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Professor Yasuo Suwa

Chair

Labor Policy Council

We would appreciate your opinion on the attached “Outline of the Draft Ministerial Ordinance on Prevention of Ionizing Radiation Hazards at Works to Decontaminate Soil and Wastes Contaminated by Radioactive Materials Resulting from the Great East Japan Earthquake and Related Works” pursuant to Item 1, Paragraph1, Article 9 of the Act on Establishing the Ministry of Health, Labour and Welfare.

Yoko Komiyama

Minister

The Ministry of Health, Labour and Welfare

Outline of the Draft Ministerial Ordinance on Prevention of Ionizing Radiation Hazards at Works to Decontaminate Soil and Wastes Contaminated by Radioactive Materials Resulting from the Great East Japan Earthquake and Related Works

Section 1. General Provisions

1. Basic rules for prevention of ionizing radiation hazards during works to decontaminate soil and wastes contaminated by the radioactive materials discharged by the accident

The employers shall strive toward minimizing the exposure of the ionizing radiation to the workers engaged in decontamination works.

2. Definitions

- (1) The “employers” in this Ordinance shall mean the employers who provide decontamination works.
- (2) The “workers engaged in the decontamination works” in this Ordinance shall mean the workers who conduct decontamination works.
- (3) The “ionizing radiation” in this Ordinance shall mean the ionizing radiation defined in the Ordinance on Prevention of Ionizing Radiation Hazards.
- (4) The “radioactive materials discharged by the accident” in this Ordinance shall mean the radioactive materials released from the nuclear power plant accident caused by Tohoku – Pacific Ocean Earthquake on 11 March 2011.
- (5) The “works of decontamination, etc.” in this Ordinance shall mean the works concerning the removal of the radioactive materials discharged by the accident as well as measures for preventing spread of contamination in the special decontamination area or in the intensive contamination survey areas, as specified in the Act on Special Measures Concerning the Handling of Radioactive Pollution”(hereinafter referred to as “the special decontamination areas, etc.”)
- (6) The “removed soil” in this Ordinance shall mean the soil generated during the operations in the preceding item (5) (limited to those with the radioactivity concentration of cesium134 and cesium137 which exceeds 10,000 Bq/kg)
- (7) The “work for collecting waste, etc” in this Ordinance shall mean the operations to collect, transport, or store the removed soil or waste (limited to those with the radioactivity concentration of cesium134 and cesium137 which exceeds 10,000 Bq/kg) which are contaminated by the radioactive materials discharged by the accident in the special decontamination areas, etc.

- (8) The “decontamination works” in this Ordinance shall mean works of decontamination, etc and work for collecting waste, etc.

Section 2. The radiation dose limits and measurement

1. The radiation dose limits to the workers engaged in the decontamination works

- (1) The employers shall assure that the effective doses received by the workers engaged in the decontamination works do not exceed 50 mSv/year and 100 mSv/5 years.
- (2) Notwithstanding the item (1), the employers shall assure that the effective doses received by the female workers engaged in the decontamination works (excluding infertile female workers or those described in the next item (3)) does not exceed 5 mSv/3 months.
- (3) The employers shall assure that the doses received by the pregnant female workers who are engaged in the decontamination and other works do not receive doses above specified levels in each following category:
- (i) Effective dose due to internal exposure: 1 mSv
 - (ii) Equivalent dose exposure to the abdomen surface: 2 mSv

2. Radiation dose measurement

- (1) The employers shall measure the radiation dose due to external exposure received by the workers engaged in the decontamination works in the special decontamination areas, etc. (hereinafter referred to as “the decontamination related works.”)
- (2) The employers shall, in addition to the dose measurement pursuant to the item (1), measure the radiation dose received by the workers engaged in the decontamination related works in the special decontamination areas, etc. (limited to the areas where the average ambient dose rate exceeds 2.5 μ Sv/h) due to internal exposure during the decontamination works, or shall provide internal exposure examination on the following items:
- (i) The workers engaged in the decontamination works who handle highly radioactive contaminated soil and wastes (limited to those with the radioactivity concentration of cesium-134 and cesium-137 which exceeds 500,000 Bq/kg) in the areas where the dust concentration exceeds 10 mg/m³, shall be examined for internal exposure once every three months (The internal exposure examination should be given to female workers who are likely to receive the effective dose of 1.7 mSv or above (excluding infertile female) and who may become pregnant).
 - (ii) The workers engaged in the decontamination works listed in the following items (a) or (b) shall be provided with internal exposure examination by the method specified by the Ministry of Health, Labour and Welfare.

- (a) Work involving handling of the highly radioactive contaminated soil and wastes in the areas where the dust concentration is 10 mg/m³ or less.
 - (b) Work involving handling of the contaminated soil and wastes other than the highly radioactive contaminated soil and wastes or the removed soil or the contaminated waste, in the areas where the dust concentration exceeds 10 mg/m³.
- (3) When results of the internal exposure examination on the workers engaged in the decontamination works demonstrate the levels higher than the standards specified by Ministry of Health, Labour and Welfare, the employers shall measure the doses of workers by the method specified in the item (i) of the preceding item (2) in accordance with the provision of the item (ii) in the preceding item (2).
- (4) The measurement of the dose due to external exposure pursuant to the provisions of item (1) shall be conducted by the 1 cm dose equivalent rate.
- (5) The external exposure measurement pursuant to the provisions of the item (1) shall be conducted with the radiation meter at the chest for both male workers and interfile female workers and at the abdominal region for female workers who may become pregnant.
- (6) The employers may, notwithstanding the provisions in the two preceding items (4) and (5), measure the dose due to external exposure specified in the item (1) received during the decontamination related works in the special decontamination areas, etc (limited to the locations where the average ambient dose rate is 2.5 µSv/h or less) with the method specified by the Ministry of Health, Labour and Welfare.
- (7) The internal exposure dose in accordance with the provisions of the item (2) shall be measured by the methods specified by the Ministry of Health, Labour and Welfare.
- (8) The workers engaged in the decontamination related works shall wear the radiation meters in the special decontamination areas and etc (limited to the locations where the average ambient dose rate exceeds 2.5 µSv/h)

3. Confirming and recording the results of dose and other measurement

- (1) The employers shall check the dose measurement due to external exposure in accordance with the provisions of the item (2) in the preceding paragraph 2, when the workers engaged in the decontamination works are likely to receive the external exposure of 1 mSv by 1 cm dose equivalent per day.
- (2) Based on the measurement or calculation results under the item (5) through (7) in the paragraph 2, the employers shall calculate and record the doses received by their workers engaged in the decontamination works without delay with the methods specified by the Ministry of Health, Labour and Welfare described in the following items and store the records for thirty years or transfer the records to the organizations designated by the Ministry of

Health, Labour and Welfare after five years of preservation.

- (i) The total effective doses measured in three month, one year, and five year periods for both male workers and infertile female workers (The total effective doses of three month and one year periods for workers whose effective doses did not exceed 20 mSv per year for five years.)
 - (ii) The total effective doses for one month, three month, and one year periods for female workers who may become pregnant (The total effective doses for three month and one year periods for workers whose effective doses are not likely to exceed 1.7 mSv/month.)
 - (iii) The total effective doses from internal exposure for fertile female workers during pregnancy and the total amount of equivalent doses received at the abdomen surface for one month and throughout the period of pregnancy.
- (3) The employers shall notify the doses specified in the provisions of the item (i) to (iii) in the preceding item (2) to workers engaged in the decontamination works without delay.

Section 3 Measures for implementation of the decontamination works

1. Preliminary survey

- (1) The employers shall conduct preliminary surveys of the following items at the sites where the decontamination related works are taken place and record the results before commencing the decontamination works:
 - (i) The site conditions of the decontamination related works
 - (ii) The average ambient dose rates of the decontamination related works
 - (iii) The radioactivity concentration of cesium 134 and cesium 137 contained in the contaminated soil and wastes which are objective to the decontamination related works, the removed soil, or the contaminated waste
- (2) The employers shall clearly present the completion dates of the surveys described in the item (1), and the summaries of the methods and the results of the surveys to the workers before commencing decontamination related works.

2. Work plan

Before the employer conduct the decontamination works, they shall devise the clear work plans of the decontamination related works concerning the following items and disseminate the plans to all involved workers:

- (i) Conditions of the sites and the work procedures for the decontamination related works
- (ii) Exposure dose measurement methods for the workers engaged in the decontamination works

- (iii) Measures for minimizing the exposure to the workers engaged in the decontamination works
- (iv) Types and performance capacity of the machineries, tools, and other equipment used for the decontamination related works
- (v) Preparedness for emergency response in case of industrial accidents.

3. Operation reader

Before the employer conducts the decontamination works, they shall appoint an operation reader of the decontamination related works who could take strong leadership in directing the decontamination related works in accordance with the work plans introduced in the section 2 and have the operation reader perform all of the following duties:

- (i) Determine work procedures of the decontamination related works and allocate workers engaged in the decontamination works to appropriate positions
- (ii) Inspect functions of the machineries and other tools used for the decontamination related works and eliminate any defects.
- (iii) Supervise the usage of radiation meters and protective equipment
Prevent unauthorized personnel from entering the sites of the decontamination related works

4. Submission of work request

The primary contractors shall submit the application to the relevant directors of Labour Standards Inspection Office before commencing works of decontamination, etc. in the special decontamination areas, etc. (limited to the areas where the average ambient dose rate exceeds 2.5 $\mu\text{Sv/h}$.)

5. Medical examination

- (1) The employers shall ensure that the appropriate health care is provided by the medical doctors to their workers engaged in the decontamination works if their workers correspond to any of the following cases:
 - (i) The workers who received the effective doses exceeding the dose levels specified in the item(1), paragraph 1 of Section 2
 - (ii) The workers who accidentally inhaled or ingested radioactive materials discharged by the accident
 - (iii) The workers who are not able to reduce their levels of contamination to 40 Bq/cm^2 or less by washing themselves.
 - (iv) The workers with contaminated wounds.

- (2) If any of their workers correspond to the cases described in (1), the employers shall promptly submit the report of notification to the relevant directors of Labour Standards Inspection Offices.

Section 4. Prevention of contamination

1. Measures for controlling the dispersion of dust

The employers shall take the measures for controlling the dispersion of dust such as keeping the contaminated soil and wastes which are objective to the decontamination related works, or the removed soil or the contaminated waste in wet conditions, when they conduct the decontamination related works specified in the item (1) or (2) in the paragraph 2 of Section 2 in the decontamination related works.

2. The use of containers in the work for collecting waste, etc

- (1) In order to prevent spread of contamination, employers shall use the containers in the work for collecting waste, etc., except in cases which storing the removed soil or the contaminated waste in the container is extremely difficult or the special measures need to be taken to prevent scattering and leaking of the removed soil or the contaminated waste.
- (2) The employers shall use the containers described in the item (1) with the appropriate structures specified in the following items:
- (i) The containers used for collection or storage of the removed soil or the contaminated waste shall be structured to prevent scattering and leaking of the removed soil or the contaminated waste
 - (ii) The containers used for transportation of the removed soil or the contaminated waste should be structured to prevent scattering and leaking of the removed soil or the contaminated waste with the 1 cm dose equivalent rate at 1 m from the surface of the container or the package, which does not exceed 0.1 mSv/h; however, exceptions are approved in cases in which measures for shielding of radiation are necessary when transporting containers with special carriers.
- (3) The employers shall indicate the containers used for the removed soil and the contaminated waste described in the item (1) with labels.
- (4) The employers shall use the containers described in the item (1) and take the necessary measures to prevent unauthorized personnel from entering the sites storing the removed soil or the contaminated waste, by posting warning signs and blockading the sites with enclosures. .

3. Screening for contamination of workers before they leave their work sites for the day

- (1) The employers shall establish the contamination screening stations at or near the sites of decontamination works and inspect the levels of contamination in workers' bodies, clothing, shoes, protective equipment, and other gear that came in contact with their bodies before the workers engaged in decontamination works leave their work sites for the day.
- (2) The employers shall not allow the workers engaged in the decontamination works to leave their work sites when the levels of contamination in their bodies or other gear exceed 40 Bq/cm² and the following measures are not taken:
 - (i) If workers' bodies are contaminated, they need to reduce their levels of contamination to 40 Bq/cm² or less by washing themselves. .
 - (ii) If the gear attached to the workers is contaminated, workers need to take off the contaminated gear.
- (3) The workers engaged in the decontamination works shall comply with the employers' requests and follow their instructions in washing their bodies or taking off their gear pursuant to the provisions of the item(2).

4. Screening for contamination of items before they will be taken out from the work sites

- (1) The employers shall use the containers described in the item (1) of the paragraph 2 and inspect the levels of contamination of any items that will be removed from the work sites at the screening station described in the item (1) of the paragraph 3 except in cases to-be-removed items will be transported to other sites of the decontamination works after following appropriate procedures.
- (2) The employers and workers shall not remove any items whose levels of contamination exceed 40 Bq/cm². However, exceptions are allowed in cases where items are appropriately stored in the containers described in the item (1) of the section 2 and transported to other sites of the decontamination works, storage facilities, or disposal facilities.

5. Protective Equipment

- (1) The employers shall prepare and use the effective respiratory protective equipment, protective clothing, gloves, and footwear to ensure the safety and health of their workers engaged in the decontamination works when assigning them to the decontamination related works described in (i) or (ii) in the item (2) of the paragraph 2 in Section 2.
- (2) The workers engaged in the decontamination works shall use the protective equipment described in the item (1) when they conduct the decontamination related works specified in the item (1).

6. Decontamination of the protective equipment

The employers shall ensure that the workers engaged in decontamination works do not use the protective equipment when the levels of contamination of the protective equipment are identified to exceed 40 Bq/cm². The same protective equipment can be used if the contamination levels of the equipment were reduced to 40 Bq/cm² or less by washing.

7. Prohibition of smoking, eating, and drinking at work sites

- (1) The employers shall prohibit the workers from smoking, eating, or drinking at the work sites where the radioactive materials discharged by the accident are likely to be inhaled or ingested. The employers shall be responsible for ensuring that this rule is clearly communicated to every worker before they commence the decontamination works.
- (2) The workers shall not smoke, eat, or drink at the sites described in the item (1).

Section 5 Special education and training

The employers shall provide special education to enhance the knowledge and understanding of the workers engaged in the decontamination works in the following areas in assigning the decontamination works to the workers:

- (i) The knowledge about the effect of ionizing radiation on organisms and the methods for controlling exposure dose
- (ii) The knowledge about the methods and procedures of the decontamination related works
- (iii) The knowledge about how machineries and other tools used for the decontamination related works are structured and how to use them
- (iv) Related laws and regulations
- (v) The methods and procedures concerning the decontamination related works including how to use machineries and other tools.

Section 6. Medical examination

1. Medical examination

- (1) The employers shall provide regular medical examination in the following areas conducted by doctors to the regular workers engaged in the decontamination works at the time of employment and reallocation. From thereafter medical examination should be provided once every six months.
 - (i) The investigations and evaluations of the exposure history
 - (ii) The examination of leukocyte count and classifications

(iii) The examination of red blood cell counts and hemoglobin contents or hematocrit values

(iv) The examination of the eyes for cataract

(v) The skin examination

(2) Notwithstanding the provisions in the item (1), the requirements described in (ii) through (v) in the item (1) can be exempted if medical doctors determine those examination are unnecessary for the workers whose effective doses did not exceed 5 mSv in the year before the medical examination and their effective doses are not likely to exceed 5 mSv in the year the medical examination will be conducted.

2. Recording the results of medical examination

Based on the results of the medical examination described in the item (1) of paragraph 1, the employers shall create medical examination card and preserve them for thirty years, or transfer the medical examination card to the organizations designated by the Ministry of Health, Labour and Welfare after the cards had been kept for five years.

3. Seeking advice from medical doctors about the results of the medical examination

Based on the results of the medical examination described in the item (1) of paragraph 1, the employers shall seek advice from medical doctors within three months after the date of the medical examination and record the opinions and observations of the medical doctors in each employee's medical examination card.

4. Informing employees about results of their medical examination

The employers shall inform their workers engaged in the decontamination works about their results of medical examination described in the item (1) of paragraph 1 without delay.

5. Reporting the results of medical examination

The employers shall submit the report of the medical examination results specified in the item (1) of the paragraph 1 to the Director of the relevant Labour Standards Inspection Office without delay.

6. Measures based on the medical examination and other observations

Based on the results of the medical examination described in the item (1) of paragraph 1, the employers shall take needed measures to protect the health of their workers who have or may have developed a radiation related disorder. For example, employers may need to transfer the workers to the alternative positions or locations until complete remission.

Section 7. Miscellaneous provisions

1. Providing portable radiation meters

The employers shall provide portable radiation meters to the workers needed to fulfil the duties specified herein.

2. Transferring medical records and other information

(1) The employers, who created and kept the records described in the item 2, paragraph 3 in Section 2 and the medical examination cards described in paragraph 2 in Section 6 shall transfer such records and cards to organizations designated by the Ministry of Health, Labour and Welfare when closing their businesses.

(2) The employers, who created and kept the records described in the item (2), paragraph 3 in Section 2 and the medical examination card described in paragraph 2 in Section 6 shall provide the copies of their records and medical examination card to the workers engaged in the decontamination works when closing their businesses or when the workers terminated their employment.

3. Totalling the radiation doses received by the workers

The employers shall calculate the total of the exposure dose received by the workers engaged in the decontamination works by combining the radiation doses they received while they are engaged in the decontamination works and the doses they received while engaged in other radiation work.

Section 8. Effective date

1. This ordinance shall take effect and be in force on 1 January 2012.
2. The necessary adjustments shall be made to the relevant ordinances.