulated, had resulted in the collapse of nuclear safety monitoring and supervisory functions, and the Committee concluded that "this accident was not a 'natural disaster' but a 'man-made disaster.'" The Government Investigation Committee also pointed out that "the fundamental problem lies in the fact that both the electric power companies, including TEPCO, and the government were so caught up in the safety myth that a serious severe accident such as a core meltdown could not occur at a nuclear power plant in Japan, that they failed to see the crisis as something real that could happen in their immediate vicinity." On the other hand, the TEPCO Investigation Committee states that the severity of the tsunami had been underestimated, and that "inadequate preparation against tsunamis was the root cause of this accident."

Figure 7-1-3 Report of the Accident Investigation Committee

**表 3　事故直後に公表された主な事故調査委員会の概要（設置時期順）**

| | |
|---|---|
| 政府事故調 | |
| 設置時期：2011 年 5 月 24 日 | 報告書提出時期：2012 年 7 月 23 日 |
| 報告書名：東京電力福島原子力発電所における事故調査・検証委員会最終報告 | |
| 提言や課題の概要：<br>7 項目 25 の提言（①安全対策・防災対策の基本的視点、②原発の安全対策、③原子力災害に対応する態勢、④被害の防止・軽減策、⑤国際的調和、⑥関係機関の在り方、⑦継続的な原因解明・被害の全容調査の実施） | |
| 東電事故調 | |
| 設置時期：2011 年 6 月 11 日 | 報告書提出時期：2012 年 6 月 20 日 |
| 報告書名：福島原子力事故調査報告書 | |
| 提言や課題の概要：<br>（設備面）徹底した津波対策、電源喪失を前提とした炉心損傷防止機能の確保、炉心損傷後の影響緩和策等。<br>（運用面）①緊急時対応態勢の確立、②事故情報の伝達・共有手段の改善、迅速かつ正確な情報公開、③資機材輸送に関する取決め、④放射線管理教育の強化、内部被ばく評価方法の整備等。<br>（国等に対して）①津波などの外的事象の基準策定と国による審査の実施、②国が保有する津波データの利用等。 | |
| 民間事故調 | |
| 設置時期：2011 年 9 月末 | 報告書提出時期：2012 年 2 月 27 日 |
| 報告書名：福島原発事故独立検証委員会調査・検証報告書 | |
| 提言や課題の概要：<br>独立性と専門性のある安全規制機関、米国の連邦緊急事態管理庁に匹敵するような過酷な災害・事故に対する本格的実行部隊、首相に適切な助言を行う独立した科学技術評価機関（機能）の創設等の必要性を指摘。 | |
| 国会事故調 | |
| 設置時期：2011 年 12 月 8 日 | 報告書提出時期：2012 年 7 月 5 日 |
| 報告書名：東京電力福島原子力発電所事故調査委員会報告書 | |
| 提言や課題の概要：<br>7 つの提言（①規制当局に対する国会の監視、②政府の危機管理体制の見直し、③被災住民に対する政府の対応、④電気事業者の監視（国会による監視を含む）、⑤新しい規制組織の要件、⑥原子力法規制の見直し、⑦独立調査委員会の活用） | |
| 学会事故調 | |
| 設置時期：2012 年 6 月 22 日 | 報告書提出時期：2014 年 3 月 8 日 |
| 報告書名：福島第一原子力発電所事故その全貌と明日に向けた提言ー学会事故調　最終報告書ー | |
| 提言や課題の概要：<br>5 分類 50 項目の提言（①原子力安全の基本的な事項、②直接要因に関する事項、③背後要因のうち組織的なものに関する事項、④共通的な事項、⑤今後の復興に関する事項） | |

（出典）各報告書等に基づき作成

Source) Atomic Energy Commission, Cabinet Office, Government of Japan, "2020 White Paper on Nuclear Energy" (July 2021), p. 20.
http://www.aec.go.jp/jicst/NC/about/hakusho/hakusho2021/tokusyu_1.pdf (browsed November 15, 2022)