British Nuclear Medicine Society Helps Improve Regulations

**EUROATOM DIRECTIVE TAKES EFFECT IN GREAT BRITAIN**


When the regulations take effect in Great Britain on January 1, 1986, the final rules will include several changes suggested by the British Nuclear Medicine Society (BNMS) to ensure that medical facilities could comply with the new law.

The most important revision of the draft involved the rules for keeping nuclear medicine patients in “designated controlled areas,” explained L. Keith Harding, BSc, MB, FRCP, president of the BNMS.

**Controlled areas for patients**

Under the draft of the Ionising Radiations Regulations, patients undergoing radionuclide studies could have been restricted to controlled areas in waiting rooms and in hospital wards. A designated controlled area requires restricted access, clear demarcation of its borders, and “in most cases, physical barriers should be provided,” according to the proposed draft.

The draft did, however, include a provision for cases in which demarcation of all boundaries might have been impractical: “When a person has been administered with a radioactive substance as part of a medical exposure and is subsequently located in part of a room where the whole of that room has not been designated, suitable means for delineating this case would be a description, kept in a convenient place, of the extent of the controlled area around that patient.”

Dental and mobile x-ray equipment also created the same type of problem in delineating controlled areas.

The final rule, however, includes exemptions that cover medical facilities once the patient has been injected with a radiopharmaceutical. Employers must designate areas in which the instantaneous dose rate exceeds 7.5 μSv/h, except areas in which employees are exposed to gamma rays where the product of the activity and energy does not exceed 50 MBqMeV. After injection into a patient, this exception is relaxed to 150 MBqMeV (29 mCi of technetium-99m). Furthermore, substances emitting only beta rays which are dispersed in a live body are an additional exemption.

“These limits do not interfere with diagnostic levels of radiation exposure in the practice of medicine, and are a considerable improvement over the first draft,” said Dr. Harding, who is also consultant in nuclear medicine at the Dudley Road Hospital in Birmingham.

The deputy head of the Safety Policy and Information Services of the Health and Safety Executive, England’s regulatory agency for health policies, sent the first draft of the radiation safety regulations to the BNMS for review in October 1984. Dr. Harding and other members of the BNMS met with representatives of the Health and Safety Executive to iron out specific problems with the draft.

As the new radiation safety regulations were being promulgated, the Medical Research Council in England reported that it found no conclusive evidence of an increased risk of radiation-induced cancers among employees of the United Kingdom Atomic Energy Authority (2).

**Occupational radiation study**

According to a study published in the British Medical Journal last August, the deaths from leukemia, thyroid cancer, testicular cancer, and non-Hodgkin’s lymphoma among radiation workers were above the national average, but none of the increases were statistically significant.

Prostatic cancer was the "only condition with a clearly increased mortality in relation to exposure," said the authors. The reason for this increase could not be determined and requires further investigation, they added.

"Overall, the death rates were below those prevailing in England and Wales, but consistent with those expected in a normal workforce," said the investigators.

The study covered 3,373 deaths among 39,546 radiation workers employed between 1946 and 1979 with an average follow-up period of 16 years. About half of these employees had records of radiation exposure monitoring, and their collective recorded exposure was 660 Sv (65,954 rem).

**References**

1. The Ionising Radiations Regulations 1985, London: HMSO