

Radiation Protection Advice & Guidance no 22

FORMAL DOSE INVESTIGATION LEVELS (DIL's)

RPG 22 Summary

If any personal dosimeter result exceeds the levels below, the RPS should undertake a formal investigation.

A formal investigation must be undertaken when a member of staff receives a dose in excess of an employer's or department's formal dose investigation level ("DIL"). Some suggested values of DIL are published by the RADIATION PROTECTION ADVISER (RPA) below. 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 (see appendix).

If a DIL is exceeded, then a formal investigation must be undertaken by the employer or a suitable person appointed by employer (e.g. head of department). This investigation should be carried out in consultation with the RPA, and include the RADIATION PROTECTION SUPERVISOR (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.

For pregnant staff

For all department and modalities, body dosimeter

- 1 mSv during declared term¹,
- 0.10 mSv a month

Dental Radiology

- 1 mSv per year² 0.16 mSv per two months³ 0.08 mSv per one month⁴

¹ IRR99 legal limit for foetus is 1 mSv during declared term.

² Recommended in para. A4.12, Guidance Notes for Dental Practitioners on the Safe Use of X-Ray Equipment, NRPB, 2001

³ 1 mSv / 6

⁴ 1mSv / 12 months

Nuclear Medicine

- Effective dose 0.50 mSv a month⁵ (*this may be averaged over 3 months*)
- Finger dose 12.50 mSv a month⁶ (*this may be averaged over 3 months*)

Radiology (including fluoroscopy)

- Whole body 0.35 mSv in a month
- Extremity 20 mSv in two months

Radiology (no fluoroscopy)

- Whole body 0.10 mSv in a month

Cardiology

- Whole body 0.10 mSv in a month
- Extremity 1 mSv in two months

DEXA, Mammography, Maxillofacial, Medical & Radiation Physics, Orthopaedics, Plastics & Urology

- Whole body 0.10 mSv in a month

Radiotherapy (external beam and brachytherapy using remote-controlled afterloading)

- Whole body 0.10 mSv in a month
- Finger dose 1 mSv in a month

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⁵ yearly / 12

⁶ yearly / 12

APPENDIX A: Dose Limits

Unclassified staff, over 18 years of age, should receive less than $\frac{3}{10}$ th of any dose limit, i.e.

- Body: < 6 mSv in a year
- Eyes: < 50 mSv in a year
- Hands: < 150 mSv in a year

Staff who may receive doses greater than these $\frac{3}{10}$ th values will need to be designated as a CLASSIFIED PERSONS under regulation 20 of the Ionising Radiations Regulations 1999 (IRR99). It is recommended that an RPA is consulted before so designating any person. The dose received by classified persons must not exceed the IRR99 dose limits.

APPENDIX B: Useful References

Working with ionising radiation, IRR99 Approved Code of Practice and Guidance, HSE, 2000, paras. 152-162

Medical and Dental Guidance Notes, IPEM, 2002, paras. 1.97-1.99

Changes since last version (25/10/02)

First paragraph reworded to say that employers/departments must actively set DIL's in their Local Rules and those listed here are recommendations.

DIL's have been revised following a 2009 review of doses to staff in the Hull & East Yorkshire Hospitals' departments by Craig Moore.

This version current as of 9/10/09
