XIV-2 Status of Occupational Exposure Dose Management at Nuclear Facilities

- Licensees for the construction of reactors, etc. are obligated to control the exposure dose levels of personnel engaged in radiation work not to exceed the exposure dose limit prescribed by the Nuclear Reactor Regulation Law.

  The occupational exposure dose in FY2000 was lower than the limit at all facilities.

  Individual exposure dose limits of personnel engaged in radiation work is 50 mSv per year, with an additional 13 mSv per three months for the abdominal region of female personnel (except for those diagnosed as infertile or during pregnancy).

  Due to the amendment of relevant laws following the recommendation by ICRP in 1990, the individual exposure dose limit will be 100 mSv per five years and 50 mSv per year from FY2001 onward. (The exposure dose limit for female personnel will be 5 mSv per three months in addition to the prescribed limit mentioned above.)

- The status of exposure dose management in FY2000 is as follows:

  The average exposure dose at commercial power reactor facilities was 1.2 mSv per person, which was the same as the previous fiscal year.

  The total exposure dose at commercial power reactor facilities was 78.83 person-Sv, compared with 83.78 person-Sv during the previous fiscal year.

  Among power reactor facilities in a research and development stage, at the Fugen Nuclear Power Plant the average exposure dose of personnel engaged in radiation work was 1.2 mSv per person, compared with 0.5 mSv per person during the previous fiscal year, while at the Monju Nuclear Power Plant it was 0.0 mSv per person, which was the same as in the previous fiscal year.

  The total exposure dose at the Fugen Nuclear Power Plant was 2.39 person-Sv, compared with 0.81 person-Sv during the previous fiscal year, while at the Monju Nuclear Power Plant it was 0.00 person-Sv, which was the same as in the previous fiscal year.

  The average exposure dose of personnel engaged in radiation work at a fabrication facility was a maximum of 0.2 mSv per person, which was the same as in the previous fiscal year.

  The total exposure dose of personnel engaged in radiation work at a fabrication facility was a maximum of 0.07 person-Sv, which was the same as in the previous fiscal year.

  The average exposure dose of personnel engaged in radiation work at a reprocessing facility was a maximum of 0.0 mSv per person, compared with 0.1 mSv 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 0.11 person-Sv, compared with 0.29 person-Sv during the previous fiscal year.

  The average exposure dose of personnel engaged in radiation work at a waste burial facility or waste management facility was a maximum of 0.1 mSv per person, compared with 0.0 mSv per person during 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 0.03 person-Sv, compared with 0.02 person-Sv during the previous fiscal year.

- Occupational exposure dose management is conducted for each facility. However, in cases where personnel engaged in radiation work have shifted between more than one nuclear facility it was difficult to completely know their exposure histories. Therefore, it became necessary to establish a system that could carry out nationwide occupational exposure management for individuals in a centralized manner.

  Given such circumstances, the Occupational Exposure Central Registration Center was established at the Radiation Effects Association in November 1977, and has since registered and managed the occupational exposure doses and stored its records in a centralized manner.

Licensees for the construction of reactors, etc., check to confirm that personnel engaged in radiation work are registered at the Central Registration Center and look into their previous exposure histories, etc., at other nuclear facilities, thereby ensuring that correct radiation control is implemented.

- The exposure dose distribution in FY2000 is shown in (1), and the quarterly exposure dose distribution for female personnel (except for those diagnosed as infertile) is shown in (2).

The annual exposure doses of personnel engaged in nuclear power reactor facilities since FY1991 are provided in a reference document.

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 each nuclear facility. 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 two decimal number. 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 exposure dose" values were rounded to one decimal place.
4) The "maximum exposure dose" is based on records at the power plant concerned.
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 have worked at both the Tokai Power Station and the Tokai Daini Power Station of the Japan Atomic Power Co., Ltd. was calculated by dividing the value that was indicated on the film badge into proportions based on the measurements of the electronic dosimeters at these two plants (for data up to FY1999).
7) The data for establishments that have facilities includes some of the data of personnel engaged in radiation work at such facilities.