XVI-2 Status of Occupational Radiation Exposure Management

(1) Licensees for the construction of reactors, etc. are obligated to control the exposure levels of personnel engaged in radiation work at the nuclear facility not to exceed the exposure limit prescribed by the Nuclear Reactor Regulation Law.

In FY2005, the occupational radiation exposure dose was lower than the limit at all nuclear facilities.

Individual exposure limits of personnel engaged in radiation work:

In response to the recommendation by ICRP in 1990, relevant laws were amended as follows. After FY2001, the individual radiation exposure limit is 100 millisievert per five years and 50 millisievert per year.
(The exposure limit for female personnel, which is defined in Article 9-2 of the Regulations Concerning Construction, Operation, etc. of Commercial Nuclear Power Reactors, is 5 millisievert per three months, in addition to the prescribed limit mentioned above.)

(2) The status of radiation exposure management for FY2005 is as follows.

1) In FY2005, the total number of personnel engaged in radiation work at commercial nuclear reactor facilities was roughly 66,300, compared with roughly 66,700 in the previous fiscal year. The collective exposure dose was 66.91 person-sievert compared with 77.86 person-sievert in the previous fiscal year.

   The average dose per person was 1.0 millisievert compared with 1.2 millisievert in the previous fiscal year.

2) At the Fugen Nuclear Power Plant, a power reactor facility in a research and development stage, the average exposure dose of personnel engaged in radiation work was 0.2 millisievert per person compared to 0.6 millisievert in the previous fiscal year, while at the Monju Nuclear Power Plant, another power reactor facility in a research and development stage, it was 0.0 millisievert, which is the same as the previous fiscal year.

   The total exposure dose at the Fugen Nuclear Power Plant was 0.16 person-sievert, compared with 0.37 person-sievert in the previous fiscal year, while at the Monju Nuclear Power Plant, it was 0.00 person-sievert, the same as the previous fiscal year.

3) The average exposure dose of personnel engaged in radiation work at a processing facility was a maximum of 0.3 millisievert per person, compared with 0.3 millisievert per person in the previous fiscal year.

   The total exposure dose of personnel engaged in radiation work at a processing facility was a maximum of 0.10 person-sievert, compared with 0.10 person-sievert in the previous fiscal year.

4) The average exposure dose of personnel engaged in radiation work at a reprocessing facility was a maximum of 0.1 millisievert per person, compared with 0.1 millisievert per person in the previous fiscal year.

   The total exposure dose of personnel engaged in radiation work at a reprocessing facility was a maximum of 0.15 person-sievert, compared with 0.18 person-sievert in the previous fiscal year.

5) The average exposure dose of personnel engaged in radiation work at a waste burial facility or waste management facility was a maximum of 0.0 millisievert per person, which is the same as the previous fiscal year.

   The total exposure dose of personnel engaged in radiation work at a waste burial facility or waste management facility was a maximum of 0.01 person-Sv, compared with 0.01 person-Sv in the previous fiscal year.

6) An exposure dose limit of 100 millisievert was set for a 5-year period starting at April 1, 2001, and no person had exceeded the exposure limit at the end of FY2005.

(3) Occupational exposure management in nuclear facilities is managed by each plant. When a person works at more than one facility, their exposure record in each facility is managed to maintain accurate exposure management.

The registration, recording and maintenance of occupational exposure data are managed in a unified fashion by the Occupational Exposure Central Registration Center of the Radiation Effects Association.

(4) The distribution for the exposure levels of personnel engaged in radiation work in FY2005 (including exposure status including exposure history) and the distribution of exposure levels of female personnel (defined in Article 9-2 of the Rules for the Installation, Operation, etc. of Commercial Power Reactors) are shown by quarter.

The exposure dose of personnel at nuclear facilities by fiscal year beyond 1996 is presented in the reference documents.

The following are notes for the tables.

1) The "total" number of personnel engaged in radiation work is the sum of all numbers recorded at respective nuclear facilities. Therefore, workers who have worked at more than one facility are counted more than once.

2) The "total exposure dose" values for "employees" and "others" were rounded to three decimal places. For some data, the sum of "employees" and "others" does not correspond with the "total," which is an error arising from the calculation method described above.

3) The "average dose" values were rounded to two decimal places.

4) The "maximum exposure dose" values are the actual dose at the facility.

5) The number of personnel engaged in radiation work and exposure doses have been collected since the institution of control zones.

6) The exposure dose of personnel who worked at both the Tokai Power Station and the Tokai Daini Power Station of the Japan Atomic Power Company Co., Ltd., was calculated by dividing the value that was indicated on the film badge into proportions based on the dosimeter measurements at these two plants.(for data up to FY1999)

7) The data for plants that have "facilities in which nuclear fuel material is handled" defined in the Nuclear Reactor Regulation Law include some of the data of personnel engaged in radiation work at these facilities.