

18 April 2017

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President and Director  
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Director General  
Occupational Safety and Health Department  
Labour Standards Bureau  
Ministry of Health, Labour and Welfare

Measures for the Prevention from Radiation Hazards due to the Exposure of the Eye Lens in  
Radiation Works

As Director General, I would like to express my gratitude for your understanding and support of the promotion of Occupational Safety and Health Administration.

At present, the Ordinance on Prevention of Ionizing Radiation Hazards (Ordinance of the Ministry of Health, Labour and Welfare No. 41, 1972 (hereafter referred to as Ionizing Radiation Ordinance)) defines in Article 5 that the equivalent radiation dose of radiation workers must not exceed 150 mSv in a year for the eye lens. The former maximum allowable dose was revised to this value on 1 April 2001 to reflect the proposal by the Radiation Council about the incorporation of the International Commission on Radiological Protection (ICRP) Recommendations of 1990 (Pub. 60) into domestic systems, etc. and to accommodate the incorporation of other international standards. We are making efforts to ensure that this upper limit is not exceeded.

On the other hand, as a result of reviews based on recent epidemiologic data, in the Seoul Statement made in 2011 by the ICRP, the Commission recommends an equivalent dose limit for the lens of the eye of 20 mSv in a year, averaged over defined periods of 5 years, (with no single year exceeding 50 mSv), which is a lower upper-limit dose than before. This maximum

allowable equivalent dose is being incorporated into the International Atomic Energy Agency's International Basic Safety Standards and Technical Document (IAEA TECDOC) No.1731.

As the Radiation Council advances discussions about this matter, these requirements are expected to be incorporated into domestic regulations, resulting in necessary revisions to the applicable laws and regulations.

Under the circumstances, with the understanding of this trend in maximum allowable dose, we would like you to work on feasible measures for exposure reduction before revisions are made to the applicable laws and regulation, based on the following notice and in accordance with the ALARA (as low as reasonably achievable) principle shown by the ICRP—"Doses should all be kept as low as reasonably achievable, taking into account economic and societal factors."

## Notice

1. In the workplace where radiation works are being conducted, the work methods and procedures must be revalidated in accordance with the fundamental principles of radiation protection: limit the time workers are exposed to the radioactive source, increase the distance between workers and the source, and shield workers themselves by placing objects between workers and the source.

Based on the revalidation results, the work methods must be reviewed together with measures for radiation exposure reduction as required with attention paid to the following points. The same actions must be taken as well for workplaces where radiation works are expected to be conducted.

- (1) It must be checked that no radiation source is unnecessarily close to a work position; as required, work positions must be reviewed and the radiation sources must be shielded. In addition, the actual work hours must be minimized, for example, through preliminary simulation training to conduct the same work in an environment not exposed to any radiation and through skill-enhancing training courses. Furthermore, it is imperative to secure and develop human resources qualified for radiation works by, for example, increasing the numbers of qualified workers and workers who take special education courses.
  - (2) For any work that may locally expose the lens of the eye to radiation, appropriate measures against exposure to radiation must be taken, for example, to make workers wear protective equipment including radiation protection goggles and use portable protective screens of medical-use acrylic glass. The affected workers must be trained for the appropriate use of such equipment and glass.
2. If any workers claim that they have anxiety about their lenses of the eyes due to radiation exposure, necessary actions must be determined by consultations between labor and management, based on, for example, interviews with industrial physicians and consultations with occupational health support centers and specialists on the impacts of radiation on health.
  3. The current method must be validated for measuring and evaluating equivalent doses.

When shielding needs to be provided for a considerable amount of radiation, for example, by full-face masks worn by workers in an environment where beta rays are mainly emitted, the method for evaluating equivalent doses must be reviewed with the shielding effect taken into consideration.

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To relevant Ministries, Agencies, and Bureaus  
listed in the attachment below

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On the other hand, for example, the Seoul Announcement made in 2011 by the International Commission on Radiological Protection (ICRP) indicates a maximum allowable dose to the lens of the eye lower than that defined by the Ionizing Radiation Ordinance. As the Radiation Council advances discussions about this matter, these requirements are expected to be incorporated into domestic regulations based on this international trend, resulting in necessary revisions to the applicable laws and regulations.

Under the circumstances, we have issued to relevant employers and organizations Occupational Safety and Health Department Notification Nos. 0418-1 to 0418-4 dated 18 April 2017 as shown in the attachment below in order for them to work on feasible measures for exposure reduction.

Such being the situation, we would like you to understand the points and cooperate in further promoting measures for preventing exposure to radiation workers from radiation hazards.

**Attachment**

Director of the Electricity and Gas Industry Department, Agency for Natural Resources and Energy

Director of the Nuclear Regulation Department, the Secretariat of the Nuclear Regulation Authority

Prefectural Labour Bureaus