

Overview of the outline of the draft Ministerial Ordinance for partial revision of exemption in the Ordinance on Prevention of Ionizing Radiation Hazards in response to the situation resulting from the Tohoku - Pacific Ocean Earthquake in 2011

1. Purpose

- The Ordinance on Prevention of Ionizing Radiation Hazards (MHLW Ordinance No. 41 of 1972, hereinafter referred to as “the Ionizing Radiation Ordinance”) under the Industrial Safety and Health Act (No. 57 of 1972) stipulates a radiation exposure dose limit of 100 mSv for the workers to be engaged in the emergency work in case of accident at a nuclear plant to prevent radiation hazards to the workers.
- However, given the severity of the disaster at the Tokyo Electric Power Company Fukushima Daiichi Nuclear Power Plant (hereinafter referred to as “TEPCO Fukushima Daiichi NPP”), the radiation exposure dose limit for emergency workers at the TEPCO Fukushima Daiichi NPP has been raised from 100 mSv to 250 mSv*¹ by the provision in the Ministerial ordinance on exemption of the Ordinance on Prevention of Ionizing Radiation Hazards in response to the situation resulting from the Tohoku-Pacific Ocean Earthquake in 2011 (MHLW Ordinance No. 23 of 2011, hereinafter referred to as the “Ordinance on Exemption”). It was based on the consideration that raising the radiation dose limit is unavoidable under the current operating conditions arisen due to above accident in order to prevent the escalation of the disaster and reassure the public of Japan.

(*1) The radiation exposure dose limit was raised considering the following conditions:

- ✓ According to the recommendation from the International Commission on Radiological Protection (ICRP), the radiation exposure dose should not be in excess of approximately 500 mSv except in the event of saving lives in serious accidents.
- ✓ There has been no clear evidence of acute clinical conditions identified below the radiation exposure dose 250 mSv.

The Radiation Council of the Ministry of Education, Culture, Sports, Science and Technology also found the validity of the said raise.

- Regarding the recent progress of emergency work at TEPCO Fukushima Daiichi NPP, the volume of work to prevent the escalation of the nuclear disaster (abnormal release of radioactive materials to the environment outside of the power plant site) has been limited. Therefore, the Ordinance of Exemption will be partially revised to restrict the application of the upper radiation exposure dose limit of 250 mSv for the emergency worker only to cases which are specified by the Ministry of Health, Labour and Welfare.

2. Details of the revision

- (1) The radiation exposure dose limit of 250 mSv for emergency work shall be applied to unavoidable cases which the MHLW Minister specifies.*

(*) The cases where any of the work categories in the following are conducted in the areas of reactor facilities, steam turbines and their accessories or those surrounding areas where the radiation dose rate could be in excess of 0.1 mSv/h (to be defined by a notice).

- 1) Urgent work to handle the loss of cooling functions at reactor facilities or spent fuel storage facilities.

Specifically, it envisages restoration of a cooling function when the function based on water injection would be significantly decreased or lost due to leak from pipes, blockage of pipes and the malfunctioning of pumps or control valves.

- 2) Urgent work to handle the loss of functions of the facilities to suppress the release of radioactive materials external to the site.

Specifically, it envisages:

- a) Restoration of functions to treat contaminated water when such functions would be significantly decreased or lost due to leak from pipes, blockage of pipes, or failure of pumps or control valves.
- b) Restoration of functions to prevent leak of contaminated water and radioactive materials to the sea, groundwater, air or soil when such functions would be significantly decreased (affected) or lost due to failure of sea water purification system and damage to impermeable walls or containers for storing contaminated materials.
- c) Restoration of functions for nitrogen inclusion to prevent hydrogen explosions when such functions would be significantly decreased or lost due to leak of nitrogen from pipes, blockage of pipes or failure of pumps or control valves.

- (2) As a transitional measure, the Ordinance of Exemption prior to the revision shall be applied to emergency workers who have been already working at the TEPCO Fukushima Daiichi NPP at the time of the revision of the Ordinance.

3. Date of enforcement

It is planned that the ministerial ordinance will be promulgated and come into effect after the process of public comments and consultations with relevant committees.

**Decrease of Upper Limit of Radiation Exposure Received by
Workers in the TEPCO Fukushima Daiichi NPP by Revising the Exemption in the Ionizing Radiation Ordinance**

Workers for whom the decreased upper limit of radiation exposure is applied (upper limit = 100 mSv)

Workers newly engaging in emergency work after the revised ordinance come into effect

100 mSv is applied

(Upper limit of radiation exposure during the emergency work based on Ionizing Radiation)

Workers for whom unchanged upper limit of radiation exposure is applied as an exemption (upper limit = 250 mSv)

Workers engaged in emergency work to respond to troubles

- 1) Of water injection systems, etc. for cooling the reactor core
- 2) In area under high radiation dose rate
- 3) Within the reactor building, etc. and surrounding areas

Workers already engaged in emergency work

Workers already engaged in emergency work include supervisors at the site from TEPCO and relevant plant manufacturing/construction companies who are responsible for directing emergency work and radiation dose level/rate control of other workers. If the upper limit is lowered to 100 mSV, most of these workers will have to leave the emergency work at the same time, which could interrupt the operations.

*137 workers among those that meet the above definition exceed