

Guidelines on occupational safety and health management at the TEPCO Fukushima Daiichi Nuclear Power Plant

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Part 1 Purposes

- 1 Enhancement of occupational safety and health management systems through the unified effort of Tokyo Electric Power Company Holdings and principal employers

In pursuing the decommissioning work etc. for the TEPCO Fukushima Daiichi Nuclear Power Plant (hereinafter referred to as “power plant”) in a steady manner, for the purpose of ensuring the safety and health of workers engaging in the work, safety management, exposure management, and healthcare etc. need to be thoroughly ensured on the basis of the cycle of planning, enforcement, evaluation and improvement. In addition, with the aim of establishing an appropriate safety and health management system, safety and health management by not only Tokyo Electric Power Company Holdings but also the employers directly undertaking rendering services pertaining to Tokyo Electric Power Company Holdings (hereinafter referred to as “principal employers”) is indispensable, but also, as regards the implementation of exposure management etc., the power plant as the principal entity of implementing radiation works and various works in the premises of the relevant power plant, the Head Office of Tokyo Electric Power Company Holdings and Fukushima Daiichi Decontamination and Decommissioning Engineering Company implementing the support works etc. of the power plant (hereinafter referred to as “TEPCO Head Office etc.”) need to fulfill their respective roles. Therefore, under the primary responsibility of Tokyo Electric Power Company Holdings, it is required to establish a safety and health management system which clarifies the implementation items of the TEPCO Head Office etc., the power plant and the principal employers.

- 2 Improvement of labor safety and health standards by means of implementation of risk assessment and promotion of safety and health

education etc. by Tokyo Electric Power Company Holdings, principal employers and relevant subcontractors

As decommissioning works etc. differ depending on the work contents and surroundings, the power plant, principal employers and the subcontractors (including the contractors as the relevant parties to all work contracts subsequent to the work contract of the relevant subcontractors if the work of the power plant or the principal employers is implemented under a series of work contracts; hereinafter referred to as “relevant subcontractors”) each need to implement risk assessment under the primary responsibility of the Tokyo Electric Power Company Holdings, where risk reduction measures are to be determined after the dangers and hazards are identified, the risks are estimated, and the priorities are specified, and to implement industrial accident prevention measures based on such results.

Furthermore, as the growth of the total number of workers is limited when compared with the newly employed workers of around 500 people entering the premises of the power plant each month, it can be assumed that the number of people almost equivalent to that number of new entrants leave the power plant each month. For this reason, it is required to strengthen the education about exposure reduction measures for operation leader of relevant subcontractors and the work planners of the principal employers as well as to promote safety and health education for new entrants etc.

3 Implementation of centralized exposure dose management and consideration as well as implementation of effective exposure reduction measures from the ordering stage

As regards the management of radiation exposure dose, it is required to systematically manage exposure dose information of all workers in the premises of the power plant and to implement radiation management with the utmost attention.

Additionally, in order to reduce exposure dose associated with work by each order unit in the power plant, the Order Department of Tokyo Electric Power Company Holdings needs to consider the basic concept of construction methods concerning the engineering methods, equipment, facilities and construction machines etc. from the work ordering stage, and to incorporate it in the Construction Plan as an exposure reduction specification. Moreover, the power plant and the principal employers are required to incorporate the measures based on the exposure reduction specification in the Construction Plan as a radiation management plan. Furthermore, according to the work contents at the stage of implementing work, it is required to implement the matters specified in the radiation management plan appropriately, and to

adequately implement the measures concerning work management such as work time reduction and wearing of shielding protective clothing according to the work contents.

4 Implementation of appropriate healthcare, establishment of an emergency medical service system, and improvement of work environment

For the purpose of the healthcare of workers, it is required to pursue the implementation of legally mandated medical examinations and follow-up measures based on such medical examinations, as well as to promote daily healthcare and heatstroke measures in an appropriate manner. In combination with such measures, on the basis of the “Guidelines on Maintaining and Improving Health of Emergency Workers at the TEPCO Fukushima Daiichi Nuclear Power Plant” (5th Public Notice on October 11, 2011. It is scheduled to be revised on April 1, 2016 as “Guidelines on Maintaining and Improving Health of Emergency Workers at the Nuclear Facilities”; hereinafter referred to as the “Ministerial Guidelines”), it is required to appropriately implement long-term healthcare for those engaged in emergency work in the power plant.

Moreover, in preparation for occupational injury and diseases, it is required to establish an emergency medical service system within the premises of the power plant, and to strengthen the system for quickly transporting affected workers to an appropriate medical institution.

Furthermore, in order to pursue improvement of the work environment for decommissioning work etc., it is required to pursue the improvement of resting areas and food service facilities, elimination and isolation of contaminated radiation sources, and the optimization of protective equipment.

Part 2 Subjects

The subjects of these Guidelines shall be the radiation works and various construction works implemented within the premises of the power plant.

Part 3 Establishment of a safety and health management system

1 Matters that should be conducted by Tokyo Electric Power Company Holdings
As regards the safety and health management concerning the radiation works and various works within the premises of the power plant, on the basis

of the Industrial Safety and Health Act and the Ordinance on Prevention of Ionizing Radiation Hazards (hereinafter referred to as “Ionizing Radiation Hazards Ordinance”), each employer is obligated to implement such management, and, as regards the radiation works and various works conducted by Tokyo Electric Power Company Holdings itself, if workers of some employers are engaged in such works at the same place under a series of work contracts, the chief of the power plant (hereinafter referred to as “General Manager of the power plant”) shall provide instructions and support so that the measures taken by the relevant subcontractors as employers will be correctly implemented, and conduct the following matters so that the safety and health management across the entire scope of the radiation works and various works will be adequately implemented.

(1) Assignment of a general safety and health manager for the power plant

The General Manager of the power plant shall assign a general safety and health manager for the power plant, and direct the person to implement the matters listed in (3) to (7) below so that the safety and health management across the entire scope of the radiation works and various works within the premises of the power plant will be adequately implemented.

Meanwhile, when Tokyo Electric Power Company Holdings does not conduct relevant works and places orders to the principal employers for the radiation works and various works which involve only ordering work and design management, the General Manager of the power plant shall, in view of the peculiarities of the radiation works and various works, direct the general safety and health manager to implement the matters listed in (4), (6) and (7) of 1 below in close cooperation and coordination with the principal employers. In such a case, as regards the Safety and Health Coordinating Meeting described in (4) of 1, the subject shall be all principal employers concerned.

Additionally, when Tokyo Electric Power Company Holdings places orders for the works it does not conduct by itself to multiple principal employers at the same place, it shall appoint a person who supervises and implements the matters listed in 2 among the relevant principal employers.

(2) Assignment of a manager for safe construction work

The General Manager of the power plant shall assign a chief manager for safe construction work who will be in charge of ensuring the safety of various works within the premises of the power plant, and shall direct such person to assist the general safety and health manager and to manage the technical matters among the matters listed in (3) to (5) below. In addition,

the General Manager of the power plant shall direct the manager for safe construction work to supervise the persons in charge of various works in the power plant, and, when particularly dangerous work is to be conducted, in addition to construction supervision and exposure management, shall direct the chief manager for safe construction work to provide required instructions on on-site safety assurance measures at the time of construction supervision by the persons in charge of the construction work. Meanwhile, the General Manager of the power plant shall direct the persons in charge who belong to safety and health management divisions as well as those belonging to radiation management and disaster recovery-related divisions to be actively involved in the construction management.

- (3) Assignment etc. of persons belonging to relevant subcontractors who perform the duties of safety and health management

The relevant subcontractors shall be requested to appoint persons who perform the duties of safety and health management, and to direct such persons to conduct the matters listed below:

- (a) Establish contact with the general safety and health manager.
- (b) Coordinate with the general safety and health manager so that, among the matters listed in (4) to (6) below, those matters concerning the relevant relevant subcontractors will be implemented in a facilitated manner.
- (c) Establish contact and coordinate in work intervals with all the relevant subcontractors when the relevant subcontractors have given a part of their contracted works to other subcontractors.

- (4) Holding etc. of a safety and health coordinating meeting with the participation of all relevant subcontractors engaged in radiation works and various works

- (a) The General Manager of the power plant shall launch a Safety and Health Coordinating Meeting with the participation of all relevant subcontractors, and hold it regularly at least once a month, where he or she shall request the participation of the general safety and health manager, the manager for safe construction work, and the persons of the relevant subcontractors who perform the duties of

safety and health management.

(b) The matters that should be discussed in the Safety and Health Coordinating Meeting shall be as shown below:

- Establish contact and coordination among the TEPCO Head Office etc., power plant and each of the relevant subcontractors
- Implement working environment measurements concerning external radiation dose and concentration of radioactive substances in the air, and implement precautions for work on the basis of such results
- Improve safety ensuring measures for various works done at close proximity beyond the individual contractual relationship, such as promotion of information sharing and cooperation, cause analysis of industrial accidents, and promotion of countermeasures to prevent their recurrence
- Provide safety and health education such as special education etc., including the matters concerning radiation works
- Formulate or improve the work plan (including the matters concerning exposure management for workers and the measures to reduce the radiation dose received by workers; the same applies hereinafter)
- Unify signals and alarms etc. during radiation works and various works
- Matters concerning evacuation and other measures when an accident has occurred

(5) Instruction or support for preparing of a work plan etc.

(a) As regards the work plan formulated by the relevant subcontractor, in addition to the provision of appropriate materials and information, the relevant subcontractor shall be instructed or supported, as needed, so that the contents will be appropriate.

(b) Confirm in advance the contents of the work plan concerning, among the works conducted by the relevant subcontractor, the work where the effective dose could exceed 1 mSv per day.

(c) In making the confirmation as described in (b), the division for radiation management of Tokyo Electric Power Company Holdings shall selectively confirm the exposure management method, and,

when needed, give instruction or support on the improvement etc. of the work plan.

- (d) Direct the relevant subcontractor to make work plans known to workers.

- (6) Confirmation of exposure situations etc.

The matters listed in Part 5-1 shall be implemented.

- (7) Investigation (risk assessment) of the dangers or hazards etc. involved in radiation works or various works, and implementation of measures based on such results as well as safety and health education

The matters listed in Part 4 shall be implemented.

2 Matters that should be implemented by the principal employers

As regards the safety and health management concerning the radiation works and various works in the premises of the power plant, on the basis of the Industrial Safety and Health Act and the Ionizing Radiation Hazards Ordinance, each employer is obligated to implement such management, and, as regards the radiation works and various works conducted by Tokyo Electric Power Company Holdings itself if workers of two or more employers are engaged in such works at the same place under a series of work contracts, the principal employers shall provide instructions and support so that the measures taken by the relevant subcontractors as employers will be correctly implemented, and conduct the following matters so that the safety and health management concerning the radiation works and various works will be adequately implemented.

- (1) Assignment of a general safety and health manager by the principal employers

The principal employers shall assign a general safety and health manager (or an overall safety and health controller as provided for in Article 15 of the Industrial Safety and Health Act in the case of a project pertaining to a construction industry of a certain scale; same as below) from those persons who supervise and manage the works, and, in coordination and collaboration with the manager for safe construction work and the general safety and health manager appointed by Tokyo Electric Power Company Holdings as described in 1(1) and (2), shall give direction to implement the matters listed in (2) to (6) below so that the safety and health management concerning radiation works and various works will be appropriately

conducted.

(2) Assignment of persons who perform the duties of safety and health management from the relevant subcontractor

The relevant subcontractor shall be requested to assign a person who performs the duties of safety and health management (or an overall safety and health controller as provided for in Article 16 of the Industrial Safety and Health Act in the case of a project pertaining to a construction industry of a certain scale; the same applies hereinafter), and to direct the person to implement the matters listed below:

(a) Establish contact with the general safety and health managers of the principal employers.

(b) Coordinate with the general safety and health managers of the principal employers so that, among the matters listed in (3) to (5) below, those matters concerning the relevant subcontractors will be implemented in a facilitated manner.

(c) Contact and coordinate in work intervals with all the relevant subcontractors when the relevant subcontractor has given a part of its contracted works to other subcontractors.

(3) Holding etc. of a Safety and Health Coordinating Meeting with the participation of all relevant subcontractors

(a) In coordination and collaboration with the Safety and Health Coordinating Meeting held by Tokyo Electric Power Company Holdings as provided for in 1(4) above, a safety and health coordinating meeting shall be launched with the participation of all relevant subcontractors, and it shall be held regularly; at least once in less than a month.

(b) The matters that should be discussed in the Safety and Health Coordinating Meeting shall be as shown below:

- Radiation exposure management
- Improve safety ensuring measures for various works done at close proximity beyond the individual contractual relationship, such as promotion of information sharing and cooperation, cause analysis of industrial accidents, and promotion of countermeasures to

prevent their recurrence

- Provide safety and health education such as special education etc., including the matters concerning radiation works
- Formulate of improve the work plan
- Unify signals and alarms etc. during radiation works and various works
- Matters concerning evacuation and other measures when an accident has occurred

(4) Instruction or support for the formulation of a work plan etc.

(a) As regards the work plan formulated by the relevant subcontractor, the relevant subcontractors shall be instructed or supported, as needed, so that the contents will be appropriate.

(b) In addition to the confirmation in advance of the contents of the work plan concerning, among the works conducted by the relevant subcontractor, the work where the effective dose could exceed 1 mSv per day, on the basis of Part 8-4, report the radiation works to the Chief of the Tomioka Labour Standards Inspection Office.

(c) Direct the relevant subcontractor to make work plans known to its own workers.

(5) Confirmation of exposure situations etc.

Those listed in Part 5-2 shall be implemented.

(6) Implementation of risk assessment concerning radiation works and various works as well as the measures based on such risk assessment, and provision of safety and health education

Those listed in Part 4 shall be implemented.

Part 4 Implementation of risk assessment as well as the measures based on such risk assessment, and provision etc. of safety and health education

1 Implementation of risk assessment as well as the measures based on such risk assessment

Tokyo Electric Power Company Holdings and the principal employers shall carry out risk assessment of radiation works or various construction works

according to the instruction noted in 2, for the works conducted by the relevant subcontractors which contracted all or a part of the works that were to be conducted by their own workers, and shall implement the measures on the basis of such risk assessment.

Meanwhile, Tokyo Electric Power Company Holdings shall, when it places an order for the work it does not conduct by itself, provide support for the appropriate implementation of the risk assessment carried out by the principal employers and the relevant subcontractors and measures based on the results of such risk assessment with the participation of the persons in charge of construction works etc.

2 Points to note with regard to the implementation of risk assessment

- (1) Tokyo Electric Power Company Holdings and the principal employers shall investigate the dangers or hazards etc. caused by the buildings, equipment, raw materials, gas, vapor, dust etc. or working activities and other business, and, on the basis of the results, implement the measures prescribed by laws and regulations, as well as measures required to prevent workers from dangers or health impairment.
- (2) When the Construction Plan as described in Part 6-2(1) is formulated, the risk assessment concerned shall be implemented at the formulation stage of the plan without fail, and also at the timings shown below. Meanwhile, as regards the works conducted already without any risk assessment, the risk assessment shall be carried out whenever possible.
 - (a) When a building is established, relocated, altered or dismantled.
 - (b) When equipment or raw materials etc. are newly adopted or altered.
 - (c) When the method of work or work procedure is newly adopted or altered.
 - (d) Or, such as in the cases listed below, when a change has occurred or is liable to occur as regards dangers or hazards, etc., due to buildings, equipment, raw materials, gas, vapor, dust, etc., and those arising from work actions and other works
 - (i) When occupational injuries and diseases have occurred, and if there is any problem concerning the contents of the past investigations etc.

(ii) When, after the expiration of a certain period from the previous investigation etc., there occurs aging degradation of machine equipment etc., a change in the knowledge/experience concerning the safety and health of workers in association with the replacement of workers etc., or new accumulation of knowledge etc. concerning safety and health.

(3) In carrying out risk assessment, the following matters shall be noted:

(a) There may be cases when radiation exposure reduction measures (wearing a protective mask, limiting the working hours etc.) impede the implementation of measures to reduce dangers or hazards due to factors other than radiation. (Example: narrowing of the visual field and increased occurrence risk of heatstroke caused by wearing a protective mask, increased transit time and occurrence risk of heatstroke due to physical load caused by wearing shielding protective clothing, and the time for keeping things tidy and in order cannot be secured due to shortened working time, and so on) Therefore, optimal measures need to be taken so that radiation exposure reduction measures and other danger or health impairment prevention measures may be compatible with one another.

(b) As regards other measures based on risk assessment and the results, these shall be implemented in accordance with the “Guidelines on Investigation etc. for Dangers or Hazards etc.” (Public Notice No. 1 on March 10, 2006).

3 Provision of safety and health education etc.

The General Manager of the power plant and the principal employers shall provide education prescribed in (1) to (3) for their workers, and give required instructions or supports so that the relevant subcontractors can provide such education appropriately. In particular, the General Manager of the power plant shall give supports in the form of dispatching lecturers and providing educational materials and education facilities etc.

(1) Provision of education for new entrants

In addition to the contents of the special education as provided for in Article 52-7 of the Ionizing Radiation Hazards Ordinance, education shall be provided for new entrants on the basis of the peculiarities of the works within the premises of the power plant as shown below for those who are

newly engaged in the work within the premises of the power plant.

- (a) Performance and handling methods of protective equipment such as protective masks (including appropriate instruction on wearing procedures by using the fit tester etc. for respiratory protective equipment, and leakage prevention measures by using seal pieces for those people wearing eyeglasses)
 - (b) Handling methods of the electronic personal dosimeter (hereinafter referred to as “PAD (personal alarm dosimeter)”) and exposure dose management methods such as how to understand the exposure dose record etc.
 - (c) Contamination prevention measures and decontamination methods for the human body, equipment, clothing, and tools etc.
 - (d) Dangers in works caused by wearing protective equipment, protective clothing and shielding protective clothing, such as narrowing of the visual field caused by wearing a protective mask, operation of devices with protective gloves on etc.
 - (e) Dangers and prevention measures of heatstroke caused by wearing protective equipment, protective clothing and shielding protective clothing, and limiting resting areas etc.
 - (f) Radiation exposure reduction measures, such as identification of high dose areas and ensuring proper refuge distance, effective use of shields, wearing shielding protective clothing, and shortening of working hours etc.
 - (g) Methods for first aid and emergency contact to a sick or injured person
- (2) Enhancement of education for the operation leader of the relevant subcontractors

Education on the following matters shall be provided for those directing the works of the relevant subcontractors at each site (such as the working team leader and foreman etc.; hereinafter referred to as “operation leader”), in addition to the education for new entrants described in (1) above.

- (a) High dose areas and places of shielding equipment in the power plant
 - (b) Resting areas and emergency evacuation routes etc.
 - (c) Determination of radiation exposure reduction measures through work management such as shortening of working hours and wearing shielding protective clothing etc., and the surveillance methods
 - (d) Identification of exposure dose during work, and the method for managing working hours
 - (e) Methods for determining planned dose and alarm setting values as well as ways for complying with them
- (3) Enhancement of education for those formulating the Construction Plan of the principal employers
- Education on the following matters shall be provided for those preparing the Construction Plan of the principal employers, in addition to the education for new entrants described in (1) above.
- (a) Knowledge on unmanned engineering methods and remote-controlled engineering methods
 - (b) Knowledge on decontamination (elimination of radiation sources) etc. of high dose areas before the start of work
 - (c) Ways for ensuring the separation distance from high dose areas (radiation sources) to the work place
 - (d) Knowledge on the shielding work for high dose areas (radiation sources)
 - (e) Knowledge on the setting of mobile traffic line from resting areas to the work place
 - (f) Knowledge on the setting of resting areas etc.
 - (g) Knowledge on the setting of planned dose, such as workers' collective

dose and individual dose

Part 5 Management of radiation exposure dose

1 Matters to be implemented by Tokyo Electric Power Company Holdings

(1) Systematic management of exposure information

For the purpose of managing the basic information and exposure dose rate information of all workers engaged in the radiation works and various works within the premises of the power plant, it is required to centralize management of those which such information. In view of this requirement, the General Manager of the power plant shall establish an organization that has centralized management of exposure dose-related information (hereinafter referred to as “centralized control organization”) in coordination and collaboration with the TEPCO Head Office etc., and direct it to systematically manage such dose information in an ensured manner by paying attention to Appended Form 1.

(2) Strengthening the function of managing the entry/exit of workers engaged in the radiation works and various works within and off the premises of the power plant

The General Manager of the power plant shall confirm all workers entering the power plant without exception, and implement the matters listed in (a) to (c) below in an ensured manner.

(a) Obtaining the basic information of workers

(b) Confirmation of the implementation record of special education (excluding practical education)

(c) Issuance of individual ID numbers and worker certification with a photo, as well as entrance management

(3) Reliable recording, integration and notification of radiation exposure dose information

The General Manager of the power plant shall record collected exposure information in a corresponding manner to the basic worker information as well as manage cumulative dose, and notify the results regularly to the employees of the power plant and the principal employers.

(4) Support etc. for relevant subcontractors

The General Manager of the power plant shall appropriately implement the measures listed below concerning the notification of exposure dose.

- (a) Provide required support to the principal employers so that notification of exposure dose can be delivered to them without delay.
- (b) Give required instruction or support to relevant subcontractors in the form of written documents when the relevant subcontractors notify workers of their exposure dose in an ensured manner.

2 Matters that should be conducted by the principal employers

(1) Management of radiation exposure dose

For the purpose of appropriately managing the exposure dose of the workers of the principal employers and the relevant subcontractors engaged in radiation works and various works, the principal employers shall assign a radiation control manager, and, under the leadership of the general safety and health manager as set out in Part 3-2(1), identify the exposure state of all workers of the principal employers and the relevant subcontractors including the following matters in an ensured manner, and establish a system for such management by paying attention to Appended Form 1.

- (a) Manage the exposure of the workers of the principal employers and the relevant subcontractors in coordination and collaboration with Tokyo Electric Power Company Holdings.
- (b) Instruct the person(s) of the relevant subcontractors who is (are) in charge of radiation management so that the exposure management of workers of the relevant subcontractors can be conducted appropriately.
- (c) Appropriately manage the worker certifications issued by the General Manager of the power plant so that they will not be used by other than the very persons named on them.
- (d) Participate in the Safety and Health Coordinating Meeting held by

Tokyo Electric Power Company Holdings as set out in Part 3-1(4), and discuss the matters concerning radiation management.

(e) Conduct other matters required for radiation management.

(2) Appropriate implementation of notification on exposure dose etc.

(a) The principal employers shall conduct the following matters in coordination and collaboration with Tokyo Electric Power Company Holdings concerning their own workers engaged in works in the power plant.

(i) As regards daily external exposure dose, notify it to the very worker concerned in writing (dose receipt) etc. issued at the time of returning the PAD.

(ii) As regards the effective dose totaling external exposure dose and internal exposure dose as well as the cumulative values of them, notify them to the very worker concerned in a written document once per month.

(b) The principal employers shall give required instruction or support so that the person(s) of the relevant subcontractors who is (are) in charge of radiation management can appropriately conduct the matters listed in (a) above.

(c) The principal employers shall appropriately conduct the measures listed below concerning the notification of exposure dose.

(i) Establish a system for notifying exposure dose to their workers without delay.

(ii) Give instruction or support to the relevant subcontractors so that such subcontractors will notify their workers of the exposure dose in an ensured manner, in writing or by means of the electronic system at the workplace (provided that the system ensures that the very person concerned has viewed the dose to be confirmed, and that it can be accessed through e-mail etc.) when workers are notified of the exposure dose.

Part 6 Consideration and implementation of effective exposure reduction measures from the construction ordering stage

1 Matters to be conducted at the ordering stage

(1) Preparation of order specification including exposure reduction measures

In order to effectively reduce exposure dose, it is required to consider exposure reduction measures concerning the engineering methods, equipment, facilities, and construction machines etc. from the work ordering stage, and to incorporate them in the Construction Plan. For this purpose, Tokyo Electric Power Company Holdings, when it makes a plan on the works it carries out by their own worker, or orders the works it does not carry out by its own workers to the principal employers, is required to formulate an “exposure reduction specification” which shows the basic concept for the following matters in the order specification etc. on the basis of hearings on proposals by the principal employers concerning radiation works where the planned dose of the entire works (or the total of the planned dose of all workers, the unit of which being person-Sv; hereinafter referred to as “total planned dose”) could exceed 1 person-Sv under the coordination and collaboration of the divisions for construction orders and radiation management.

- (a) Promotion of unmanned engineering methods and remote-controlled engineering methods
- (b) Implementation of decontamination etc. (elimination of radiation sources) in high dose areas before the start of work
- (c) Ensuring the separation distance from high dose areas (radiation sources) to the workplace
- (d) Shielding construction for high dose areas (radiation sources)
- (e) Preparation of resting areas etc.
- (f) Minimization of the travel distance from resting areas to the work place

(2) Comprehensive exposure reduction measures across small-scale works in the same buildings etc.

When two or more small-scale works are ordered for the same building etc., it is effective to implement a comprehensive exposure reduction measure which encompasses the situation of the units in the building etc. For this

reason, in such a case, Tokyo Electric Power Company Holdings shall prepare an exposure reduction specification showing the basic concept of matters set out in (1)(a) to (f), and incorporate it in the relevant order specifications for the purpose of a comprehensive exposure reduction measure including some small-scale works.

- (3) Ex-post verification of the planned dose by means of subdividing work-specific unique numbers

In order to implement exposure reduction measures effectively, it is required to compare the planned dose appropriately specified beforehand with actual exposure dose, and to verify the adequacy of the planned dose. Therefore, Tokyo Electric Power Company Holdings shall assign work-specific unique numbers for each work title, which allows the planned dose to be compared with actual exposure dose.

- (4) Instruction or support for the principal employers

The General Manager of the power plant shall, when the principal employers prepare the radiation management plan as set out in 2(1), provide required instruction or support.

2 Matters to be conducted at the stage of the Construction Plan

- (1) Formulation of a radiation management plan

In preparing the Construction Plan concerning the radiation works conducted by himself/herself in the case of the General Manager of the power plant, or concerning the radiation works ordered by Tokyo Electric Power Company Holdings in the case of the principal employers, where the total planned dose could exceed 1 person-Sv, each shall prepare a radiation management plan describing the following matters on the basis of the exposure reduction measures described in the ordered specification etc., and incorporate it in the Construction Plan.

- (a) Specific contents of implementation concerning the matters listed in 1(1)(a) to (f)

- (b) Exposure reduction measures through optimal work management according to shortened working hours, wearing of shielding protective clothing etc., and work contents

- (2) Basic concept of preliminary calculation of exposure dose reduction effect

and specifying planned dose

In order to evaluate the effect of exposure reduction measures, it is effective to compare the total planned dose assumed when no measures are taken with the total planned dose when such measures are taken. Therefore, Tokyo Electric Power Company Holdings and the principal employers shall consider the following in preparing the radiation management plan described in (1), and incorporate the results in the said plan.

- (a) The total planned dose assumed when no measures are taken
 - (b) The total planned dose assumed when such measures are taken
 - (c) Basic concept of specifying the planned dose for each worker on the basis of the measures (average individual dose per day, work processes, and the average/maximum individual dose in each work period)
- (3) Preparing exposure reduction measures for each work process
- (a) Tokyo Electric Power Company Holdings and the principal employers shall prepare exposure reduction measures for each work process so that the matters described in the radiation management plan can be implemented at the workplace.
 - (b) It is required to specify a detailed planned exposure dose for each work process in order to reduce the exposure dose. Therefore, the principal employers shall specify planned exposure dose (maximum individual dose, average individual dose, total planned dose) for each work process.
- (4) Ex-post verification of the planned dose for each work process
- It is required to compare the planned dose with actual exposure dose (actual dose) in order to improve the exposure reduction measures. Therefore, Tokyo Electric Power Company Holdings and the principal employers shall compare planned dose with actual dose for each work process, and shall, when actual dose exceeds the planned dose, investigate the cause, and reconsider the radiation management plan subsequent to the relevant work process (including the exposure reduction measures for each work process), as needed.

Part 7 Healthcare measures etc.

1 Implementation of medical examinations etc.

(1) Healthcare for workers

(a) Implementation of medical examinations

The General Manager of the power plant and the principal employers shall conscientiously conduct periodical medical examinations based on the Industrial Safety and Health Act and medical examinations based on the Ionizing Radiation Hazards Ordinance for their workers, and shall take appropriate measures for those people who are determined to require measures concerning their assigned work in consideration of the opinions of the physician as a result of hearing such opinions on the results of the relevant medical examinations

(b) Daily Healthcare

The General Manager of the power plant and the principal employers shall check the physical condition of their workers in respect to fever and diarrhea etc. before the start of work, and, if any worker is in bad condition, take measures such as urging the worker to see a physician etc.

Moreover, in addition to workers who are determined to require efforts to maintain their health as a result of the medical examination, for those workers engaged in the work of the power plant for a long time (or roughly 3 months or longer), instruction on health conditions by physicians or public health nurses shall be given by taking the opportunity of medical examinations etc.

In particular, for those workers who are determined to have some underlying disease such as a heart disease or a cerebrovascular disease etc. from the results of past medical examinations, surveys etc. on medical history using survey slips and on subjective/objective symptoms, daily physical condition checks shall be thoroughly conducted, and health care shall be made absolutely sure by means of providing health instructions etc.

(c) Instructions and supports for the relevant subcontractors

The General Manager of the power plant and the principal employers shall provide required instructions and supports so that the relevant

subcontractors can conduct the matters concerning (a) and (b) above correctly.

(2) Notes in conducting the ionizing radiation medical examination

In conducting the ionizing radiation medical examination, the matters listed below shall be noted.

(a) As regards the ionizing radiation medical examination based on Article 56, paragraph (1) of the Ionizing Radiation Hazards Ordinance, while omission of items is permitted in paragraphs (3) and (4) of the same Article, for workers with the effective dose received by them in one year likely to exceed 5 mSv, it is desirable not to omit items in compliance with paragraph (3) of the same Article.

(b) For those workers with the cumulative dose received during the period from March 11, 2011 to March 31, 2012 exceeding 50 mSv, after December 16, 2011, examination of eyes for cataract shall be conducted in an ensured manner without omitting it while they are engaged in radiation works, and, in conducting such examination, an examination using slit lamp microscopy shall be conducted roughly once per year.

2 Ensuring an emergency medical system

The General Manager of the power plant shall, in coordination and collaboration with the TEPCO Head Office etc., pursue enhancement of the emergency transport system and active use of an air ambulance for the purpose of shortening the transportation time, and consider the required health care/medical system, introduce required medical-related professionals in the clinical unit etc., and secure medical materials/equipment for emergency treatment so that emergency treatment can be immediately given to seriously injured or sick workers.

The TEPCO Head Office etc. and General Manager of the power plant shall, for the purpose of securing medical staff in a stable situation and maintaining/improving an appropriate transport system for injured workers, participate in a liaison council organization composed of relevant national organizations, concerned medical institutions, and neighboring fire departments etc.

3 Heatstroke measures

The General Manager of the power plant and the principal employers shall

appropriately implement heatstroke measures pursuant to the provisions of the Appended Form 2.

4 Long-term healthcare measures

The General Manager of the power plant and the principal employers shall, pursuant to the provisions of Ministerial Guidelines, appropriately implement long-term healthcare for people engaged in emergency works in the power plant.

5 Improvement of working environment

Tokyo Electric Power Company Holdings shall, for the purpose of promoting improvement of the working environment of the power plant, systematically pursue the reduction of air dose through elimination/separation of contaminated substances and pavement covering of ground surfaces etc. for preventing internal exposure caused by dust etc. Furthermore, in order to prevent workers from accumulating fatigue and help them recover from fatigue, suitable resting areas and food service facilities shall be effectively provided.

Part 8 Report to the Ministry of Health Labour and Welfare

1 Report of an accident etc.

The General Manager of the power plant shall, when an occupational injury and disease etc. occurs (provided that it involves an injury or a disease requiring treatment in an external medical institution), when a fire or explosion accident, or leakage of or abnormal exposure to some radioactive substance or something contaminated with some radioactive substance occurs, when a place with an extremely high ambient dose rate is newly identified within the premises of the power plant, or in the event of other similar cases, immediately report to that effect (in an optional format) to the Chief of the Tomioka Labour Standards Inspection Office.

2 Report on the assignment of a general safety and health manager

When the General Manager of the power plant has appointed a general safety and health manager as set forth in Part 3-1(1), the effect (in any format) to the Chief of the Tomioka Labour Standards Inspection Office should be reported. Also, when the health manager has been changed, the General Manager of the power plant should similarly report to the Chief of the Tomioka Labor Standards Inspection Office.

3 Report on the radiation management plan and the result of risk assessment

- (a) The General Manager of the power plant or the principal employers shall submit the radiation management plan prepared in accordance with the provisions of Part 6-2(1) to (3) on the works where, among the radiation works and various works conducted by themselves, the total planned dose could exceed 1 person-Sv, to the Chief of the Tomioka Labour Standards Inspection Office by 14 days before the start of the radiation works and various works (excluding the preparation work for material carrying-in etc.) by attaching Format No.1. When the radiation management plan is to be changed, the changed radiation management plan shall be submitted to the Tomioka Labour Standards Inspection Office before starting the work involving the change.
- (b) The General Manager of the power plant or the principal employers shall immediately submit the results of comparison between the planned dose and the actual dose in each work process carried out in accordance with the provisions of Part 6-2(4) (in any format) to the Chief of the Tomioka Labour Standards Inspection Office.
- (c) Tokyo Electric Power Company Holdings or the principal employers shall submit the outline of the result of risk assessment conducted at the construction planning stage in accordance with the provisions of Part 4-2(2) for radiation works and various works where the total planned dose could exceed 1 person- Sv. In accordance with Appended Form 3 the outline of the result of the risk assessment should be attached to the radiation control plan and submitted to the Chief of Tomioka Labor Standards Inspection Office.
Meanwhile, the same shall apply when the result of risk assessment is changed in association with the change in the Construction Plan.
- (d) The radiation works and various works subject to the radiation management plan and risk assessment provided for in 3(a) and (c) shall be those for which orders were placed on or after November 1, 2015.

4 Report on radiation works

- (a) The General Manager of the power plant or the principal employers

shall, when some work among radiation works and various works carried out within the premises of the power plant is done, where the effective exposed dose to the worker could exceed 1 mSv per day, submit a “Notification on radiation works in TEPCO Fukushima Daiichi Nuclear Power Plant”, classified by the work title (by the unique work number), in Format No. 2 to the Chief of the Tomioka Labour Standards Inspection Office in advance (or immediately after the end of the workday in the case of work that needs to be attended to within 24 hours after the situation is confirmed, such as in response to a sudden incident etc.).

In addition, after the relevant work is finished, actual values of average effective dose, maximum effective dose and the total effective dose of workers engaged in the work shall be immediately reported to the Chief of the Tomioka Labour Standards Inspection Office (in an optional format).

However, as regards the notification on works in relation to which the radiation management plan as set out in Part 6-2(1) has been submitted, it shall be submitted in Format No. 3 by attaching an exposure reduction checklist (Format No. 4) prepared on the basis of the exposure reduction measures for each work process prescribed in Part 6-2(3).

- (b) The General Manager of the power plant or the principal employers shall, as regards the works related to the works conducted by themselves, submit a report on the works they judged to correspond to the classification of specified high dose works in the “Tag of work notification for notifying the works as specified high dose works” in Format No.5 to the Chief of the Tomioka Labour Standards Inspection Office by attaching the directory of workers engaged in the relevant works.

5 Report on the exposure dose of workers

The administrator of the Head Office shall report the accumulated value of exposure dose received by all workers engaged in the radiation works or the specified high dose works within the premises of the power plant to the Industrial Health Division, Occupational Safety and Health Department, Labor Standards Bureau, Ministry of Health, Labour and Welfare at the end of each month. Meanwhile, when submitting a report as described above, workers engaged in specified high dose works shall be distinguished from other workers.

6 Report on the safety and health management state

The General Manager of the power plant shall submit a report on the state of implementing the measures as set out in Part 3-1 and Part 5-1 in Format No. 6 to the Chief of the Tomioka Labour Standards Inspection Office once per each quarter.

7 Submission of records concerning designated emergency work etc.

Tokyo Electric Power Company Holdings and the principal employers shall report on the records on designated emergency work etc. as listed below to the Industrial Health Division of the Occupational Safety and Health Department, Labor Standards Bureau, Ministry of Health, Labour and Welfare according to the provisions of Appended Form 4.

- (1) A copy of the results of medical examinations as set out in Article 59-2, paragraph 1 of the Ionizing Radiation Hazards Ordinance
- (2) A report on the state of implementing the management of dose etc. as set out in Article 59-2, paragraph 2 of the Ionizing Radiation Hazards Ordinance
- (3) Results of medical examinations for cancer etc. as set out in Part 2-2 of the Ministerial Guidelines