

**RADIATION PROTECTION  
POLICY AND PROCEDURES  
NUMBER : 22**

**FORMAL INVESTIGATION LEVELS of DOSE**

***P&P 22 Summary***

*If personal dosimeter results exceeds the levels below, the RPS should undertake a formal investigation.*

A formal investigation shall be undertaken when a member of staff receives a dose in excess of the following formal investigation levels (FIL). It may be appropriate for individual departments, in consultation with the RPA, to adopt lower FILs, or in exceptional circumstances higher FILs. Such levels should be recorded in the appropriate Local Rules. FILs cannot exceed annual dose limits (see appendix).

Where FILs are exceeded, a formal investigation must be undertaken by the RPS, in consultation with the RPA. RPSs should also investigate where doses are in excess of normal values for that group of staff. The results of any FIL should be recorded. Where a high dosimeter reading is the result of a lost or damaged dosimeter, this should be recorded by the RPS.

**Dental Radiology**

- 1 mSv per year<sup>1</sup>                      166 uSv per two months<sup>2</sup>                      85 uSv per one month<sup>3</sup>

**Nuclear Medicine**

- 6 mSv a year effective dose<sup>4</sup>                      500 uSv a month<sup>5</sup>
- Hand dose of 12 mSv a month<sup>6</sup>

For pregnant staff

- 1 mSv during declared term                      125 uSv a month

<sup>1</sup> Recommended in para. A4.12, Guidance Notes for Dental Practitioners on the Safe Use of X-Ray Equipment, NRPB, 2001

<sup>2</sup> 1 mSv / 6

<sup>3</sup> 1mSv / 12 months

<sup>4</sup> Guidance Notes para. 1.97 recommend FIL between 2 and 6mSv. Based on previous records.

<sup>5</sup> yearly /12

<sup>6</sup> yearly / 12

## **Diagnostic Radiology**

### **General rooms, mobile radiography, mammography, bone densitometry**

For staff working in general rooms, etc., i.e. not fluoroscopy, the D.I.L. is

- 2 mSv a year<sup>7</sup>      166 uSv a month<sup>8</sup>

For pregnant staff

- 1 mSv during declared term      125 uSv a month

### **Fluoroscopy (including CT fluoroscopy, interventional radiology, mobile fluoroscopy)**

For staff working in fluoroscopy, the D.I.L. is

- 6 mSv a year effective dose<sup>9</sup>
- 300 uSv a month under-apron dose
- 5500 uSv a month over-apron dose<sup>10</sup>
- Hand dose of 7.5 mSv a month

For pregnant staff

- 1 mSv during declared term,
- 125 uSv a month under-apron
- 1500 uSv a month over-apron

## **Radiotherapy**

For staff working with brachytherapy

- 2 mSv a year<sup>11</sup>      300 uSv in a month<sup>12</sup>
- Hand dose of 7.5 mSv a month

For other staff

- 2 mSv a year<sup>13</sup>      166 uSv a month<sup>14</sup>

For pregnant staff

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<sup>7</sup> Guidance Notes para. 1.97 recommend FIL between 2 and 6mSv

<sup>8</sup> 2mSv / 12 months

<sup>9</sup> Guidance Notes para. 1.97 recommend FIL between 2 and 6mSv. Based on previous dose records.

<sup>10</sup> 6mSv / 12 months / 8.5%, where 8.5% is transmission of scatter from 90kVp X-rays through 0.35 mm lead

<sup>11</sup> Guidance Notes para. 1.97 recommend FIL between 2 and 6mSv

<sup>12</sup> 6mSv / 20

<sup>13</sup> Guidance Notes para. 1.97 recommend FIL between 2 and 6mSv

- 1 mSv during declared term      125 uSv a month

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### **APPENDIX A: Dose Limits**

For unclassified staff, over 18 years of age, these are

- Whole body: 6 mSv in a year
- Eyes: 50 mSv in a year
- Hands, etc.: 150 mSv in a year

### **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

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