

Health Protection (Ionising Radiation)

IONISING RADIATIONS REGULATIONS, 1995

1995-09

REVOKED

Subsidiary

1995/082

Regulations made under s.2.

IONISING RADIATIONS REGULATIONS, 1995

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(LN. 1995/082)

15.6.1995

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PART I.

INTERPRETATION AND GENERAL.

Title and commencement.

1. These regulations may be cited as the Ionising Radiations Regulations 1995 and subject to regulation 40 shall come into effect on the 15th day of June 1995.

Interpretation.

2.(1) In these regulations, unless the context shall otherwise require —

“appointed doctor” means a registered medical practitioner who is for the time being appointed in writing by the Government for the purposes of these regulations;

“approved” means approved for the time being by the Government;

“approved dosimetry service” means a dosimetry service approved in accordance with regulation 15;

“calendar year” means a period of twelve calendar months beginning with 1st January;

“classified person” means a person who has been so designated in accordance with regulation 9(1);

“contamination” means the contamination by any radioactive substance of any surface (including any surface of the body or clothing) or any part of absorbent objects or materials or the contamination of liquids or gases by any radioactive substance;

“controlled area” means an area which has been so designated by the employer in accordance with regulation 8(1) or (3);

“dose” means, in relation to ionising radiation, any dose quantity or sum of dose quantities mentioned in Schedule 1;

“dose limit” means, in relation to persons of a specified class, the dose limit specified in Schedule 1 in relation to a person of that class and is with respect to —

(a) the whole body, the relevant dose limit specified in Part I;

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- (b) any individual organ or tissue except the lens of the eye, the relevant dose limit specified in Part II;
- (c) the lens of the eye, the relevant dose limit specified in Part III;
- (d) the abdomen of a woman of reproductive capacity, the dose limit specified in Part IV; and
- (e) the abdomen of a pregnant woman, the dose limit specified in Part V;

“dose rate” means, in relation to a place, the rate at which a person or part of a person would receive a dose of ionising radiation from external radiation if he were at that place and “instantaneous dose rate” means a dose rate at that place averaged over 1 minute and “time average dose rate” means a dose rate at that place averaged over any 8 hour working period;

“dose record” means, in relation to a person, the record of the doses received by that person as a result of his exposure to ionising radiation, being the record made and maintained on behalf of the employer by the approved dosimetry service in accordance with regulation 13(3)(a);

“external radiation” means, in relation to a person, ionising radiation coming from outside the body of that person;

“health record” means, in relation to an employee, the record of medical surveillance of that employee maintained by the employer in accordance with regulation 16(2);

“internal radiation” means, in relation to a person, ionising radiation coming from inside the body of that person;

“local rules” means rules made by an employer in accordance with regulation 11(1);

“maintained”, where the reference is to maintaining plant, apparatus or facilities, means maintained in an efficient state, in efficient working order and good repair;

“medical exposure” means exposure of a person to ionising radiation for the purpose of his medical or dental examination or treatment which is conducted under the direction of a suitably qualified person and includes any such examination or treatment conducted for the purposes of research;

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“overexposure” means any exposure of a person to ionising radiation to the extent that the dose received by that person causes a dose limit relevant to that person to be exceeded;

“qualified person” means a person who has been so appointed for the purposes of regulation 24(3) in accordance with regulation 10(7);

“radiation generator” means any apparatus in which charged particles are accelerated in a vacuum vessel through a potential difference of more than 5 kilovolts (whether in 1 or more steps) except an apparatus in which the only such generator is a cathode ray tube or visual display unit which does not cause under normal operating conditions an instantaneous dose rate of more than $5\mu\text{Svh}^{-1}$ at a distance of 50 mm from any accessible surface;

“radioactive substance” means any substance having an activity concentration of more than 100 Bqg⁻¹ and any other substance which contains 1 or more radionuclides whose activity cannot be disregarded for the purposes of radiation protection, and the term includes a radioactive substance in the form of a sealed source;

“radiation protection adviser” means a person who has been so appointed in accordance with regulation 10(1);

“registered” in relation to a medical practitioner means registered under the Medical and Health Ordinance;

“sealed source” means a radioactive substance bonded wholly within a solid inactive material or encapsulated within an inactive receptacle of, in either case, sufficient strength to prevent any dispersion of the substance under reasonably foreseeable conditions of use and shall include the bonding or encapsulation, except that —

- (a) where such bonding or encapsulation is solely for the purpose of storage, transport or disposal, the radioactive substance together with its bonding or encapsulation shall not be treated as a sealed source; and
- (b) “sealed source” shall not include any radioactive substance inside a nuclear reactor or any nuclear fuel element;

“short-lived daughters of radon 222” means polonium 218, lead 213, bismuth 214 and polonium 214;

“supervised area” means an area which has been so designated by the employer in accordance with regulation 8(2) or (3);

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“trainee” means a person aged 16 years or over (including a student or cadet) who is undergoing instruction or training which involves operations which would, in the case of an employee, be work with ionising radiation;

“transport” means, in relation to a radioactive substance, carriage of that substance on a road within the meaning of section 2(1) of the Traffic Ordinance or through another public place (whether on a conveyance or not), or by sea or air, and in the case of transport on a conveyance, a substance shall be deemed as being transported from the time that it is loaded onto the conveyance for the purpose of transporting it until it is unloaded from that conveyance, but a substance shall not be considered as being transported if —

- (a) it is transported by means of a pipeline or similar means; or
- (b) it forms an integral part of a conveyance and is used in connection with the operation of that conveyance;

“woman of reproductive capacity” means a woman who is made subject to the additional dose limit for a woman of reproductive capacity specified in Part IV of Schedule 1 by an entry in her health record made by an appointed doctor;

“work with ionising radiation” means any work —

- (a) involving the production, processing, handling, use, holding, storage, moving, transport or disposal of any radioactive substance;
- (b) involving the operation or use of any radiation generator; or
- (c) in which there is any exposure of a person to an atmosphere containing the short-lived daughters of radon 222 at a concentration in air, averaged over any 8 hour working period, of greater than $6.24 \times 10^{-7} \text{ Jm}^{-3}$ (0.03 working levels);

“working level” means the special unit of potential alpha energy concentration in air and is any combination of short-lived daughters of radon 222 in unit volume of air such that the total potential alpha energy concentration for complete decay to lead 210 is $2.08 \times 10^{-5} \text{ Jm}^{-3}$.

(2) In these regulations, unless the context shall otherwise require, any reference to —

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- (a) an employer includes a reference to a self-employed person and any duty imposed by these regulations on an employer in respect of his employee shall extend to a self-employed person in respect of himself;
 - (b) an employee includes a reference to —
 - (i) a self-employed person, and
 - (ii) a trainee who but for the operation of this sub-paragraph and sub-regulation (4) would not be classed as an employee;
 - (c) exposure to ionising radiation is a reference to exposure to ionising radiation arising from work with ionising radiation;
 - (d) a person entering, remaining in or working in a controlled or supervised area includes a reference to any part of a person entering, remaining in or working in any such area.
- (3) Except in regulation 33, in these regulations any reference to the exposure of a person to ionising radiation shall not include a reference to the medical exposure of that person.
- (4) For the purposes of these regulations—
- (a) the word “work” shall include any instruction or training which a person undergoes as a trainee and the expression “at work” shall be construed accordingly; and
 - (b) a trainee shall, while he is undergoing instruction or training, be treated as the employee of the person whose undertaking (whether for profit or not) is providing that instruction or training and that person shall be treated as the employer of that trainee except that the duties to the trainee imposed upon the person providing instruction or training shall only extend to matters under the control of that person.
- (5) In these regulations where reference is made to a quantity specified in a numbered column of Schedule 2, that quantity shall be treated as exceeded if —
- (a) where only 1 radionuclide is involved, the quantity of that radionuclide exceeds the quantity specified in the appropriate entry in Part I of Schedule 2; or
 - (b) where more than 1 radionuclide is involved, the quantity ratio calculated in accordance with Part II of Schedule 2 exceeds 1.

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(6) Where any duty is imposed by these regulations on an employer in respect of the exposure to ionising radiation of persons other than his employees, that duty shall only be imposed in respect of the exposure of those persons to ionising radiation arising from work with ionising radiation undertaken by that employer.

(7) Nothing in these regulations shall be construed as preventing a person from entering or remaining in a controlled area or a supervised area where that person enters or remains in any such area —

- (a) in the due exercise of a power of entry conferred on him by or under any statutory requirement; or
- (b) for the purpose of undergoing a medical exposure.

(8) A reference in these regulations to the Government shall, where the Government has by notice in the Gazette appointed a person to be the competent authority for the purposes or one or more of the purposes of these regulations and to the extent of that appointment, be deemed to be a reference to that person, and not to be a reference to the Government.

Application of these regulations in relation to the short-lived daughters of radon 222.

3. These regulations shall apply to work with ionising radiation in which a person is exposed to the short-lived daughters of radon 222 as they apply to other work with ionising radiation, except that the following regulations shall not apply in relation to such exposure, namely —

- (a) regulation 14 (accident dosimetry);
- (b) regulation 18 (sealed sources and articles containing or embodying radioactive substances);
- (c) regulation 19 (accounting for radioactive substances);
- (d) regulation 20 (keeping of radioactive substances);
- (e) regulation 21 (transport and moving of radioactive substances);
- (f) regulation 22 (washing and changing facilities);
- (g) regulation 31 (notification of certain occurrences);
- (h) regulation 33 (equipment used for medical exposure); and

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- (j) regulation 34 (misuse of or interference with sources of ionising radiation).

Co-operation between employers.

4. Where work with ionising radiation undertaken by an employer is likely to give rise to the exposure of ionising radiation of the employee of another employer, the employers concerned shall co-operate by the exchange of information or otherwise to the extent requisite to ensure that each such employer is enabled to comply with the requirements of these regulations in so far as his ability to comply depends upon such co-operation.

Notification of certain work with ionising radiation.

5. (1) This regulation shall apply to any work with ionising radiation except work specified in Schedule 3.

(2) Subject to paragraph (3) and regulation 40(1), an employer shall not undertake for the first time work with ionising radiation to which this regulation applies, unless at least 28 days before commencing that work or before such shorter time as the Government may agree, he has notified the Government of his intention to carry out such work and has furnished it with the particulars specified in Schedule 4.

(3) Where the only work with ionising radiation being undertaken is work in which a person is exposed to the short-lived daughters of radon 222, it shall be a sufficient compliance with sub-regulation (2) if the employer having control of the premises where the work is carried on makes the notification required by that paragraph forthwith after the work has commenced.

(4) Where an employer has notified work in accordance with sub-regulation (2), the Government may, by notice in writing served on him, require that employer to provide such additional particulars of that work as it may reasonably require, being any or all of the particulars specified in Schedule 5 and in such a case the employer shall furnish those particulars in such time as is specified in the notice or in such longer time as the Government may subsequently agree.

(5) A notice under sub-regulation (4) may require the employer to notify the Government or such other authority as is specified in the notice of any of the particulars specified in Schedule 5 before each occasion on which he commences work with ionising radiation.

(6) Where an employer has notified work in accordance with sub-regulation (2) and subsequently makes a material change in that work which would affect the particulars so notified, he shall forthwith notify the Government of that change.

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(7) Nothing in sub-regulation (6) shall be taken as requiring the cessation of work with ionising radiation to be notified in accordance with that sub-regulation except where —

- (a) the site or any part of the site in which the work was carried on has been or is to be vacated; and
- (b) the work involved a radioactive substance other than a radioactive substance solely in the form of a sealed source.

(8) In any proceedings against a person for an offence consisting of a contravention of sub-regulation (2), it shall be a defence for that person to prove that —

- (a) he neither knew nor had reasonable cause to believe that he had undertaken or might be required to undertake work with ionising radiation; and
- (b) in a case where he discovered that he had undertaken or was undertaking work with ionising radiation, he had forthwith notified the Government of the particulars specified in Schedule 4.

(9) Without out prejudice to the provisions of any other law every employer shall obtain the prior written approval of the Government for —

- (a) proposed large installations involving a hazard of exposure to ionising radiation; and
- (b) the proposed siting of such installations.

PART II. **DOSE LIMITATION.**

Restriction of exposure.

6. (1) Every employer shall, in relation to any work with ionising radiation that he undertakes, take all necessary steps to restrict so far as reasonably practicable the extent to which employees and other persons are exposed to ionising radiation.

(2) Without prejudice to the generality of sub-regulation (1), every employer shall, so far as reasonably practicable, achieve the restriction of exposure to ionising radiation required under that sub-regulation by means of engineering controls and design features which include shielding, ventilation, containment of radioactive substances and minimisation of

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contamination and in addition by the provision and use of safety features and warning devices.

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(3) In addition to taking the steps required under sub-regulation (2), every employer shall provide such systems of work as will, so far as reasonably practicable, restrict the exposure to ionising radiation of employees and other persons and, in the case of employees or other persons who enter or remain in controlled or supervised areas, provide those persons with adequate and suitable personal protective equipment (including respiratory protective equipment) unless —

- (a) it is not reasonably practicable to further restrict exposure to ionising radiation by such means; or
- (b) the use of personal protective equipment of a particular kind is not appropriate having regard to the nature of the work or the circumstances of the particular case.

(4) An employee who is engaged in work with ionising radiation —

- (a) shall not knowingly expose himself or any other person to ionising radiation to an extent greater than is reasonably necessary for the purposes of his work, and shall exercise reasonable care while carrying out such work;
- (b) shall make full and proper use of any personal protective equipment provided in pursuance of sub-regulation (3); and
- (c) shall forthwith report to his employer any defect he discovers in any personal protective equipment.

(5) The employer shall ensure that —

- (a) no radioactive substance in the form of a sealed source is held in the hand or manipulated directly by hand unless the instantaneous dose rate to the skin of the hand does not exceed $75\mu\text{Svh}^{-1}$; and
- (b) so far as is reasonably practicable, no unsealed radioactive substance nor any article containing a radioactive substance is held in the hand or directly manipulated by hand.

(6) No employee shall eat, drink, smoke, take snuff or apply cosmetics in any area which the employer has designated as a controlled area by virtue of the provisions of Part II of Schedule 6 (which relates to internal radiation) except that an employee may drink from a drinking fountain so constructed that there is no contamination of the water.

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(7) Every employer shall ensure that nursing mothers are not employed in work involving a high risk of radioactive contamination and that, if necessary, a special watch is kept for bodily radioactive contamination.

Dose limits.

7. Every employer shall ensure that his employees and other persons are not exposed to ionising radiation to an extent that any dose limit specified in Schedule 1 for each such employee or other person, as the case may be, is exceeded.

PART III.

REGULATION OF WORK WITH IONISING RADIATION.

Designation of controlled and supervised areas.

8. (1) For the purpose of designating as a controlled area any area in which doses of ionising radiation are likely to exceed three-tenths of any dose limit for employees aged 18 or over, every employer shall designate as a controlled area any area under his control where an employee can be exposed to ionising radiation and which is required to be so designated by virtue of the provisions of Schedule 6.

(2) Every employer shall designate as a supervised area any area under his control, not being an area designated as a controlled area, in which any person is likely to be exposed to ionising radiation to an extent which exceeds one third of the extent to which he would be exposed in any area which is required to be designated as a controlled area in accordance with sub-regulation (1).

(3) Notwithstanding the provisions of sub-regulations (1) and (2), an employer may designate any area under his control, other than an area specified in sub-regulation (1), as a controlled area or a supervised area and any area so designated shall be treated for all purposes as an area designated under sub-regulation (1) or (2) as the case may be.

(4) An employer shall not intentionally create in any area conditions which would require that area to be designated as a controlled area unless that area is for the time being under his control.

(5) Every employer shall ensure that each controlled area and supervised area that he has designated is adequately described in local rules and that, in the case of any controlled area —

- (a) the area is physically demarcated or, where this is not reasonably practicable, delineated by some other suitable means; and

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(b) access to the area is restricted by suitable means.

(6) The employer shall not permit any employee or other person to enter or remain in a controlled area unless that employee or other person either —

(a) is a classified person; or

(b) enters or remains in the area under a written system of work such that —

(i) in the case of an employee aged 18 years or over he does not receive in any calendar year a dose of ionising radiation exceeding three-tenths of any relevant dose limit; or

(ii) in the case of any other person, he does not receive in any calendar year a dose of ionising radiation exceeding any relevant dose limit.

(7) An employer shall not permit an employee or other person to enter or remain in a controlled area in accordance with a written system of work under sub-regulation (6)(b), unless he can demonstrate, by personal dose assessment or other suitable measurements, that the doses are restricted in accordance with that sub-regulation.

Designation of classified person.

9. (1) Subject to sub-regulation (3), the employer shall designate as classified persons those of his employees who are likely to receive a dose of ionising radiation which exceeds three-tenths of any relevant dose limit and shall forthwith inform those employees that they have been so designated.

(2) The employer shall not cease to treat any employee as a classified person except at the end of a calendar year, unless he is required to do so under regulation 16(6) by an appointed doctor, and in any case where he ceases to treat an employee as a classified person the employer shall forthwith inform the employee that he is no longer a classified person.

(3) An employer shall not designate an employee as a classified person unless —

(a) that employee is aged 18 years or over; and

(b) subject to regulation 40(2) (which relates to transitional provisions), an appointed doctor has certified in the health record that, in his professional opinion, that employee is fit to be designated as a classified person.

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Appointment of radiation protection advisers and qualified persons.

10. (1) Subject to regulation 40(3) (which relates to transitional provisions) and sub-regulations (3) and (6), in any case where —

- (a) any employee is exposed to an instantaneous dose rate which exceeds $7.5 \mu\text{Svh-1}$; or
- (b) the employer has designated a controlled area which persons enter,

the employer carrying out work with ionising radiation shall appoint one or more radiation protection advisers for the purpose of advising him as to the observance of these regulations and as to other health and safety matters in connection with ionising radiation.

(2) An employer who appoints a radiation protection adviser for the purposes of regulation 32(2) or in any other case where he considers it requisite in relation to the work with ionising radiation that he undertakes shall be deemed to have appointed that radiation protection adviser under sub-regulation (1).

(3) No employer shall appoint a person as a radiation protection adviser unless —

- (a) that person possesses the appropriate qualifications, experience and qualities set out in Schedule 7;
- (b) he has notified the Government in writing of the intended appointment at least 28 days in advance or, where this is not practicable, such shorter time in advance as the Government may agree and that notification shall include the name of the person that he intends to appoint and particulars of his qualifications and experience and the scope of the advice he is required to give; and
- (c) he has received from the Government an acknowledgment in writing to the notification.

(4) The employer shall forthwith notify the Government of any material change in relation to a radiation protection adviser which would affect the particulars notified in accordance with sub-regulation (3)(b).

(5) The employer shall provide any radiation protection adviser whom he appoints with adequate information and facilities for the performance of his functions and shall whenever appropriate consult that adviser.

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(6) Nothing in sub-regulation (1) shall require an employer to appoint a radiation protection adviser where the only work with ionising radiation undertaken by the employer is work specified in Schedule 3.

(7) Sub-regulations (3), (4) and (5) shall apply to the appointment of a qualified person for the purposes of regulation 24(3) as they apply to the appointment of a radiation protection adviser, except that the notification to the Government under sub-regulation (3)(b) shall not be required to include particulars of the advice he is required to give.

Local rules, supervision and radiation protection supervisors.

11. (1) Every employer who undertakes work with ionising radiation shall make and set down in writing local rules for the purpose of enabling the work with ionising radiation to be carried on in compliance with the requirements of these regulations and shall ensure that such of those rules as are relevant are brought to the attention of those employees and other persons who may be affected by them.

(2) The employer shall ensure that the work with ionising radiation is supervised to the extent necessary to enable that work to be carried on in accordance with the requirements of these regulations and shall take all reasonable steps to ensure that any local rules that are relevant to that work are observed.

(3) Subject to regulation 40(4) (which relates to transitional provisions), where the work with ionising radiation carried on by the employer is any such work other than that specified in Schedule 3, the employer shall appoint one or more persons as radiation protection supervisors for the purposes of securing compliance with sub-regulation (2) and any such appointments shall be in writing and the names of persons so appointed shall be included in the local rules.

(4) Where there is a serious risk of exposure or radioactive contamination the employer shall create a specialised radiation protection unit, which may be shared by several establishments.

(5) The unit created in accordance with sub-regulation (4) shall be distinct from production and operation units in that establishment.

Information, instruction and training.

12. Every employer shall ensure that —

- (a) subject to regulation 40(5) (which relates to transitional provisions), those of his employees who are engaged in work with ionising radiation receive such information, instruction and training as will enable them to conduct that work in accordance with the requirements of these regulations;

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- (b) adequate information is given to other persons who are directly concerned with the work with ionising radiation carried on by the employer to ensure their health and safety so far as is reasonably practicable;
- (c) classified persons and trainees are informed of the health hazard, if any, associated with their work, the precautions to be taken and the importance of complying with the medical and technical requirements and are given appropriate training in the field of radiation protection; and
- (d) those of his employees who are engaged in work with ionising radiation and who are women are informed of the possible hazard arising from ionising radiation to the foetus in early pregnancy and of the importance of informing the employer as soon as they discover that they have become pregnant.

PART IV.

DOSIMETRY AND MEDICAL SURVEILLANCE.

Dose assessment.

13. (1) This regulation shall apply in relation to —

- (a) any employee who is designated as a classified person; and
- (b) any employee who is made subject to this regulation by an approved arrangement made under regulation 17(1).

(2) Every employer shall ensure that assessments are made of all significant doses of ionising radiation received by each of his employees to whom this regulation relates and for this purpose shall make suitable arrangements with an approved dosimetry service for the making of systematic measurements and assessments of such doses —

- (a) by the use of suitable personal dosimeters which shall be worn for appropriate periods; or
- (b) where the use of such dosimeters is inappropriate, by means of other suitable measurements.

(3) For the purposes of sub-regulation (2), the arrangements that the employer makes with the approved dosimetry service shall include requirements for that service —

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- (a) to make and maintain dose records relating to each employee to whom this regulation relates and to keep dose records or a copy thereof for at least 50 years from when they were made;
- (b) to furnish the employer at appropriate intervals with suitable summaries of the dose records maintained in accordance with paragraph (a);
- (c) when required by the employer, to furnish him with such copies of the dose record relating to any of his employees as the employer may require;
- (d) when required by the employer, to make a record of the information concerning the dose assessment relating to a person who ceases to be an employee of the employer, and to send that record to the Government and a copy thereof to the employer forthwith, and a record so made is referred to in this regulation as a “termination record”;
- (e) within 3 months, or such longer period as the Government may agree, of the end of each calendar year to send to the Government summaries of all current dose records relating to that year;
- (f) to send to the Government forthwith appropriate details of any employee who has received in any calendar quarter a dose of ionising radiation greater than three-fifths of the annual dose limit for employees aged 18 years or over specified in Part I of Schedule 1 (whole body dose limit), and in this paragraph “calendar quarter” means the 3 calendar months beginning with 1st January, 1st April, 1st July or 1st October;
- (g) when required by the Government to furnish it with copies of any dose record; and
- (h) to make an entry in a dose record in accordance with sub-regulation (7).

(4) The employer shall make arrangements with the approved dosimetry service for that service to keep suitable summaries of any appropriate dose records which he holds relating to those of his employees whom he has designated, or intends to designate, as classified persons under these regulations, whether or not those records were made in pursuance of a requirement imposed by or under any statutory requirement and the employer shall lodge those summaries with the service as soon as practicable after designation.

(5) The employer shall —

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- (a) at the request of an employee and on reasonable notice being given, obtain from the approved dosimetry service and give to the employee a copy of the dose record which relates to him; and
- (b) when an employee ceases to be employed by the employer, take all reasonable steps to send a copy of his termination record to that employee.

(6) The employer shall keep a copy of the summary of the dose record received from the approved dosimetry service for at least 2 years from the end of the calendar year to which the summary relates.

(7) In any case where a dosimeter is lost or destroyed or it is not possible to assess the dose received over a period by an employee to whom sub-regulation (1) relates, the employer shall make an investigation of the circumstances of the case with a view to estimating the dose received by the employee during that period and either —

- (a) in a case where there is adequate information to estimate the dose received by the employee, shall arrange for the approved dosimetry service to enter that estimated dose in the dose record of the employee; or
- (b) in a case where there is inadequate information to estimate the dose received by the employee, shall arrange for the approved dosimetry service to enter a notional dose in the dose record of the employee which shall be the proportion of the total annual dose limit for the relevant period,

and in either case the employer shall arrange for the approved dosimetry service to identify the entry in the dose record as an estimated dose or a notional dose as the case may be.

(8) Any employee to whom sub-regulation (1) or regulation 27(4)(b) relates shall comply with any reasonable requirement imposed on him by his employer for the purposes of making the measurements and assessments required under sub-regulation (2) and regulation 14(1).

Accident dosimetry.

14. (1) Where an accident, occurrence or incident occurs which is likely to result in a person being exposed to ionising radiation to an extent greater than three-tenths of any relevant dose limit, the employer shall —

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- (a) in the case of an employee to whom regulation 13 relates, arrange for a dose assessment to be made by the approved dosimetry service forthwith;
 - (b) in the case of an employee to whom a dosimeter or other device has been issued in accordance with regulation 27(4)(b), arrange for that dosimeter or device to be examined and for the dose received to be assessed by the approved dosimetry service;
 - (c) in any other case, arrange for the dose to be assessed by an appropriate means.
- (2) In such a case, the employer shall —
- (a) take all reasonably practicable steps to inform each person for whom a dose assessment has been made of the result of that assessment; and
 - (b) keep a record of the assessment or a copy thereof for at least 50 years from the date of the relevant accident, occurrence or incident.

Approved dosimetry service.

15. The Government may by a certificate in writing, which may be made subject to conditions and may be revoked in writing at any time, approve a suitable dosimetry service for such of the purposes of regulations 13, 14 and 27 as are specified in the certificate.

Medical surveillance.

16. (1) This regulation shall apply to —
- (a) classified persons and persons whom the employer intends to classify;
 - (b) employees who have received an overexposure and are not classified persons;
 - (c) employees who are engaged in work with ionising radiation subject to conditions imposed by an appointed doctor under sub-regulation (6); and
 - (d) employees who are subject to this regulation by an approved arrangement made under regulation 17(1).

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(2) The employer shall ensure that in respect of each of his employees to whom this regulation applies, a health record is made and maintained, containing the following particulars as appropriate, that is to say —

- (a) the nature of the employment;
- (b) the results of any pre-employment medical examination and periodic reviews of health;
- (c) a record of doses to check that relevant dose limits have not been exceeded; and
- (d) a record of doses received in the course of overexposures,

and that that record or a copy thereof is kept for at least 50 years from the date of the last entry made in it.

(3) In relation to a classified person or a person whom the employer intends to classify, medical surveillance by an appointed doctor shall be based on the principles that govern occupational medicine generally and shall, as appropriate include —

- (a) a pre-employment medical examination to determine an employee's fitness for the first post for which he is being considered, which examination shall include an inquiry into his medical history including all known previous exposures to ionising radiation resulting from his employment or from medical examination and treatment and also clinical and other investigations necessary for assessing his general state of health;
- (b) periodic reviews of health of each employee at least once in every period of twelve months after the examination referred to in paragraph (a) or the previous review or such shorter time as the appointed doctor may consider appropriate to determine whether such employee remains fit to perform his duties;
- (c) without prejudice to the generality of paragraph (b) such medical surveillance after cessation of work as an approved doctor may indicate to be necessary for as long as he considers it necessary to safeguard the health of the person concerned;
- (d) in addition to the periodic reviews of health mentioned in paragraph (b) any special examinations considered by the approved doctor to be necessary.

(4) Subject to regulation 40(6) (which relates to transitional provisions) and to sub-regulation (5), the employer shall ensure that there is a valid

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entry in the health record of each of his employees to whom this regulation relates (other than employees who have received an overexposure and who are not classified persons) made by an appointed doctor and an entry in the health record shall be valid —

- (a) for 12 months from the date it was made; or
- (b) for such shorter period as is specified in the entry by the appointed doctor; or
- (c) until cancelled by an appointed doctor by a further entry in the record.

(5) Where, within the period of validity of an entry in the health record made under sub-regulation (4)(a) but not earlier than one month before the end of that period, a further entry is made as respects the same employee, the further entry shall be treated for the purpose of sub-regulation (4)(a) as if made at the end of the same period.

(6) Where an appointed doctor has certified in the health record of an employee to whom this regulation relates that in his professional opinion that employee should not be engaged in work with ionising radiation or that he should only be so engaged under conditions he has specified in the health record, the employer shall not permit that employee to be engaged in work with ionising radiation except in accordance with the conditions, if any, so specified.

(7) An employee to whom this regulation applies shall, when required by his employer and at the cost of the employer, present himself during his working hours for such medical examination and tests as may be required for the purposes of sub-regulation (3) and shall furnish the appointed doctor with such information concerning his health as the appointed doctor may reasonably require.

(8) Where, for the purpose of carrying out his functions under these regulations an appointed doctor requires to inspect any workplace, the employer shall permit him to do so.

(9) The employer shall make available to the appointed doctor such records kept for the purposes of these regulations as he may reasonably require.

(10) Where an employee is aggrieved by a decision recorded in the health record by an appointed doctor he may, by an application in writing to the Government made within 3 months of the date on which he was notified of the decision, apply for that decision to be reviewed in accordance with such procedure as the Government may have approved for the purposes of this

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sub-regulation and the result of that review shall be notified to the employee and entered in his health record accordingly.

Approved arrangements for the protection of certain employees.

17. (1) Where the Government has reasonable cause to believe that it is necessary for the protection of the health or safety of any employee, it may serve on his employer a notice in writing requiring that employer to make such arrangements as it may approve as respects any or all of the following, namely —

- (a) prohibiting or regulating the entry by, or presence of, the employee in any or all controlled areas or supervised areas;
- (b) for the employee to be made subject to any or all of the requirements of regulation 13 (which relates to dose assessment); and
- (c) for the employee to be made subject to any or all of the requirements of regulation 16 (which relates to medical surveillance),

and in such a case the employer shall make such arrangements as are required in the notice.

(2) Where the employer has made approved arrangements in respect of an employee in pursuance of a notice under sub-regulation (1), he shall ensure that the employee is informed of the approved arrangements made in respect of him and that those arrangements are complied with.

(3) Where an employer has made approved arrangements with respect to an employee that employee shall comply with those arrangements.

(4) A notice served under sub-regulation (1) may take immediate effect, or may take effect on such a date as is specified in it, may be with or without limit of time and may be revoked at any time.

(5) The Government shall not issue a notice under sub-regulation (1)(a) in a case where if the notice had been issued it would have related to a decision of an appointed doctor which is being or has been reviewed under regulation 16(10).

PART V.

ARRANGEMENTS FOR THE CONTROL OF RADIOACTIVE SUBSTANCES.

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Sealed sources and articles containing or embodying radioactive substances.

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18. (1) Where a radioactive substance is used as a source of ionising radiation in work with ionising radiation, the employer shall ensure that, whenever reasonably practicable, the substance is in the form of a sealed source.

(2) The employer shall ensure that the design, construction and maintenance of any article containing or embodying a radioactive substance, including its bonding, immediate container or other mechanical protection, is such as to prevent the leakage of any radioactive substance —

- (a) in the case of a sealed source, so far as is practicable; or
- (b) in the case of any other article, so far as is reasonably practicable.

(3) Where appropriate, the employer shall ensure that suitable tests are carried out at suitable intervals, which shall in no case exceed 26 months, to detect leakage of radioactive substances from any article to which sub-regulation (2) applies and the employer shall keep a suitable record of those tests for at least 3 years from the date of the tests to which it refers.

(4) In any proceedings against an employer for an offence under sub-regulation (2) shall be a defence for that employer to prove that —

- (a) he had received and reasonably relied on a written undertaking from the supplier of the article concerned that it complied with the requirements of that paragraph; and
- (b) he had complied with the requirements of sub-regulation (3).

Accounting for radioactive substances.

19. (1) For the purpose of controlling radioactive substances which are involved in work with ionising radiation which he undertakes, every employer shall take such steps as are appropriate to account for and keep records of the quantity and location of those substances and shall keep those records or a copy thereof for at least 2 years from the date on which they were made and, in addition, for at least 2 years from the date of disposal of that radioactive substance.

(2) In relation to any particular radioactive substance the records referred to in sub-regulation (1) shall contain —

- (a) a means of identification which shall, in the case of a sealed source, be unique;

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- (b) the date of receipt;
- (c) the activity at a specified date;
- (d) the location, updated at appropriate intervals; and
- (e) the date and manner of disposal (when appropriate).

Keeping of radioactive substance.

20. (1) Every employer who undertakes work with ionising radiation shall ensure, so far as is reasonably practicable, that any radioactive substance under his control which is not for the time being in use or being moved, transported or disposed of —

- (a) is kept in a suitable receptacle; and
- (b) is kept in a suitable store.

(2) Nothing in sub-regulation (1) shall apply in relation to a radioactive substance while it is in or on the live body or corpse of a human being.

Transport and moving of radioactive substances.

21. (1) Every employer who causes or permits a radioactive substance to be transported shall ensure that, so far as is reasonably practicable, the substance is kept in a suitable receptacle, suitably labelled, whilst it is being transported.

(2) Every employer who causes or permits a radioactive substance to be transported shall ensure, so far as is reasonably practicable, that such information in writing accompanies the radioactive substance as will enable the person receiving it —

- (a) to know the nature and quantity of the radioactive substance; and
- (b) to comply with the requirements of regulations 6, 7, 8 and 18(2) and sub-regulation (1) in so far as such compliance depends on that information.

(3) Every employer who causes or permits a radioactive substance to be moved (otherwise than by transporting it) shall ensure that, so far as is reasonably practicable, the substance is kept in a suitable receptacle while it is being moved.

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(4) In any proceedings against an employer for an offence under sub-regulation (1) or (2), it shall be a defence for that employer to prove that it was reasonable for him to rely upon information given to him by some other person under sub-regulation (2).

(5) In this regulation “a suitable receptacle” means one that satisfies the current packaging and labelling requirements of the International Atomic Energy Agency (IAEA) in relation to the safe transport of radioactive materials.

(6) Nothing in sub-regulations (1) to (5) shall apply in relation to a radioactive substance while it is in or on the live body or corpse of a human being.

Washing and changing facilities.

22. Subject to regulation 40(7) (which relates to transitional provisions) where an employer is required by virtue of the provisions of Part II of Schedule 6 (which relates to internal radiation) to designate an area as a controlled area or a supervised area, he shall ensure that adequate washing and changing facilities are provided for persons who enter or leave that area and that those facilities are properly maintained.

Personal protective equipment.

23. (1) Every employer shall ensure that, where personal protective equipment provided in pursuance of regulation 6(3) includes respiratory protective equipment, that respiratory protective equipment is of a type, or conforms to a standard, approved in either case by the Government, except that this sub-regulation shall not apply to respiratory protective equipment supplied to the employer before the coming into effect of these regulations.

(2) Before choosing personal protective equipment an employer shall make an assessment to determine whether it will satisfy regulation 6(3).

- (3) The assessment required by sub-regulation (2) shall involve —
- (a) definition of the characteristics necessary to comply with regulation 6(3); and
 - (b) comparison of the characteristics of available personal protective equipment with the characteristics referred to in paragraph (a).

(4) Every employer shall ensure that all personal protective equipment (including respiratory protective equipment) is thoroughly examined at regular intervals and is properly maintained and that, in the case of respiratory protective equipment, a suitable record of that examination is made and kept for at least 2 years from the date on which the examination

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was made and that record includes a statement of the condition of the equipment at the time of the examination.

(5) Every employer shall ensure that appropriate accommodation is provided for personal protective equipment when it is not being worn.

(6) Every employee shall take all reasonable steps to ensure that personal protective equipment provided to him is returned to the accommodation provided for it after use.

PART VI.

MONITORING OF IONISING RADIATION.

Monitoring of levels for radiation and contamination.

24. (1) Every employer who undertakes work with ionising radiation shall take such steps as are requisite, otherwise than by use of assessed doses of individuals, to ensure that levels of ionising radiation are adequately monitored for each controlled area or supervised area that he has designated, in order to ascertain the efficacy of the methods used in those areas for the restriction of exposure of persons to ionising radiation.

(2) The employer shall provide equipment which is suitable for carrying out the monitoring required by sub-regulation (1) and it shall —

- (a) be properly maintained;
- (b) subject to regulation 40(8) (which relates to transitional provisions), be thoroughly examined and tested at least once in every 14 months; and
- (c) except in the case of equipment which was taken into use for the first time before the coming into effect of these regulations, have had its performance established by tests before it is taken into use for the first time.

(3) The examination and tests required by paragraphs (b) and (c) of sub-regulation (2) shall be carried out by, or under the immediate supervision of, a qualified person appointed for the purposes of those paragraphs by either—

- (a) the employer who undertakes the work with ionising radiation in which the instruments are intended to be used; or
- (b) the employer of the qualified person if he is not the employer mentioned in paragraph (a).

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(4) The employer shall make suitable records of the results of the monitoring carried out in accordance with sub-regulation (1) and of the tests which have been carried out in accordance with sub-regulation (2) and shall keep those records or copies thereof for at least 2 years from the respective dates on which they were made.

PART VII.

ASSESSMENTS AND NOTIFICATIONS.

Assessments of hazards.

25. (1) An employer shall not carry on work with ionising radiation unless he has made an assessment which is adequate to identify the nature and magnitude of the radiation hazard to the employee or other persons which is likely to arise from that work in the event of any reasonably foreseeable accident, occurrence or incident.

(2) Where the assessment carried out for the purposes of sub-regulation (1) shows that a radiation hazard to employees or other persons exists, the employer shall take all reasonably practicable steps to —

- (a) prevent any such accident, occurrence or incident;
- (b) limit the consequences of any such accident, occurrence or incident which does occur; and
- (c) provide employees with the information, instruction and training and with the equipment necessary to restrict their exposure to ionising radiation.

Special hazard assessment and reports.

26. (1) Subject to regulation 40(9) (which relates to transitional provisions) and sub-regulations (5) and (6), an employer shall not undertake any work with ionising radiation which involves —

- (a) having on any site;
- (b) providing facilities for there to be on any site; or
- (c) transporting,

more than the quantity of any radioactive substance specified in column 6 of Schedule 2 or, in the case of a fissile material, the mass of that material specified in sub-regulation (6), unless he has made an assessment of the radiation hazard that could arise from that work and has sent a report of the assessment, including the particulars specified in Schedule 8, to the

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Government at least 28 days before commencing that work or within such shorter time in advance as the Government may agree.

(2) Where an assessment has been made in accordance with sub-regulation (1) and the employer makes a material change in the work to which that assessment relates which could affect any of the particulars specified in Schedule 8, he shall make a further assessment to take account of that change and send a report of the further assessment to the Government within 28 days of making that change or such longer time as the Government may agree.

(3) Where an assessment has been made in accordance with sub-regulation (1) or (2) and the work to which it relates is still continuing, the employer shall within 2 years of the date of the last assessment report (whether made in accordance with sub-regulation (1) or (2) sub-paragraph (a)) either —

- (a) make a further assessment; or
- (b) if there is no change of circumstances which would affect the last such report, sign a declaration to that effect,

and shall within 28 days send to the Government a copy of the latest assessment report or the declaration as the case may be.

(4) Where, for the purpose of assessing the risk to health or safety of persons who could be affected by work with ionising radiation to which sub-regulation (1) applies, the Government may reasonably require a detailed assessment of any of the matters set out in Schedule 9, it may, by notice in writing served on the employer, require him to carry out such detailed assessment of such of those matters as are specified in the notice and the employer shall send a report of the assessment to the Government within such time as is specified in the notice or within such longer time as the government may subsequently allow.

(5) For the purpose of sub-regulation (1) no account shall be taken of —

- (a) any radioactive substance which has an activity concentration of not more than 100 Bqg-1;
- (b) any radioactive substance in the form of a sealed source conforming to the specifications in paragraph 2 or 3 of Schedule 10; or
- (c) any radioactive substance which is in a package which complies in every respect with either the requirements for Type B packages or for Special Arrangements Transport Operations of, in either case, the Regulations for the Safe Transport of

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Radioactive Materials published by the International Atomic Energy Agency as revised or re-issued from time to time and is certified pursuant to those regulations as complying with them.

(6) For the purpose of sub-regulation (1) the specified mass of a fissile material shall be —

- (a) plutonium as Pu 239 or Pu 241 or as a mixture of plutonium isotopes containing Pu 239 or Pu 241, 150 grams;
- (b) uranium as U 233, 150 grams;
- (c) uranium enriched in U 235 to more than 1% but not more than 5%, 500 grams;
- (d) uranium enriched in U 235 to more than 5%, 250 grams.

Contingency plans.

27. (1) Where the assessment made in accordance with regulation 25(1) shows that as a result of any reasonably foreseeable accident, occurrence or incident —

- (a) employees or other persons are likely to receive a dose of ionising radiation which exceeds any relevant dose limit; or
- (b) any area other than an area already designated as a controlled area would be required to be so designated in accordance with the requirements of regulation 8(1) and Schedule 6 (whether or not it is for the time being under his control),

the employer shall prepare a contingency plan designed to secure so far as is reasonably practicable the restriction of exposure to ionising radiation and the health and safety of persons who may be affected by the accident, occurrence or incident to which the plan relates.

(2) For the purpose of preparing the contingency plan the employer shall consult such persons, bodies and authorities as are appropriate and in a case where the emergency services form part of the plan shall give such information to those services as will enable them to perform their functions in accordance with the plan.

(3) The contingency plan shall include —

- (a) arrangements for all persons (whether employees or not) who are likely to be affected as a result of an accident, occurrence or incident;

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- (b) the name of the person responsible for safety on the site or, in the case of a transport operation, of that operation;
 - (c) the names of persons authorised to implement the plan in the event of an accident, occurrence or incident.
- (4) The employer shall ensure that —
- (a) a copy of the contingency plan made in pursuance of sub-regulation (1) is incorporated in local rules;
 - (b) any employer under his control who may be involved with or may be affected by arrangements in the plan has been given suitable and sufficient instructions and where appropriate issued with suitable dosimeters or other devices obtained in either case from the approved dosimetry service with which the employer has entered into an arrangement under regulation 13(2);
 - (c) where appropriate, rehearsals of the arrangements in the plan are carried out at suitable intervals.
- (5) Subject to regulation 40(9) (which relates to transitional provisions), the employer shall provide the Government with a copy of the contingency plan either —
- (a) before a quantity of a radioactive substance which exceeds the quantity specified in column 6 of Schedule 2 or, in the case of fissile material, the mass of that material specified in regulation 26(6), is brought onto any site or is transported; or
 - (b) when the Government so requires.
- (6) Where the quantity of a radioactive substance exceeds the quantity specified in column 6 of Schedule 2 or, in the case of a fissile material, the mass of that material specified in regulation 26(6) and the employer has prepared the contingency plan specified in sub-regulation (1), the Government may, by a certificate in writing which may be revoked at any time, exempt (either unconditionally or subject to conditions and with or without limit of time) the employer from the requirements of regulation 7 to the extent necessary to give effect to the contingency plan and, in determining whether to grant an exemption in any particular case, the Government shall have regard to the circumstances of that case and in particular to —
- (a) the nature and extent of exposure of persons to ionising radiation which might result from any accident, occurrence or incident to which the contingency plan relates;

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- (b) the size and distribution of the population which might be affected by any such accident, occurrence or incident; and
- (c) the hazard to the health or safety of persons or other detriment which might arise from the countermeasures proposed.

Investigation of exposure.

28. (1) The employer shall ensure that an investigation is carried out forthwith when any of his employees is exposed to ionising radiation to an extent that three-tenths of the annual dose limit for employees aged 18 years or over specified in Part I of Schedule 1 (whole body dose limit) is exceeded for the first time in any calendar year, to determine whether the requirements for regulation 6(1) are being met.

(2) The employer shall keep a record of any investigation made under sub-regulation (1) for at least 2 years from the date on which it was made.

Investigation and notification of overexposure.

29. (1) Where an employer who is undertaking work with ionising radiation suspects or has been informed that any employee or other person is likely to have received an overexposure as a result of that work, he shall make an immediate investigation to determine whether there are circumstances which show beyond reasonable doubt that no overexposure could have occurred and, unless this is shown, the employer shall —

- (a) forthwith notify the suspected overexposure to —
 - (i) the Government,
 - (ii) in the case of an employee of some other employer, that other employer, and
 - (iii) in the case of his own employee, the appropriate appointed doctor; and
- (b) make or arrange for a detailed investigation of the exposure and an assessment of the dose received and shall forthwith notify the results of that investigation and assessment to the persons and authorities mentioned in paragraph (a) and shall —
 - (i) in the case of his employee, forthwith notify that employee of the results of the investigation and assessment, or

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(ii) in the case of a person who is not his employee, where the investigation has shown that the person has received an overexposure, take all reasonable steps to notify him of his overexposure.

(2) An employee who makes any investigation in accordance with sub-regulation (1) shall make a report of that investigation and shall keep that report or a copy thereof for at least 50 years from the date on which it was made.

(3) Where the person who received the overexposure is an employee who has a dose record, his employer shall arrange for the assessment of the dose received to be entered into that dose record.

(4) Where an employee has reasonable cause to believe that he or some other person has received an overexposure, he shall forthwith inform the employer of his belief.

Dose limitation for overexposure employees.

30. (1) Without prejudice to the other requirements of these regulations and in particular regulation 16(6) and Part IV and V of Schedule 1, where an employee has been subjected to an overexposure, sub-regulation (2) shall apply in relation to the employment of that employee on work with ionising radiation during the remainder of the calendar year, commencing at the end of the personal dose assessment period in which he was subjected to the overexposure.

(2) The employer shall ensure that an employee to whom this regulation relates does not, in the remaining part of the calendar year in which he was subjected to the overexposure, receive a dose of ionising radiation greater than that proportion of any dose limit which is equal to the proportion that the remaining part of the year bears to the whole calendar year.

Notification of certain occurrences.

31. (1) Every employer shall forthwith notify the Government in any case where a quantity of a radioactive substance which was under his control and which exceeds the quantity specified for that substance in column 7 of Schedule 2 —

- (a) has been released or is likely to have been released into the atmosphere as a gas, aerosol or dust; or
- (b) has been spilled or otherwise released in such a manner as to give rise to significant contamination.

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(2) Where an employer has reasonable cause to believe that a quantity of a radioactive substance which exceeds the quantity for that substance specified in column 2 of Schedule 2 and which was under his control is lost or has been stolen, the employer shall forthwith notify the Government of that loss or theft, as the case may be.

(3) Where an employer suspects or has been informed that an occurrence mentioned in sub-regulation (1) or (2) may have occurred, he shall make an immediate investigation and unless that investigation shows that no such occurrence has occurred, he shall forthwith make a notification in accordance with the relevant sub-regulation.

(4) An employer who makes any investigation in accordance with sub-regulation (3) shall make a report of that investigation and shall keep that report or a copy thereof for at least 50 years from the date on which it was made.

(5) Where an employee has reasonable cause to believe that an occurrence mentioned in sub-regulation (1) or (2) has occurred, he shall forthwith notify his employer of his belief.

(6) This regulation shall not apply in relation to any of the articles or substances mentioned in Schedule 3.

PART VIII.

SAFETY OF ARTICLES AND EQUIPMENT.

Duties of manufacturers etc. of articles for use in work with ionising radiation.

32. It shall be the duty of any person who designs, manufactures, imports or supplies any article for use at work, where that work is work with ionising radiation —

- (a) to ensure that the article is so designed and constructed as to restrict so far as is reasonably practicable the extent to which employees and other persons are or are likely to be exposed to ionising radiation;
- (b) to take such steps as are necessary to secure that there will be available in connection with the use of the article at work adequate information about proper use, testing and maintenance of the article.

(2) Where a person erects or installs an article for use at work, being work with ionising radiation, he shall —

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- (a) where appropriate, together with a radiation protection adviser appointed under regulation 10(1) by himself or by the employer who works with ionising radiation, undertake a critical examination of the way in which the article was erected or installed for the purpose of ensuring, in particular, that —
 - (i) the safety features and warning devices operate correctly, and
 - (ii) there is sufficient protection for persons from exposure to ionising radiation; and
- (b) provide the employer with adequate information about proper use, testing and maintenance of the article.

Equipment used for medical exposure.

33. (1) Every employer shall ensure that any equipment or apparatus under his control which is used in connection with a medical exposure is of such design or construction and is so installed and maintained as to be capable of restricting as far as reasonably practicable the exposure to ionising radiation of any person who is undergoing a medical exposure to the extent that this is compatible with the clinical purpose or research objective in view.

(2) Where an employer who is undertaking work with ionising radiation suspects or has been informed that an incident may have occurred in which a person while undergoing a medical exposure was, as the result of a malfunction of, or a defect in, radiation equipment used in that work, exposed to ionising radiation to an extent greater than that intended, he shall make immediate investigation of the suspected incident and unless that investigation shows beyond reasonable doubt that no such incident has occurred, shall forthwith notify the Government thereof and make or arrange for a detailed investigation of the circumstances of the exposure and an assessment of the dose received.

(3) An employer who makes any investigation in accordance with sub-regulation (2) shall make a report of that investigation and shall keep that report of a copy thereof for at least 50 years from the date on which it was made.

(4) Where an employee has reasonable cause to believe that an incident mentioned in sub-regulation (2) has occurred, he shall forthwith notify his employer of his belief.

(5) In this regulation “radiation equipment” means equipment which delivers ionising radiation to the person undergoing a medical exposure and equipment which directly controls the extent of the exposure.

34.No person shall intentionally or recklessly misuse or without reasonable excuse interfere with any radioactive substance or radiation generator.

PART IX.

MISCELLANEOUS AND GENERAL.

Exemption certificates.

35. (1) Subject to sub-regulation (2), the Government may, by a certificate in writing, exempt —

- (a) any person or class of person;
- (b) any premises or class of premises; or
- (c) any equipment, apparatus or substance or class of equipment, apparatus or substance,

from any requirement or prohibition imposed by these regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked at any time by a certificate in writing.

(2) The Government shall not grant any such exemption unless, having regard to the circumstances of the case and in particular to —

- (a) the conditions, if any, which it proposes to attach to the exemption; and
- (b) any other requirements imposed by or under any statutory provisions which apply to the case,

it is satisfied that —

- (c) the health and safety of persons who are likely to be affected by the exemption will not be prejudiced in consequence of it; and
- (d) compliance with the fundamental radiation protection provisions underlying regulations 6(1) and (2), 7, 8(1) and (2), 9(1), 13(2), 16(3), 24(1), 27(1) and 33(1) will be achieved.

Offences.

36.A person who contravenes any of the provisions of regulations 4 to 34 or any condition attached to an exemption granted under regulation 35 is guilty

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of an offence and shall be liable on summary conviction to a fine at level 5 on the standard scale.

Onus of proving what is reasonably practicable.

37. In any proceedings against any person for an offence against these regulations consisting of a failure to comply with a duty or requirement to do something so far as is reasonably practicable it shall be for that person to prove that it was not reasonably practicable to do more than was in fact done to satisfy the duty or requirement.

Offences by bodies corporate.

38. (1) Where an offence against these regulations committed by a body corporate is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of, any director, manager, secretary or other similar officer of the body corporate or a person who was purporting to act in any such capacity, he, as well as the body corporate, shall be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

(2) Where the offence against these regulations committed by an unincorporated association (other than a partnership) is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of, any officer of the association or any member of its governing body, he as well as the association is guilty of the offence and liable to be proceeded against and punished accordingly.

(3) A fine imposed on an unincorporated association on its conviction for an offence shall be paid out of the funds of the association.

(4) Where an offence against these regulations committed by a partnership is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of a partner, he as well as the partnership is guilty of the offence and liable to be proceeded against and punished accordingly.

Offences due to fault of other person.

39. (1) Where the commission by any person of any offence against these regulations is due to the act or default of some other person, that other person shall be guilty of the offence, and a person may be charged with and convicted of the offence by virtue of this paragraph whether or not proceedings are taken against the first mentioned person.

(2) Where there would be or have been the commission of an offence under regulation 36 by the Crown but for the circumstances that that regulation does not bind the Crown and that fact is due to the act or default

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of a person other than the Crown, that person shall be guilty of the offence which, but for that circumstance, the Crown would be committing or would have committed, and may be charged with and convicted of that offence accordingly.

Transitional provisions.

40. (1) Where on or before 5th February 1996 an employer was undertaking or commences for the first time work which is required to be notified under regulation 5(2), it shall be sufficient compliance with that regulation if the employer notifies the Government and furnishes the required particulars before 8th January 1996.

(2) Where, in accordance with regulation 9 and but for this sub-regulation, before 8th December 1995 an employer would have been required to designate an employee as a classified person, the employer may designate that employee as a classified person until 8th June 1996 unless, before that later date, an appointed doctor has certified in the health record of the employee that, in his professional opinion, that employee is not fit to be so designated.

(3) Until 8th December 1995 it shall be a sufficient compliance with regulation 10(1) if the employer appoints the radiation protection adviser required under that provision by that date.

(4) Until 8th June 1996 it shall be a sufficient compliance with regulation 11(3) if the employer appoints the radiation protection supervisor required under that provision by that date.

(5) Until 8th June 1996 it shall be a sufficient compliance with regulation 12(a) if the employer ensures that those of his employees who are engaged in work with ionising radiation receive such information, instruction and training as will enable them to know the hazards involved in their work and the precautions to be observed.

(6) Where as respects an employee, his employer did not have and was not required to have a health record or register immediately before 8th December 1995, regulation 16(4) shall not have effect until 8th June 1996

(7) Regulation 22 shall not apply until 8th December 1996 where in order to comply with that regulation it would be necessary to erect a new building or to make substantial alterations to an existing building.

(8) It shall be sufficient compliance with paragraph (b) of regulation 24(2) if the first examination and test required by that paragraph is carried out within 14 months of any thorough examination and test carried out before the date of coming into effect of these regulations, which would have

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complied with the requirements of that paragraph if the paragraph had then been in operation.

(9) Where on or before 8th December 1995 an employer was undertaking work to which regulation 26(1) applies or before the 8th May 1996 he commences such work it shall be sufficient compliance with the requirements of regulations 26(1) and 27(5) if he sends a copy of the assessment or contingency plan, as the case may be, to the Government before the 8th April 1996 or within such longer time as the Government may allow.

(10) Subject to the provisions of this regulation, where on the coming into effect of these regulations a person is carrying on an activity to which these regulations apply it shall be sufficient compliance with these regulations if that person complies with any applicable requirement —

- (a) of regulation 10 within three months of the coming into effect of these regulations; and
- (b) all other regulations within six months of the coming into effect of these regulations.

Modifications relating to the Ministry of Defence etc.

41. (1) In this regulation, any reference to —

- (a) “visiting forces” is a reference to visiting forces within the meaning of any provision of Part I of the Visiting Forces Act 1952, and
- (b) “headquarters or organisation” is a reference to a headquarters or organisation designated for the purposes of the International Headquarters and Defence Organisations Act 1964.

(2) The Secretary of State for Defence may, in the interests of national security, by a certificate in writing exempt —

- (a) Her Majesty’s Forces;
- (b) visiting forces;
- (c) any member of a visiting force working in or attached to any headquarters or organisation; or
- (d) any person engaged in work with ionising radiation for, or on behalf of, the Secretary of State for Defence,

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from all or any of the requirements or prohibitions imposed by these regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked at any time by a certificate in writing, except that, where any such exemption is granted, suitable arrangements shall be made for the assessment and recording of doses of ionising radiation received by persons to whom the exemption relates.

(3) Regulation 5 shall not apply in relation to work carried out by, and on premises under the control of, the Secretary of State for Defence, visiting forces or any headquarters or organisation.

(4) The requirements in regulation 5 to notify the particulars specified in sub-paragraphs (d) and (e) of Schedule 4 or any of the particulars specified in Schedule 5 shall not apply to an employer in relation to work with ionising radiation undertaken for or on behalf of the Secretary of State for Defence, visiting forces or any headquarters or organisation.

(5) Regulation 13 (3) (f) shall not apply in relation to —

- (a) Her Majesty's Forces;
- (b) visiting forces; or
- (c) any member of a visiting force working in or attached to any headquarters or organisation.

(6) Regulation 16 (10) shall not apply in relation to —

- (a) Her Majesty's Forces;
- (b) visiting forces; or
- (c) any member of a visiting force working in or attached to any headquarters or organisation.

(7) The requirement in sub-regulations (1) to (4) of regulation 26 to send an assessment report to the Government shall not have effect in any case where the Secretary of State for Defence decides that to do so would be against the interests of national security or where suitable alternative arrangements have been agreed with the Government.

(8) The requirements of sub-regulations (2) to (4) of regulation 27 shall not have effect to the extent that in any particular case they would, in the opinion of the Secretary of State for Defence, be against the interests of national security.

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(9) The requirement in sub-regulation (5) of regulation 27 to make a copy of the contingency plan available to the Government shall not have effect in any case where either —

- (a) the Secretary of State for Defence decides that to do so would be against the interests of national security and the Government has agreed the criteria to be used in preparing the plan; or
- (b) suitable arrangements have been agreed by the Secretary of State for Defence with the Government to view and assess the plan.

(10) In regulation 29(1) the requirement to notify the Government of a suspected overexposure and the results of the consequent investigation and assessment shall not apply in relation to the exposure of —

- (a) a member of Her Majesty's Forces;
- (b) a member of a visiting force; or
- (c) a member of a visiting force working in or attached to a headquarters or organisation.

(11) The requirements of regulation 31(1) shall not apply to Her Majesty's ships except when undergoing refit.

Application to the Crown.

42. (1) Subject to regulation 41, the provisions of these regulations, except regulations 36 to 39, shall bind the Crown.

(2) Although they do not bind the Crown, regulations 36 to 39 shall, subject to regulation 41, apply to persons in the public service of the Crown as they apply to other persons.

(3) For the purposes of these regulations persons in the service of the Crown shall be treated as employees of the Crown whether or not they would be so treated apart from this sub -regulation.

Civil liability.

43. Breach of a duty imposed by these regulations shall, so far as it causes damage, be actionable in civil proceedings.

Charges by the Government.

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44. (1) Where the Government incurs costs in carrying out its functions under these regulations it may charge a fee determined in accordance with sub-regulations (2) and (3) to any person carrying on in Gibraltar an activity to which these regulations apply.

(2) The fee shall not exceed the sum of the costs reasonably incurred by the Government in respect of the application of these regulations to the activity of that person and where the costs incurred are in respect of more than one person carrying on in Gibraltar an activity to which these regulations apply the fee charged to each such person shall not exceed the proportion of such sum attributable to the activity or activities of that person.

(3) Where, in the opinion of the Government, the Government can properly carry out its functions under these regulations only by engaging specialists and consultants, the cost of such specialists or consultants shall be included in the fee payable under sub-regulation (1).

(4) The Government may determine the cost of employing an officer (including a public officer) for any period of work appropriate to his grade by reference to the average cost to it of employing officers of his grade for that period.

(5) When requiring payment the Government shall send or give to the person by whom the fee is payable a detailed statement of the work done and costs incurred and the period to which the statement relates, and the fee shall be recoverable as a civil debt.

SCHEDULE 1

Regulations 2(1), 7, 13(3)(f),
28(1) and 30(1)

DOSE LIMITS

PART I

DOSE LIMITS FOR THE WHOLE BODY

1. The dose limit for the whole body resulting from exposure to the whole or part of the body, being the sum of the following dose quantities resulting from exposure to ionising radiation, namely the effective dose equivalent from external radiation and the committed effective dose equivalent from that year's intake of radionuclides, shall in any calendar year be —

- (a) for employees aged 18 years or over, 50 mSv;
- (b) for trainees aged under 18 years, 15 mSv;
- (c) for any other person, 5 mSv.

PART II

DOSE LIMITS FOR INDIVIDUAL ORGANS AND TISSUES

2. Without prejudice to Part I, the dose limit for individual organs or tissues, being the sum of the following dose quantities resulting from exposure to ionising radiation, namely the dose equivalent from external radiation, the dose equivalent from contamination and the committed dose equivalent from that year's intake of radionuclides averaged throughout any individual organ or tissue (other than the lens of the eye) or any body extremity or over any area of skin, shall in any calendar year be —

- (a) for employees aged 18 years of over, 500 mSv;
- (b) for trainees aged under 18 years, 150 mSv;
- (c) for any other person, 50 mSv.

3. In assessing the dose quantity to skin whether from contamination or external radiation, the area of skin over which the dose quantity is averaged

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shall be appropriate to the circumstances but in any event shall not exceed 100 cm².

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PART III

DOSE LIMITS FOR THE LENS OF THE EYE

4. The dose limit for the lens of the eye resulting from exposure to ionising radiation, being the average doses equivalent from external and internal radiation delivered between 2.5 mm and 3.5 mm behind the surface of the eye, shall in any calendar year be —

- (a) for employees aged 18 years or over, 150 mSv;
- (b) for trainees aged under 18 years, 45 mSv;
- (c) for any other person, 15 mSv.

PART IV

DOSE LIMIT FOR THE ABDOMEN OF A WOMAN OF REPRODUCTIVE CAPACITY

5. The dose limit for the abdomen of a woman of reproductive capacity who is at work, being the dose equivalent from external radiation resulting from exposure to ionising radiation averaged throughout the abdomen, shall be 13 mSv in any consecutive three month interval.

PART V

DOSE LIMIT FOR THE ABDOMEN OF A PREGNANT WOMAN

6. The dose limit for the abdomen of a pregnant woman who is at work, being the dose equivalent from external radiation resulting from exposure to ionising radiation averaged throughout the abdomen, shall be 10 mSv during the declared term of pregnancy.

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and 31(1) and (2).**QUANTITIES OF RADIONUCLIDES****PART I**

For Controlled Areas (Internal Radiation)

1	2	3	4	5	6	7
Radionuclide name, symbol, isotope.	Quantity or notification Regulation 31(2) and Schedule 3(b) (Bq)	Air concentration Schedule 6 (Bq m ⁻³)	Surface contamination Schedule 6 (Bq cm ⁻²)	Total activity Schedule 6 (Bq)	Assessment report. Regulation 26(1) (Bq)	Notification of occurrences. Regulation 31(1) (Bq)
Actinium						
Ac-224	5 10 ⁴					
Ac-225	5 10 ³					
Ac-226	5 10 ⁴					
Ac-227	5 10 ³					
Ac-228	5 10 ⁴					
Aluminium						
Al-26	5 10 ⁴					
Americium						
Am-237	5 10 ⁶					
Am-238	5 10 ⁵					
Am-239	5 10 ⁶					
Am-240	5 10 ⁵					
Am-241	5 10 ³					
Am-242m	5 10 ³					
Am-242	5 10 ⁴					
Am-243	5 10 ³					
Am-244m	5 10 ⁵					
Am-244	5 10 ⁵					
Am-245	5 10 ⁶					
Am-246m	5 10 ⁶					
Am-246	5 10 ⁶					
Antimony						
Sb-115	5 10 ⁶					
Sb-116m	5 10 ⁶					
Sb-116	5 10 ⁶					

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Sb-117	5×10^6				
Sb-118m	5×10^6				
Sb-119	5×10^6				
Sb-I20 (15.89 min)	5×10^6				
Sb-I20 (5.67 dy)	5×10^5				
Sb-122	5×10^5				
Sb-124m	5×10^6				
Sb-124	5×10^5				
Sb-125 (Lung class D)	5×10^5				
Sb-125 (Lung class W)	5×10^5				
Sb-126m	5×10^6				
Sb-126	5×10^5				
Sb-127	5×10^5				
Sb-128	5×10^5				
Sb-129	5×10^5				
Sb-130	5×10^6				
Sb-131	5×10^6				
Argon					
Ar-37	5×10^6				
Ar-39	5×10^6				
Ar-41	5×10^5				
Arsenic					
As-69	5×10^6				
As-70	5×10^6				
As-71	5×10^5				
As-72	5×10^5				
As-73	5×10^5				
As-74	5×10^5				
As-76	5×10^5				
As-77	5×10^5				
As-78	5×10^6				
Astatine					
At-207	5×10^5				
At-211	5×10^4				
Barium					
Ba-126	5×10^6				
Ba-128	5×10^5				
Ba-131m	5×10^6				
Ba-131	5×10^5				
Ba-133m	5×10^5				
Ba-133	5×10^5				
Ba-135m	5×10^5				
Ba-139	5×10^6				
Ba-140	5×10^5				
Ba-141	5×10^6				
Ba-142	5×10^6				
Berkelium					
Bk-245	5×10^5				

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Bk-246	5×10^5				
Bk-247	5×10^3				
Bk-249	5×10^4				
Bk-250	5×10^5				
Beryllium					
Be-7	5×10^6				
Be-10	5×10^4				
Bismuth					
Bi-200	5×10^6				
Bi-201	5×10^6				
Bi-202	5×10^6				
Bi-203	5×10^5				
Bi-205	5×10^5				
Bi-206	5×10^5				
Bi-207	5×10^5				
Bi-210m	5×10^4				
Bi-210	5×10^4				
Bi-212	5×10^5				
Bi-213	5×10^5				
Bi-214	5×10^5				
Bromine					
Br-74m	5×10^6				
Br-74	5×10^6				
Br-75	5×10^6				
Br-76	5×10^5				
Br-77	5×10^6				
Br-80m	5×10^6				
Br-80	5×10^6				
Br-82	5×10^5				
Br-83	5×10^6				
Br-84	5×10^6				
Cadmium					
Cd-104	5×10^6				
Cd-107	5×10^6				
Cd-109	5×10^4				
Cd-113m	5×10^4				
Cd-113	5×10^6				
Cd-115m	5×10^4				
Cd-115	5×10^5				
Cd-117m	5×10^6				
Cd-117	5×10^6				
Caesium					
Cs-125	5×10^6				
Cs-127	5×10^6				
Cs-129	5×10^6				
Cs-130	5×10^6				
Cs-131	5×10^6				
Cs-132	5×10^5				
Cs-134m	5×10^6				
Cs-134	5×10^4				
Cs-135m	5×10^6				
Cs-135	5×10^6				

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Cs-136	5×10^5				
Cs-137	5×10^5				
Cs-138	5×10^6				
Calcium					
Ca-41	5×10^6				
Ca-45	5×10^5				
Ca-47	5×10^5				
Californium					
Cf-244	5×10^5				
Cf-246	5×10^4				
Cf-248	5×10^3				
Cf-249	5×10^3				
Cf-250	5×10^3				
Cf-251	5×10^3				
Cf-252	5×10^3				
Cf-253	5×10^4				
Cf-254	5×10^3				
Carbon					
C-11 (labelled organic compounds)	5×10^6				
C-11 (monoxide gas)	5×10^6				
C-11 (dioxide gas)	5×10^6				
C-14 (labelled organic compounds)	5×10^5				
C-14 (monoxide gas)	5×10^5				
C-14 (dioxide gas)	5×10^5				
Cerium					
Ce-134	5×10^5				
Ce-135	5×10^5				
Ce-137m	5×10^5				
Ce-137	5×10^6				
Ce-139	5×10^5				
Ce-141	5×10^5				
Ce-143	5×10^5				
Ce-144	5×10^4				
Chlorine					
Cl-36	5×10^5				
Cl-38	5×10^6				
Cl-39	5×10^6				
Chromium					
Cr-48	5×10^5				
Cr-49	5×10^6				
Cr-51	5×10^6				

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Cobalt

Co-55 5 10⁵Co-56 5 10⁵Co-57 5 10⁵Co-58m 5 10⁶Co-58 5 10⁵Co-60m 5 10⁶

Co-60 (Lung

class W) 5 10⁴

Co-60 (Lung

class Y) 5 10⁴Co-61 5 10⁶Co-62m 5 10⁶

Copper

Cu-60 5 10⁶Cu-61 5 10⁶Cu-64 5 10⁶Cu-67 5 10⁵

Curium

Cm-238 5 10⁵Cm-240 5 10³Cm-241 5 10⁴Cm-242 5 10³Cm-243 5 10³Cm-244 5 10³Cm-245 5 10³Cm-246 5 10³Cm-247 5 10³Cm-248 5 10³Cm-249 5 10⁶

Dysprosium

Dy-155 5 10⁶Dy-157 5 10⁶Dy-159 5 10⁵Dy-165 5 10⁶Dy-166 5 10⁵

Einsteinium

Es-250 5 10⁵Es-251 5 10⁵Es-253 5 10⁴Es-254m 5 10⁴Es-254 5 10³

Erbium

Er-161 5 10⁶Er-165 5 10⁶Er-169 5 10⁵Er-171 5 10⁵Er-172 5 10⁵

Europium

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Eu-145	5×10^5				
Eu-146	5×10^5				
Eu-147	5×10^5				
Eu-148	5×10^5				
Eu-149	5×10^5				
Eu-150 (12.6 hr)	5×10^4				
Eu-ISO (34.2 yr)	5×10^4				
Eu-152m	5×10^5				
Eu-152	5×10^4				
Eu-154	5×10^4				
Eu-155	5×10^4				
Eu-156	5×10^5				
Eu-157	5×10^5				
Eu-158	5×10^6				
Fermium					
Fm-252	5×10^4				
Fm-253	5×10^4				
Fm-254	5×10^4				
Fm-255	5×10^4				
Fm-257	5×10^3				
Fluorine					
F-18	5×10^6				
Francium					
Fr-222	5×10^5				
Fr-223	5×10^5				
Gadolinium					
Gd-145	5×10^6				
Gd-146	5×10^5				
Gd-147	5×10^5				
Gd-148	5×10^3				
Gd-149	5×10^5				
Gd-151	5×10^5				
Gd-152	5×10^6				
Gd-153	5×10^5				
Gd-159	5×10^5				
Gallium					
Ga-65	5×10^6				
Ga-66	5×10^5				
Ga-67	5×10^5				
Ga-68	5×10^6				
Ga-70	5×10^6				
Ga-72	5×10^5				
Ga-73	5×10^6				
Germanium					
Ge-66	5×10^6				
Ge-67	5×10^6				
Ge-68	5×10^4				
Ge-69	5×10^5				
Ge-71	5×10^6				

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Ge-75	5×10^6				
Ge-77	5×10^5				
Ge-78	5×10^6				
Gold					
Au-193	5×10^6				
Au-194	5×10^5				
Au-195	5×10^5				
Au-198m	5×10^5				
Au-198	5×10^5				
Au-199	5×10^5				
Au-200m	5×10^5				
Au-200	5×10^6				
Au-201	5×10^6				
Hafnium					
Hf-170	5×10^5				
Hf-172	5×10^4				
Hf-173	5×10^5				
Hf-175	5×10^5				
Hf-177m	5×10^6				
Hf-178m	5×10^4				
Hf-179m	5×10^5				
Hf-180m	5×10^6				
Hf-181	5×10^5				
Hf-182m	5×10^6				
Hf-182	5×10^4				
Hf-183	5×10^6				
Hf-184	5×10^5				
Holmium					
Ho-155	5×10^6				
Ho-157	5×10^6				
Ho-159	5×10^6				
Ho-161	5×10^6				
Ho-162m	5×10^6				
Ho-162	5×10^6				
Ho-164m	5×10^6				
Ho-164	5×10^6				
Ho-166m	5×10^4				
Ho-166	5×10^5				
Ho-167	5×10^6				
Hydrogen					
H-3 Tritiated compounds	5×10^6				
Elemental	5×10^6				
Indium					
In-109	5×10^6				
In-110(69.I mm)	5×10^6				
In-110(4.9hr)	5×10^6				
In-111	5×10^5				
In-112	5×10^6				
In-113m	5×10^6				
In-114in	5×10^4				

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In-115m	5 10 ⁶				
In-115	5 10 ⁶				
In-116m	5 10 ⁶				
In-117m	5 10 ⁶				
In-117	5 10 ⁶				
In-119m	5 10 ⁶				
Iodine					
I-120m	5 10 ⁶				
I-120	5 10 ⁵				
I-121	5 10 ⁶				
I-123	5 10 ⁵				
I-124	5 10 ⁴				
I-125	5 10 ⁴				
I-126	5 10 ⁴				
I-128	5 10 ⁶				
I-129	5 10 ⁶				
I-130	5 10 ⁵				
I-131	5 10 ⁴				
I-132m	5 10 ⁵				
I-132	5 10 ⁵				
I-133	5 10 ⁵				
I-134	5 10 ⁶				
I-135	5 10 ⁵				
Iridium					
Ir-182	5 10 ⁶				
Ir-184	5 10 ⁶				
Ir-185	5 10 ⁵				
Ir-186	5 10 ⁵				
Ir-187	5 10 ⁶				
Ir-188	5 10 ⁵				
Ir-189	5 10 ⁵				
Ir-190m	5 10 ⁶				
Ir-190	5 10 ⁵				
Ir-192m	5 10 ⁴				
Ir-192	5 10 ⁵				
Ir-194m	5 10 ⁴				
Ir-194	5 10 ⁵				
Ir-195m	5 10 ⁶				
Ir-195	5 10 ⁶				
Iron					
Fe-52	5 10 ⁵				
Fe-55 (Lung class D)	5 10 ⁵				
Fe-55 (Lung class W)	5 10 ⁵				
Fe-59	5 10 ⁵				
Fe-60	5 10 ⁴				
Krypton					
Kr-74	5 10 ⁵				
Kr-76	5 10 ⁶				
Kr-77	5 10 ⁵				
Kr-79	5 10 ⁶				
Kr-81	5 10 ⁶				

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Kr-83m	5×10^6				
Kr-85m	5×10^6				
Kr-85	5×10^6				
Kr-57	5×10^5				
Kr-88	5×10^5				
Lanthanum					
La-131	5×10^6				
La-132	5×10^5				
La-135	5×10^6				
La-137	5×10^4				
La-138	5×10^6				
La-140	5×10^5				
La-141	5×10^5				
La-142	5×10^6				
La-143	5×10^6				
Lead					
Pb-195m	5×10^6				
Pb-198	5×10^6				
Pb-199	5×10^6				
Pb-200	5×10^5				
Pb-201	5×10^6				
Pb-202m	5×10^6				
Pb-202	5×10^4				
Pb-203	5×10^5				
Pb-205	5×10^6				
Pb-209	5×10^6				
Pb-210	5×10^3				
Pb-211	5×10^5				
Pb-212	5×10^4				
Pb-214	5×10^5				
Lutetium					
Lu-169	5×10^5				
Lu-170	5×10^5				
Lu-171	5×10^5				
Lu-172	5×10^5				
Lu-173	5×10^5				
Lu-174m	5×10^5				
Lu-174	5×10^4				
Lu-176m	5×10^6				
Lu-176	5×10^6				
Lu-177m	5×10^4				
Lu-177	5×10^5				
Lu-178m	5×10^6				
Lu-178	5×10^6				
Lu-179	5×10^6				
Magnesium					
Mg-28	5×10^5				
Manganese					
Mn-51	5×10^6				
Mn-52m	5×10^6				
Mn-52	5×10^5				
Mn-53	5×10^6				

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Mn-54	5×10^5				
Mn-56	5×10^6				
Mendelevium					
Md-257	5×10^4				
Md-258	5×10^3				
Mercury					
Hg-193m	5×10^5				
Hg-193	5×10^6				
Hg-194	5×10^4				
Hg-195m	5×10^5				
Hg-195	5×10^6				
Hg-497m	5×10^5				
Hg-197	5×10^5				
Hg-199m	5×10^6				
Hg-203	5×10^5				
Molybdenum					
Mo-90	5×10^5				
Mo-93m	5×10^6				
Mo-93	5×10^5				
Mo-99	5×10^5				
Mo-101	5×10^6				
Neodymium					
Nd-136	5×10^6				
Nd-138	5×10^5				
Nd-139m	5×10^6				
Nd-139	5×10^6				
Nd-141	5×10^6				
Nd-147	5×10^5				
Nd-149	5×10^6				
Nd-151	5×10^6				
Neptunium					
Np-232	5×10^5				
Np-233	5×10^6				
Np-234	5×10^5				
Np-235	5×10^5				
Np-236 (22.5 hr)	5×10^4				
Np-236(1.15 10^5 yr)	5×10^3				
Np-237	5×10^3				
Np-238	5×10^4				
Np-239	5×10^5				
Np-240	5×10^6				
Nickel					
Ni-56	5×10^5				
Ni-57	5×10^5				
Ni-59	5×10^6				
Ni-63	5×10^5				
Ni-65	5×10^6				
Ni-66 (inorganic)	5×10^5				

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Ni-66 (vapour)	5 10 ⁵				
Niobium					
Nb-88	5 10 ⁶				
Nb-89 (66 mm)	5 10 ⁶				
Nb-89 (122 mm)	5 10 ⁶				
Nb-90	5 10 ⁵				
Nb-93m	5 10 ⁵				
Nb-94	5 10 ⁴				
Nb-95m	5 10 ⁵				
Nb-95	5 10 ⁵				
Nb-96	5 10 ⁵				
Nb-97	5 10 ⁶				
Nb-98	5 10 ⁶				
Osmium					
Os-180	5 10 ⁶				
Os-181	5 10 ⁶				
Os-182	5 10 ⁵				
Os-185	5 10 ⁵				
Os-189m	5 10 ⁵				
Os-191m	5 10 ⁶				
Os-191	5 10 ⁶				
Os-193	5 10 ⁵				
Os-194	5 10 ⁵				
	5 10 ⁴				
Palladium					
Pd-100	5 10 ⁵				
Pd-101	5 10 ⁶				
Pd-103	5 10 ⁵				
Pd-107	5 10 ⁶				
Pd-109	5 10 ⁵				
Phosphorus					
P-32	5 10 ⁵				
P-33	5 10 ⁵				
Platinum					
Pt-156	5 10 ⁶				
PI-155	5 10 ⁵				
Pt-189	5 10 ⁶				
Pt-191	5 10 ⁵				
Pt-193m	5 10 ⁵				
Pt-193	5 10 ⁶				
Pt-195m	5 10 ⁵				
Pt-197m	5 10 ⁶				
Pt-197	5 10 ⁵				
Pt-199	5 10 ⁶				
Pt-200	5 10 ⁵				
Plutonium					
Pu-234	5 10 ⁵				
Pu-235	5 10 ⁶				
Pu-236	5 10 ³				

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Pu-237	5×10^5				
Pu-235 (Lung class W)	5×10^3				
Pu-238 (Lung class Y)	5×10^3				
Pu-239 (Lung class W)	5×10^3				
Pu-239 (Lung class Y)	5×10^3				
Pu-240 (Lung class W)	5×10^3				
Pu-240 (Lung class Y)	5×10^3				
Pu-241 (Lung class W)	5×10^3				
Pu-241 (Lung class Y)	5×10^3				
Pu-242	5×10^3				
Pu-243	5×10^6				
Pu-244	5×10^4				
Pu-245	5×10^5				
Polonium					
Po-203	5×10^5				
Po-205	5×10^5				
Po-207	5×10^5				
Po-210	5×10^6				
Potassium					
K-40	5×10^5				
K-42	5×10^5				
K-43	5×10^5				
K-44	5×10^5				
K-45	5×10^6				
Praseodymium					
Pr-136	5×10^6				
Pr-137	5×10^6				
Pr-138m	5×10^6				
Pr-139	5×10^6				
Pr-142m	5×10^6				
Pr-142	5×10^5				
Pr-143	5×10^5				
Pr-144	5×10^6				
Pr-145	5×10^5				
Pr-147	5×10^6				
Promethium					
Pm-141	5×10^6				
Pm-143	5×10^5				
Pm-144	5×10^4				
Pm-145	5×10^5				
Pm-146	5×10^4				
Pm-147	5×10^5				
Pm-148m	5×10^5				
Pm-149	5×10^5				
Pm-150	5×10^6				

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Pm-151	5×10^5				
Protactinium					
Pa-227	5×10^6				
Pa-228	5×10^6				
Pa-230	5×10^5				
Pa-231	5×10^5				
Pa-232	5×10^6				
Pa-233	5×10^5				
Pa-234	5×10^6				
Radium					
	zz				
Ra-223	5×10^6				
Ra-224	5×10^6				
Ra-225	5×10^5				
Ra-226	5×10^5				
Ra-227	5×10^6				
Ra-228	5×10^5				
Rhenium					
Re-177	5×10^6				
Re-175	5×10^6				
Re-181	5×10^6				
Re-182 (12.7 hr)	5×10^5				
Re-182 (64 hr)	5×10^5				
Re-184m	5×10^6				
Re-154	5×10^5				
Re-186m	5×10^6				
Re-186	5×10^6				
Re-187	5×10^6				
Re-188m	5×10^5				
Re-188	5×10^5				
Re-189	5×10^6				
Rhodium					
Rh-99m	5×10^5				
Rh-99	5×10^6				
Rh-100	5×10^6				
Rh-101m	5×10^6				
Rh-101	5×10^5				
Rh-102m	5×10^5				
Rh-102	5×10^6				
Rh-103m	5×10^5				
Rh-105	5×10^6				
Rh-106m	5×10^6				
Rh-107	5×10^6				
Rubidium					
Rb-79	5×10^6				
Rb-81m	5×10^5				
Rb-81	5×10^6				
Rb-82m	5×10^5				
Rb-83	5×10^5				
Rb-84	5×10^6				
Rb-86	5×10^6				
Rb-87	5×10^5				

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Rb-88	5×10^5				
Rb-89	5×10^6				
Ruthenium					
Ru-94	5×10^5				
Ru-97	5×10^6				
Ru-103 (Lung class Y)	5×10^6				
Ru-103 (Lung class D)	5×10^6				
Ru-103 (Lung class W)	5×10^5				
Ru-105	5×10^5				
Ru-106 (Lung class Y)	5×10^6				
Ru-106 (Lung class D)	5×10^5				
Ru-106 (Lung class W)	5×10^6				
Samarium					
Sm-141m	5×10^6				
Sm-141	5×10^6				
Sm-142	5×10^5				
Sm-145	5×10^5				
Sm-146	5×10^6				
Sm-147	5×10^5				
Sm-151	5×10^6				
Sm-153	5×10^6				
Sm-155	5×10^6				
Sm-156	5×10^5				
Scandium					
Sc-43	5×10^5				
Sc-44m	5×10^6				
Sc-44	5×10^5				
Sc-46	5×10^6				
Sc-47	5×10^6				
Sc-48	5×10^6				
Sc-49	5×10^5				
Selenium					
Se-70	5×10^5				
Se-73m	5×10^6				
Se-73	5×10^5				
Se-75	5×10^6				
Se-79	5×10^6				
Se-81m	5×10^6				
Se-81	5×10^5				
Se-83	5×10^5				
Silicon					
Si-31	5×10^6				
Si-32	5×10^6				
Silver					
Ag-102	5×10^5				

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Ag-103	5×10^6				
Ag-104m	5×10^6				
Ag-104	5×10^5				
Ag-105	5×10^5				
Ag-106m	5×10^6				
Ag-106	5×10^5				
Ag-108m	5×10^6				
Ag-110m	5×10^6				
Ag-111	5×10^6				
Ag-112	5×10^5				
Ag-115	5×10^5				
Sodium					
Na-22	5×10^6				
Na-24	5×10^6				
Strontium					
Sr-80	5×10^5				
Sr-81	5×10^6				
Sr-83	5×10^6				
Sr-85m	5×10^5				
Sr-85	5×10^5				
Sr-87m	5×10^6				
Sr-89	5×10^5				
Sr-90 (Lung class D)	5×10^6				
Sr-90 (Lung class Y)	5×10^6				
Sr-91	5×10^6				
Sulphur					
S-35 (Lung class I)	5×10^6				
S-35 (Lung class W)	5×10^5				
S-35 (vapour)	5×10^6				
Tantalum					
Ta-172	5×10^5				
Ta-173	5×10^5				
Ta-174	5×10^6				
Ta-175	5×10^6				
Ta-176	5×10^5				
Ta-177	5×10^5				
Ta-175	5×10^6				
Ta-179	5×10^5				
Ta-180m	5×10^6				
Ta-180	5×10^6				
Ta-182m	5×10^6				
Ta-182	5×10^5				
Ta-183	5×10^5				
Ta-184	5×10^6				
Ta-185	5×10^5				
Ta-186	5×10^6				
Technetium					
Tc-93m	5×10^6				

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Tc-93	5×10^6				
Tc-94m	5×10^5				
Tc-94	5×10^5				
Tc-96m	5×10^6				
Tc-96	5×10^5				
Tc-97m	5×10^6				
Tc-97	5×10^6				
Tc-95	5×10^6				
Tc-99m	5×10^5				
Tc-99	5×10^5				
Tc-101	5×10^6				
Tc-104	5×10^5				
Tellurium					
Te-116	5×10^6				
Te-121m	5×10^6				
Te-121	5×10^6				
Te-123m	5×10^5				
Te-123	5×10^5				
Te-125m	5×10^6				
Te-127m	5×10^5				
Te-127	5×10^6				
Te-129m	5×10^6				
Te-129	5×10^6				
Te-131m	5×10^5				
Te-131	5×10^5				
Te-132	5×10^6				
Te-133m	5×10^5				
Te-133	5×10^6				
Te-134	5×10^6				
Terbium					
Tb-147	5×10^5				
Tb-149	5×10^6				
Tb-150	5×10^5				
Tb-151	5×10^6				
Tb-153	5×10^6				
Tb-154	5×10^5				
Tb-155	5×10^6				
Tb-156m (5.0 hr)	5×10^6				
Tb-156m (24.4 hr)	5×10^5				
Tb-156	5×10^5				
Tb-157	5×10^6				
Tb-158	5×10^5				
Tb-160	5×10^6				
Tb-161	5×10^6				
Thallium					
Tl-194m	5×10^5				
Tl-194	5×10^6				
Tl-195	5×10^5				
Tl-197	5×10^6				
Tl-198m	5×10^6				
Tl-198	5×10^5				
Tl-199	5×10^6				

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TI-200	5×10^6				
TI-201	5×10^5				
TI-202	5×10^5				
TI-204	5×10^6				
Thonium					
Th-226	5×10^5				
Th-227	5×10^6				
Th-225	5×10^6				
Th-229	5×10^6				
Th-230	5×10^5				
Th-231	5×10^5				
Th-232	5×10^6				
Th-234	5×10^5				
Natural-Th (see Note 1)	5×10^6				
Thulium					
Tm-162	5×10^5				
Tm-166	5×10^6				
Tm-167	5×10^6				
Tm-170	5×10^6				
Tm-171	5×10^5				
Tm-172	5×10^5				
Tm-173	5×10^6				
Tm-175	5×10^5				
Tin					
Sn-110	5×10^6				
Sn-111	5×10^5				
Sn-113	5×10^6				
Sn-117m	5×10^6				
Sn-119m	5×10^6				
Sn-121m	5×10^5				
Sn-121	5×10^5				
Sn-123m	5×10^6				
Sn-123	5×10^5				
Sn-125	5×10^6				
Sn-126	5×10^5				
Sn-127	5×10^6				
Sn-128	5×10^6				
Titanium					
Ti-44	5×10^5				
Ti-45	5×10^6				
Tungsten					
W-176	5×10^6				
W-177	5×10^5				
W-178	5×10^5				
W-179	5×10^6				
W-181	5×10^5				
W-185	5×10^6				
W-187	5×10^6				
W-118	5×10^6				
Uranium					

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U-230	5×10^6				
U-231	5×10^5				
U-232 (Lung class D)	5×10^6				
U-232 (Lung class W)	5×10^5				
U-232 (Lung class Y)	5×10^5				
U-233	5×10^5				
U-234 (Lung class D)	5×10^6				
U-234 (Lung class W)	5×10^6				
U-234 (Lung class Y)	5×10^6				
U-235 (Lung class D)	5×10^5				
U-235 (Lung class W)	5×10^5				
U-235 (Lung class Y)	5×10^6				
U-236 (Lung class D)	5×10^5				
U-236 (Lung class W)	5×10^6				
U-236 (Lung class Y)	5×10^5				
U-237	5×10^6				
U-238 (Lung class D)	5×10^6				
U-238 (Lung class W)	5×10^6				
U-238 (Lung class Y)	5×10^5				
U-239	5×10^5				
U-240	5×10^6				
Depleted-U (Lung class D)	5×10^6				
Depleted-U (Lung class W)	5×10^5				
Depleted-U (Lung class Y)	5×10^6				
Natural-U (Lung class D) (see Note 2)	5×10^6				
Natural-U (Lung class W) (see Note 2)	5×10^5				
Natural-U (Lung class Y)	5×10^5				

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2)5% enriched-
U (Lung
class D)5 10⁵5% enriched-
U (Lung
class W)5 10⁶5% enriched-
U5 10⁵20% enriched-
U (Lung
class ID)5 10⁶20% enriched-
U (Lung
class W)5 10⁶20% enriched-
U (Lung
class Y)5 10⁶

Vanadium

V-47

5 10⁶

V-48

5 10⁵

V-49

5 10⁶

Xenon

Xe-120

5 10⁵

Xe-121

5 10⁵

Xe-122

5 10⁵

Xe-123

5 10⁶

Xe-125

5 10⁶

Xe-127

5 10⁶

Xe-129m

5 10⁵

Xe-131m

5 10⁵

Xe-133m

5 10⁶

Xe-133

5 10⁵

Xe-135m

5 10⁶

Xe-135

5 10⁵

Xe-138

5 10⁶

Ytterbium

Yb-162

5 10⁵

Yb-166

5 10⁵

Yb-167

5 10⁶

Yb-169

5 10⁵

Yb-175

5 10⁶

Yb-177

5 10⁶

Yb-178

5 10⁶

Yttrium

Y-86m

5 10⁵

Y-86

5 10⁶

Y-87

5 10⁶

Y-88

5 10⁶

Y-90m

5 10⁵

Y-90

5 10⁵

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Y-91m	5 10 ⁶				
Y-91	5 10 ⁵				
Y-92	5 10 ⁶				
Y-93	5 10 ⁵				
Y-94	5 10 ⁶				
Y-95	5 10 ⁶				
Zinc					
Zn-62	5 10 ⁵				
Zn-63	5 10 ⁶				
Zn-65	5 10 ⁵				
Zn-69m	5 10 ⁶				
Zn-69	5 10 ⁶				
Zn-71m	5 10 ⁵				
Zn-72	5 10 ⁵				
Zirconium					
Zr-86	5 10 ⁶				
Zr-88	5 10 ⁵				
Zr-89	5 10 ⁵				
Zr-93	5 10 ⁶				
Zr-95 (Lung class D)	5 10 ⁵				
Zr-95 (Lung class W)	5 10 ⁶				
Zr-95 (Lung class Y)	5 10 ⁶				
Zr-97	5 10 ⁶				
Other radionuclides not listed above (see Note 3)					

PART II

QUANTITY RATIOS FOR MORE THAN ONE RADIONUCLIDE

- For the purpose of regulation 2(5), the quantity ratio for more than one radionuclide is the sum of the quotients of the quantity of a radionuclide present Q_p divided by the quantity of that nuclide specified in the appropriate column of Part I of this Schedule Q_{lim} , namely —

$$\sum \frac{Q_p}{Q_{lim}}$$

- In any case where the isotopic composition of a radioactive substance is not known or is only partially known, the quantity ratio for that substance shall be calculated by using the values specified in the

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appropriate column in Part I for “other radionuclides not listed above” for any radionuclide that has not been identified or where the quantity of a radionuclide is uncertain, unless the employer can show that the use of some other value is appropriate in the circumstances of a particular case, when he may use that value.

SCHEDULE 3

Regulations 5(1)(a), 10(6),
11(3) and 31(6)

WORK NOT REQUIRED TO BE NOTIFIED UNDER REGULATION 5(2)

Work with ionising radiation shall not be required to be notified in accordance with regulation 5(2) when the only such work being carried out is in one or more of the following categories —

- (a) no radioactive substance having an activity concentration of more than 100 Bqg-1 is involved;
- (b) the quantity of radioactive substance does not exceed the quantity specified in column 2 of Schedule 2;
- (c) timepieces and instruments containing or bearing radioluminescent paint are kept or used and effective means are taken to prevent contact with or leakage of any radioactive substance;
- (d) articles containing or bearing radioluminescent paint are manufactured or repaired and the only liquid radioluminescent paints (if any) at the premises where the work is carried on are paints containing less than the following quantities of the following radionuclides —
 - (i) 2 GBq of tritium,
 - (ii) 100 MBq of promethium 147;
- (e) gas mantles containing compounds of thorium are stored or used;
- (f) a radiation generator is operated or used which does not under normal operating conditions cause a dose rate of more than 1 μ Svh-1 at a distance of 100 mm from any accessible surface and is of a type approved by the Government for the purposes of this sub-paragraph;

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- (g) an apparatus containing a radioactive substance is involved which does not under normal operating conditions cause a dose rate of more than 1 $\mu\text{Sv}\cdot\text{h}^{-1}$ at a distance of 100 mm from any accessible surface and is of a type approved by the Government for the purposes of this sub-paragraph;
- (h) the work involves the case of a person to whom a radioactive medicinal product (within the meaning of the Ionising Radiation (Administration of Medicinal Products and Medical Exposures) Regulations 1995) has been administered; or
- (i) the work is carried out on a ship, aircraft, hovercraft or hydrofoil by members of its crew.

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SCHEDULE 4

Regulations 5(2) and (8) and 41(4)

**PARTICULARS TO BE SUPPLIED IN A NOTIFICATION UNDER
REGULATION 5(2)**

The following particulars shall be given in a notification under regulation 5(2) —

- (a) the name and address of the employer;
- (b) the address of the premises where or from where the work is being carried on;
- (c) the nature of the business of the employer;
- (d) into which of the following categories the source or sources of ionising radiation fall —
 - (i) sealed source,
 - (ii) unsealed radioactive substance,
 - (iii) radiation generator,
 - (iv) an atmosphere containing the short-lived daughters of radon 222;
- (e) whether or not any source is to be used at premises other than the address given at sub-paragraph (b) above; and
- (f) dates of notification and commencement of work with ionising radiation.

SCHEDULE 5

Regulations 5(4) and (5) and 41(4)

**ADDITIONAL PARTICULARS THAT THE GOVERNMENT MAY
REQUIRE**

The following additional particulars may be required under regulation 5(4) —

- (a) a description of the work with ionising radiation;
- (b) particulars of the source or sources of ionising radiation including the type of radiation generator used or operated and the nature of any radioactive substance;
- (c) the quantities of any radioactive substance involved in the work;
- (d) the identity of any person engaged in the work;
- (e) the date of commencement and the duration of any period over which the work is carried on;
- (f) the location and description of any premises at which the work is carried out on each occasion that it is so carried out;
- (g) the date of termination of the work;
- (h) further information on any of the particulars listed in Schedule 4.

SCHEDULE 6

Regulations 6(6), 8(1), 22 and
27(1)(b)

DESIGNATION OF CONTROLLED AREAS

PART I

DESIGNATION IN RELATION TO EXTERNAL RADIATION

1. Subject to paragraphs 2 and 3, the employer shall designate as a controlled area any area in which the instantaneous dose rate exceeds or is likely to exceed $7.5 \mu\text{Svh-1}$.
2. Subject to paragraph 4, the employer need not designate as a controlled area an area in which the instantaneous dose rate exceeds $7.5 \mu\text{Svh-1}$ by reason only that a radioactive substance is in the area provided that —
 - (a) where the radioactive substance is not dispersed in the live body or corpse of a human being —
 - (i) in the case of an emitter of gamma rays, the product of activity and total gamma energy per disintegration does not exceed 50 MBq MeV ,
 - (ii) in the case of an emitter of beta particles having a maximum energy of 0.3 Me V or more, the activity does not exceed 5 MBq , and
 - (iii) in the case of an emitter of beta particles having a maximum energy of less than 0.3 MeV , the activity does not exceed 50 MBq ;
 - (b) where the radioactive substance is dispersed in the live body or corpse of a human being —
 - (i) the substance emits only beta particles, or
 - (ii) in the case of an emitter of gamma rays, the product of activity and total gamma energy per disintegration does not exceed 150 MBq Me V .
3. Subject to paragraph 4 and 5, the employer need not designate as a controlled area any area in which the instantaneous dose rate exceeds 7.5

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$\mu\text{Svh-1}$ but does not exceed 2mSvh-1 and where one of the following conditions is satisfied —

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- (a) the time average dose rate does not exceed $7.5\mu\text{Svh-1}$,
- (b) only the hands of a person can enter any area in which the instantaneous dose rate exceeds $7.5 \mu\text{Svh-1}$ and the time average dose rate in that area does not exceed $75 \mu\text{Svh-1}$, or
- (c) the area is an area in which —
 - (i) the time average dose rate does not exceed $240 \mu\text{Svh-1}$,
 - (ii) no one person remains for more than 1 hour in any working period of 8 hours, and
 - (iii) no person receives a dose exceeding $60 \mu\text{Sv}$ in any working period of 8 hours.

4. Notwithstanding paragraph 2 or 3, the employer shall designate as a controlled area any area to which either of those paragraphs applies unless, following consultation with his radiation protection adviser —

- (a) he is satisfied and has taken suitable steps to ensure that any person entering any such area does not receive a dose of ionising radiation which exceeds three-tenths of any relevant dose limit as a result of entry into such areas; and
- (b) in a case where a time average dose rate is used, he can demonstrate that the basis on which it is calculated is sufficient to justify its use.

5. Notwithstanding paragraph 3, the employer shall designate as a controlled area any area in which the instantaneous dose rate exceeds $7.5 \mu\text{Svh-1}$ because site radiography is being carried out in that area, and in this paragraph “site radiography” means any radiography of inanimate objects other than that which is carried out in an enclosure or cabinet which restricts so far as reasonably practicable the exposure of persons to ionising radiation.

PART II

DESIGNATION IN RELATION TO INTERNAL RADIATION

6. The employer shall designate as a controlled area any area in which either —

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- (a) the air concentration of a radionuclide when averaged over any 8 hour working period exceeds or is likely to exceed the concentration for that radionuclide specified in column 3 of Schedule 2; or
- (b) the level of contamination of any surface by a radionuclide when determined by a suitable method exceeds or is likely to exceed the contamination level for that radionuclide specified in column 4 of Schedule 2 and, for the purposes of this sub-paragraph, contamination levels shall be determined by averaging —
 - (i) in the case of a floor, wall or ceiling, over an area not exceeding 1000 cm², or
 - (ii) in any other case, over an area not exceeding 300 cm²,

except that an area shall not be required to be designated as a controlled area if the only potential or actual source of contamination in the area is a radioactive substance present in the area and the total activity of the radionuclide in the area does not exceed the quantity for that radionuclide specified in column 5 of Schedule 2.

PART III

DESIGNATION IN RELATION TO EXTERNAL RADIATION AND INTERNAL RADIATION TOGETHER

7. Where in accordance with regulation 8(2) an area is required to be designated as a supervised area either —

- (a) in relation to both external and internal radiation; or
- (b) in relation to internal radiation by reason that both the air concentration and the contamination level exceed one third of the values specified in sub-paragraphs (a) and (b) of paragraph 6 respectively,

the employer shall designate that area as a controlled area.

PART IV

DESIGNATION IN RELATION TO THE SHORT-LIVED DAUGHTERS OF RADON 222

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8. In the case of the short-lived daughters of radon 222, the employer shall designate as a controlled area any area in which the concentration in air of the short-lived daughters when averaged over any 8 hour working period exceeds $2 \times 10^{-6} \text{Jm}^{-3}$ (~0.1 working levels).

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SCHEDULE 7

Regulation 10(3)

**QUALIFICATIONS, EXPERIENCE AND QUALITIES OF A
RADIATION PROTECTION ADVISER**

The qualifications, experience and qualities that a radiation protection adviser should possess include, in so far as they relate to the scope of the advice required of him —

- (a) such theoretical training as would ensure that he has the necessary knowledge of the properties of the ionising radiations used in the work undertaken by the employer;
- (b) a thorough knowledge of the hazards of the ionising radiations present and how the hazard should be controlled and minimised;
- (c) an understanding and detailed knowledge of the working practices used in the establishment to which he is being appointed, as well as a general knowledge of the working practices in other establishments of the same type;
- (d) a detailed working knowledge of all statutory provisions, codes of practice, guidance material and other information relevant to his work in giving advice in connection with the work with ionising radiation undertaken by the employer;
- (e) the ability to give advice so that the employer can do what is required of him by statute and follow good radiation protection practice;
- (f) the calibre and personality to enable him to communicate with the employees working or involved with the work with ionising radiation and with their representatives;
- (g) the ability to keep himself up to date with developments in the use of ionising radiation in the field in which he gives advice, and with developments in radiation protection;
- (h) an awareness of legislation, other than that in sub-paragraph (d) above, and practices which could affect the work with ionising radiation on which he is expected to give advice;

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- (j) an appreciation of his own limitations, whether of knowledge, experience, facilities or resources, etc..

SCHEDULE 8

Regulation 26(1) and (2)

PARTICULARS TO BE INCLUDED IN AN ASSESSMENT REPORT

The following particulars are required to be included in an assessment report under regulation 26(1) —

- (a) the name and address of the employer;
- (b) the postal address of the place where the radioactive substance will be processed, manufactured, used or stored, or where the facilities for processing, manufacture, use or storage exist or, in the case of transport, the postal address of the transport undertaking;
- (c) the date on which it is anticipated that the operation will commence or, if it has already commenced, a statement to that effect;
- (d) a general description of the premises or place except that in the case of transport a general description shall be given of either—
 - (i) the starting and end points of the journeys, the mode of transport and transshipment points, or
 - (ii) the criteria to be used for route selection;
- (e) a description of any radioactive substance which in any controlled area or other workplace is likely to exceed the quantity in column 6 of Schedule 2, which shall where practicable include details of the radionuclides present and their likely maximum quantities;
- (f) except in the case of an assessment relating to transport, a plan of the site in question and a map of the environs to a scale large enough to enable the site and any features which could affect the general risk in an emergency to be identified;

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- (g) a diagram of any single plant or enclosed system containing more than the quantity of any radioactive substance specified in column 6 of Schedule 2 or, in the case of transport, the nature of the containment for the radioactive substance, the type of conveyance and the means of securing the load within or on the conveyance;
- (h) factors which could precipitate a major release of any radioactive substance and the measures to be taken to prevent or control such release and information showing the maximum quantity of radioactive substance which, in the event of a major failure of containment, would be released to the atmosphere;
- (j) factors which could precipitate a smaller but continuing release of any radioactive substance and the measures to be taken to prevent or control such releases;
- (k) factors which could give rise to an incident involving the initiation of an unintended self-sustaining nuclear chain reaction or the loss of control of an intended self-sustaining nuclear chain reaction and, in either case, the measures to be taken to prevent or control any such incident;
- (l) the management system and staffing arrangements by which the substance and procedures are controlled;
- (m) except in the case of an assessment relating to transport, information about the size and distribution of the population in the vicinity of premises to which the report relates.

SCHEDULE 9

Regulation 26(4)

**FURTHER PARTICULARS THAT THE GOVERNMENT MAY
REQUIRE**

A further assessment and report may be required under regulation 26(4) in respect of the following matters —

- (a) the likely consequences of any hazard, and the probability of its occurrence;
- (b) the number of persons whose health or safety might be affected by the hazard;
- (c) management systems and staffing arrangements by which any hazard is controlled;
- (d) safety systems and procedures for the control of any hazard;
- (e) the qualifications, experience and training of staff concerned;
- (f) design and operating documentation;
- (g) design and operation of containment and pressure systems;
- (h) protection of persons from the effects of loss of containment;
and
- (j) procedures for reporting of and learning from accidents, occurrences and incidents.

SCHEDULE 10

Regulation 26(5)(b)

**SEALED SOURCES TO WHICH REGULATION 26 DOES NOT
APPLY**

1. Regulation 26 shall not apply to any sealed source which conforms to the specifications of either paragraph 2 or paragraph 3.
2. Where the sealed source consists of a radioactive substance in a massive solid form, the sealed source shall —
 - (a) have one dimension of at least 5 mm;
 - (b) not melt, sublime or ignite below 538°C;
 - (c) not break or shatter if subjected to the percussion test specified in the “Regulations for the Safe Transport of Radioactive Materials” published by the International Atomic Energy Agency, as revised or re-issued from time to time;
 - (d) not, during one week’s immersion in water at pH6-pH8 at 20°C with a maximum conductivity of 10 microsiemens per centimetre, dissolve or convert into reaction products to the extent of more than 50µg per gram of the material; and
 - (e) not, during one week’s exposure to air at 30°C, dissolve or convert into dispersible reaction products to the extent of more than 50µg per gram of the material.
3. Where the sealed source consists of a radioactive substance enclosed in a capsule, that capsule shall —
 - (a) comply with the requirements of sub-paragraphs (a) to (e) of paragraph 2, except that in sub-paragraph (b) of that paragraph 800°C shall be substituted for 538°C; and
 - (b) comply with the requirements of the relevant tests given in the regulations referred to in sub-paragraph (c) of paragraph 2.