

Radiation Protection Advice & Guidance no 5

PERSONAL RADIATION DOSE MONITORING

RPAG 5 Summary

Personal dosimeter are worn or not worn as determined by the relevant departmental manager or their delegate.

1) Methods of Monitoring

For measuring effective dose from external radiation sources a dosimeter may be worn on the trunk at chest or waist height. If a lead-rubber apron is worn then the dosimeter should be worn under the apron.

The equivalent dose to skin, hands, lens of eye, etc. can be measured using other suitable dosimeters. Such monitoring is usually necessary where members of staff work very close to sources of radiation, such as interventional radiologists or radiopharmacists.

The Health & Safety Executive have published advice in their HSE Information Sheet *Radiation doses - assessment and recording*^a (<http://www.hse.gov.uk/pubns/irp2.pdf>).

2) Classified Persons^b

Under the Ionising Radiations Regulations 1999 ("IRR99"^c) employees who are likely to receive an effective dose in excess of 6 millisieverts (mSv) per year, a skin dose in excess of 150 mSv per year, or an eye dose in excess of 45 mSv a year must be designated by the Trust as a CLASSIFIED PERSON.

The designation of healthcare staff as CLASSIFIED PERSONS is rarely necessary in the UK. The areas of work where it may be necessary are interventional radiology/cardiology procedures, and where radioactive substances are used. The need to designate a member of staff as a CLASSIFIED PERSONS should be identified in the prior risk assessment for the work undertaken.

Any decision to classify a person by their manager must be undertaken in consultation with the RADIATION PROTECTION ADVISER (RPA) who can advise on how to comply with the legislation. The radiation doses received by a CLASSIFIED PERSONS must be assessed and records kept until the

^a HSE, Ionising Radiation Protection Series No 6, 8/00, IRIS6, C60,

^b Same requirement as to HEY Hospitals Health & Safety at Work Policy CP137 (4/12/09) section 12.5

^c Ionising Radiations Regulations 1999 (<http://www.legislation.hmso.gov.uk/si/si1999/19993232.htm>)

employee has reached the age of 75 years, and for at least 50 years by an HSE approved dosimetry service.

The HSE have issued further guidance on “*Appropriate designation of classified persons*” at <http://www.hse.gov.uk/radiation/ionising/doses/designation.htm> . In this guidance it is emphasised that classification is a last resort if doses cannot be kept below $3/10^{\text{th}}$ of the dose limits by any reasonable means.

3) Other Employees^d

For employees who are not CLASSIFIED PERSONS direct monitoring is not compulsory. However, the employer must be able to demonstrate by personal monitoring or other suitable measurements that doses to persons entering controlled areas do not exceed

- For employees, the trigger levels which would require them to become classified persons
- For others (other than those entering the area in order to undergo a medical exposure), the public dose limits

Therefore, in order to monitor the effectiveness of local rules and systems of work, and to help ensure that the annual dose received is less than $3/10^{\text{th}}$ of any dose limit, personal dosimeters are issued to selected members of staff. The doses recorded by these dosimeters should be assessed regularly by the head of department, or their delegate who may also be the person appointed as RADIATION PROTECTION SUPERVISOR (RPS).

Most staff working regularly in CONTROLLED AREAS will wear a dosimeter as directed by that area's RPS in accordance with the LOCAL RULES.

4) Employees Responsibility^e

The Health & Safety Executive has stated that "*employees who persistently fail to wear, look after or return their dosimeters promptly are liable to enforcement action by inspectors up to and including prosecution under Section 7 of the HSW Act 1974.*" Therefore, cases where employees have acted in this manner may need pursuing through the employer's disciplinary procedure.

By law, employees must not knowingly expose themselves or any other person to a radiation dose greater than is reasonably necessary for the purposes of their work.

^d Same requirement as to HEY Hospitals Health & Safety at Work Policy CP137 (4/12/09) section 12.5

^e Same requirement as to HEY Hospitals Health & Safety at Work Policy CP137 (4/12/09) section 12.5

5) Formal Dose Investigation Levels^f

A formal investigation shall be undertaken when a member of staff receives a dose in excess of the FORMAL DOSE INVESTIGATION LEVEL (“DIL”). Some suggested values of DIL are published by the RPA on the Radiation Physics website (www.hullrad.org.uk). It may be appropriate for individual departments, in consultation with the RPA, to adopt lower DIL’s than these or in very exceptional circumstances higher DIL’s. Levels adopted must be recorded in the appropriate Local Rules. DIL’s cannot exceed annual dose limits.

By law, the RPA must always be consulted where an accidental dose of more than 6 mSv effective dose has been received. If a DIL is exceeded, a formal investigation must be undertaken by the head of department, or a suitable person appointed by the head of department. This investigation should be carried out in consultation with the RPA, and include the RPS for the area concerned. The RPS should also investigate where doses are in excess of normal values for that group of staff and report to the head of department. The results of any formal investigation should be recorded. Where a high dosimeter reading is the result of a lost or damaged dosimeter, this should be recorded by the RPS.

Mr John Saunderson,
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Changes since last version (2003)

General revision. Reference to new radiation section of Hull & East Yorkshire Hospitals Health & Safety at Work Policy. Dose badges to be worn under lead aprons.

^f Same requirement as to HEY Hospitals Health & Safety at Work Policy CP137 (4/12/09) section 12.5