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# **RADIATION SAFETY ACT 1975 - 1999**

## **No 44 of 1975**

### **EXTRACT**

#### **PART III - LICENSING AND REGISTRATION**

25. (1) Unless he does so under, and in accordance with any conditions, restriction or limitations imposed in relation to, a licence under this Act of which he is the holder or by virtue of which he is acting under the direction and supervision of the holder, and which authorizes him so to do, a person who operates or uses, or manufactures, stores, transports, sells, possesses, installs, services, maintains, repairs, or otherwise deals with any radioactive substance, irradiating apparatus or electronic product where no exemption granted pursuant to this Act applies, commits an offence.
- (2) Regulations made under this Act may specify the degree of direction and supervision which shall be required in relation to any licence or circumstances therein set out.
- (3) A person who -
- (a) being required to furnish direction or supervision to a prescribed degree, fails so to do; or
  - (b) being required to act under the direction and supervision of the holder of a licence, acts when that direction or supervision is not furnished or is not furnished to the prescribed degree,
- commits an offence.
26. (1) The licences which may be granted under this Act shall be of the following kinds-
- (a) licences authorizing persons to operate or use radioactive substances, irradiating apparatus or electronic products, for one or more of the following purposes -
    - (i) dental diagnosis;
    - (ii) medical diagnosis by radiography;
    - (iii) medical diagnosis by fluoroscopy;
    - (iv) medical diagnosis by the use of radioactive substances;
    - (v) medical therapy;
    - (vi) chiropractic diagnosis by radiography;
    - (vii) veterinary diagnosis by radiography;
    - (viii) veterinary therapy;
    - (ix) industrial;
    - (x) radioactive luminous devices;
    - (xi) research; and
    - (xii) other purposes approved by the Council; and
  - (b) licences authorizing persons to manufacture, store, transport, sell, possess, install, service, maintain, repair, or otherwise deal with radioactive substances, irradiating apparatus or electronic products.
- (2) Notwithstanding the provisions of subsection (1), it shall not be necessary for a medical, dental, or veterinary practitioner to hold a licence under this Act for the purpose of requesting the holder of a licence to undertake any diagnosis or therapy.

- (3) A licence shall be in the prescribed form, but may relate to one matter or several matters.
27. (1) A person who -
- (a) administers, or purports to authorize the administration of, any radioactive substance, or any radiation whether ionising or non-ionising, or any sonic, infrasonic or ultrasonic wave, emitted by or produced from a radioactive substance, irradiating apparatus or electronic product, to any other person; or
  - (b) uses for the purpose of diagnosis or therapy any radioactive substance, irradiating apparatus or electronic product on any other person,
- commits an offence unless the provision of subsection (2) apply.
- (2) It shall be a defence for any person who would otherwise be liable under subsection (1) to prove that at the material time -
- (a) he was a medical practitioner, dentist, chiropractor, or physiotherapist registered as such under the laws of the State and engaged in his professional practice, and was the holder of a relevant licence under this Act authorizing him so to do; or
  - (b) he was lawfully acting under the direction and supervision of a person to whom paragraph (a) applies; or
  - (c) he was the holder of an exemption granted under this Act.
28. (1) Subject to subsection (3) and unless he is the holder of an exemption, this section shall be complied with by any person who is -
- (a) the owner of any premises, or any part of any premises -
    - (i) in which any radioactive substance is manufactured, used or stored;
    - (ii) in which any irradiating apparatus or electronic product is used or operated; or
    - (iii) which is likely to be affected by the passage of waste from, or otherwise by the use of, any radioactive substance, irradiating apparatus or electronic product;
  - (b) the owner of any irradiating apparatus; or
  - (c) the owner of any electronic product.
- (2) A person who is required to comply with subsection (1) shall -
- (a) on the coming into operation of this Act, within such period as is prescribed; or
  - (b) on or after the expiry of that prescribed period, within fourteen days of becoming the owner of the premises, apparatus or product,
- apply, or cause an application to be made on his behalf, to the Council for registration of those premises or that apparatus or product under this Act or for the grant of an exemption from registration.

- (3) Where the provisions of this section apply to two or more persons in relation to any premises, apparatus or product it is sufficient compliance with subsection (2) if the application is made by any one of those persons on behalf of the owners generally.
- (4) Where no exemption granted pursuant to this Act applies, a person who is for the purposes of this Act the owner of any premises, apparatus or product required to be registered under this Act and who -
- (a) fails to cause an application to be made for registration; or
  - (b) contravenes or does not comply with any condition, restriction or limitation imposed by the Council in relation to the registration; or
  - (c) operates or uses, stores, possesses, sells, or otherwise deals with those premises or that apparatus or product after registration in respect thereto has been refused, revoked or suspended by the Council or has expired,
- commits an offence.
- (5) It shall be a defence for any person who would otherwise be liable under subsection (4) to prove that at the material time he was acting under and in accordance with the directions of the Council.
- (6) A certificate in the prescribed form evidencing the registration of any premises, apparatus, or product shall be furnished to the applicant by the Council.
29. (1) A person who sells any radioactive substance, or any irradiating apparatus or electronic product the registration of which is required under this Act, commits an offence unless -
- (a) he required the purchaser to produce evidence that he is the holder of a licence or exemption granted under this Act in relation thereto; and
  - (b) he notifies the Council in writing forthwith specifying the name and address given by the purchaser and particulars of the relevant licence or exemption.
- (2) A person who purchases from any other person outside the State any radioactive substance, or any irradiating apparatus or electronic product which is intended for use in the State and the registration of which is required under this Act, shall
- (a) forthwith notify the Council in writing; and
  - (b) make application to the Council for the registration of that apparatus or product or for the grant of an exemption from registration.
30. Registration under this Act shall not be effected by the Council unless the Council is satisfied that-
- (a) the premises have been constructed and equipped with the essential services installed and finished to a standard acceptable to the Council; and
  - (b) the irradiating apparatus or electronic product is so manufactured, constructed, shielded and installed that it may be used without injury to the health of any person.
31. The Council shall keep under continuous review the range of manufactured or assembled articles which could be prescribed as electronic products to which this Act applies or otherwise made subject

to the provisions of this Act, and where the public interest so requires shall prepare regulations for the purpose of preventing or minimising the dangers arising and advise the Minister accordingly.

32. (1) The Council shall refuse to grant or renew a licence or exemption, or to effect or renew a registration, if -
- (a) the Council is satisfied that the proposed licensee or person to be exempted, or the person in whose name the registration is to be effected, is not a fit and proper person having regard to the objects of this Act;
  - (b) the Council is not satisfied that any radioactive substance, irradiating apparatus or electronic product is, or will be, used without any person other than a person undergoing treatment or diagnosis receiving any dose of radiation in excess of the prescribed level; or
  - (c) the Council is not satisfied that the premises to which the application relates, and any premises affected by the proposed use of the premises to which the application relates, are adequately safeguarded.
- (2) The Council may refuse to grant or renew a licence or exemption, or to effect or renew a registration, if -
- (a) the Council is not satisfied that a requirement as to safety is or will be met, whether the aspect of safety in question is immediate or relates to the long term or cumulative potential effects of radiation;
  - (b) the Council is not satisfied that the radioactive substance, irradiating apparatus or electronic product -
    - (i) is likely to produce a positive net benefit, having regard to the potential hazard, of a nature such as to justify its use; or
    - (ii) performs a function which can be fulfilled only by a radioactive method, or so fulfilled that the radioactive method has clear advantages over any other practical method;
  - (c) the Council is not satisfied as to the justification for the use of the specific radionuclide, or as to the use of the radioactive material in the form, quantity, or quality proposed; or
  - (d) the Council is for any other reason of the opinion that such a refusal is in the public interest.

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## **RADIATION SAFETY (GENERAL) REGULATIONS**

### **1983 - 1999**

"approved" means approved in writing by the Council;

"class 1 laser" means class 1 laser product as defined by Section 3.10 of the laser safety standard;

"class 2 laser" means class 2 laser product as defined by Section 3.11 of the laser safety standard;

"class 3A laser" means class 3A laser product as defined by Section 3.12 of the laser safety standard;

"class 3B laser" means class 3B laser product as defined by Section 3.12 of the laser safety standard;

"class 3B(R) laser" means class 3B(Restricted) laser product as defined by Section 3.73 of the laser safety standard;

"class 4 laser" means class 4 laser product as defined by Section 3.13 of the laser safety standard;

"physiotherapist" means physiotherapist as defined by section 2 of the Physiotherapists Act 1950;

7. (1) Subject to subregulation (2), microwave ovens, lasers and transilluminators are prescribed for the purposes of section 6 (1) (c) as being subject to the provisions of the Act and these regulations.

#### **RADIATION SAFETY OFFICER**

18. (1) The registrant of any premises -
- (a) shall, subject to this regulation, appoint a radiation safety officer to perform -
    - (i) on behalf of the registrant, the duties imposed on the registrant by regulations 19(2), 19A(2), 25 and 26;
    - (ii) the duties imposed on a radiation safety officer by regulation 19 (3);
- and
- (b) may, and if directed to do so by the Council shall, appoint a radiation safety committee to supervise the performance by the radiation safety officer appointed by that registrant of the officer's duties under paragraph (a).
- (1a) An appointment made under subregulation (1)(a) or (b) is to be made in writing, however, a failure to make the appointment in writing does not affect the validity of the appointment.
- 1(b) A registrant shall ensure that a radiation safety officer appointed by that registrant carries out the duties imposed on the officer under regulation 19(3).
- (2) It shall not be necessary for the registrant to appoint a radiation safety officer under subregulation (1) (a) if, with the consent in writing of the Council, he performs both-
- (a) the duties imposed on him by subregulation (2) of regulation 19; and

- (b) the duties imposed on a radiation safety officer by regulation 19 (3).
  - (3) Before appointing a radiation safety officer or a radiation safety committee under subregulation (1), the registrant shall obtain the approval in writing of the Council in respect of the person or persons to be appointed.
  - (4) The appointment of a radiation safety officer or a radiation safety committee, as the case requires, does not relieve the registrant making that appointment of liability for any failure to perform -
    - (a) any of the duties imposed on that registrant by subregulations 19(2), 19A(2), 25 or 26; or
    - (b) the duties imposed on a radiation safety officer by regulation 19 (3).
  - (5) A person shall not be appointed under subregulation (1) to be a radiation safety officer unless he -
    - (a) has passed an examination in radiation safety conducted by or on behalf of the Council in accordance with the Radiation Safety (Qualifications) Regulations 1980 ; or
    - (b) possesses an approved qualification.
  - (6) A registrant shall, on appointing a radiation safety officer, notify that officer in writing of -
    - (a) the duties -
      - (i) which the radiation safety officer is required to carry out on behalf of the registrant under regulation 18(1)(a)(i); and
      - (ii) imposed on the radiation safety officer by regulation 19(3);and
    - (b) any conditions, restrictions or limitations which are imposed under section 36 on the registration of -
      - (i) the premises; or
      - (ii) any irradiating apparatus or electronic product on the premises or any field sites under the control of the registrant.
  - (7) The registrant shall in writing notify the radiation safety officer appointed by that registrant if the duties referred to in subregulation (6)(a) or the conditions, restrictions or limitations referred to in subregulation 6(b) change.
19. (1) *repealed 22 July 1997.*
- (2) The registrant of any premises shall, in relation to those premises and any field sites under the control of the registrant -
    - (a) inform himself of the hazards attendant on the presence of radiation and may for that purpose obtain the advice and services of a qualified expert;

- (b) *deleted 22 July 1997.*
- (c) ensure that each radiation worker and each person authorized by the registrant to visit areas where radiation may be present is -
  - (i) properly and adequately instructed in the use of all necessary safeguards and procedures; and
  - (ii) supplied with such shielding, protective equipment and safety devices as may be necessary for the person's safety;
- (ca) ensure that each radiation worker is -
  - (i) provided with copies of, or access to, instruction or operating manuals for all devices or things containing radioactive substances and for all irradiating apparatus and electronic products which that worker uses or operates;
  - (ii) given specific instructions on how to use the radioactive substances, and how to use or operate the irradiating apparatus and electronic products which that worker uses or operates so as to minimize any potential exposure to radiation of the worker, other employees or the public;
  - (iii) instructed in radiation safety; and
  - (iv) familiar with any working rules prepared under subregulation (3)(a) for the radioactive substances, irradiating apparatus and electronic products which that worker uses or operates,to a level appropriate for the worker's functions;
- (cb) ensure that each radiation worker is -
  - (i) licensed;
  - (ii) supervised by, and under the direction of, a person who is licensed; or
  - (iii) exempt from the requirement to be licensed; and
- (d) notify the Council in writing as soon as practicable after becoming aware of any of the following situations -
  - (i) any areas which are not normally occupied by human beings but in which visiting human beings may be exposed to hazardous radiation;
  - (ii) any condition or situation which, although not normally considered to be a radiation hazard, may become a radiation hazard under special or unusual circumstances: and
  - (iii) a radiation hazard which emanates from a source of radiation (whether or not on the premises or field site) which is not under the control of the registrant.
- (3) The radiation safety officer appointed by a registrant shall, in relation to that registrant's premises and any field sites under the control of that registrant -

- (a) prepare working rules for the safe use and operation of radioactive substances, irradiating apparatus and electronic products if -
  - (i) directed to do so in writing by the Council;
  - (ii) required to do so under these regulations ; or
  - (iii) required to do so by a condition, restriction or limitation imposed under Section 36 on the registration of those premises or of any irradiating apparatus or electronic product;
- (b) ensure that -
  - (i) no radioactive substances are manufactured, used or stored; and
  - (ii) no irradiating apparatus or electronic products are installed,  
in any place unless -
    - (iii) the Council has approved plans for that place which set out details of -
      - (I) its dimensions;
      - (II) the materials used, or to be used, in its construction;
      - (III) if unsealed radioactive substances are to be used in that place, the ventilation, drainage, sewage disposal and lighting systems installed or to be installed;
      - (IV) its proximity to other parts of the premises or field site and to places outside the premises or field site and the likely effect on them of the proposed use of that place; and
      - (V) any other details requested by the Council;
  - and
  - (iv) that area conforms to those plans;
- (c) ensure that all appropriate shielding, safety devices, protective equipment, radiation monitoring and radiation surveying devices required by these regulations or by a condition, restriction or limitation imposed under section 36 to be installed or available are -
  - (i) installed or available;
  - (ii) regularly tested and serviced; and
  - (iii) repaired and replaced when necessary;
- (d) make recommendations to the registrant on the need or otherwise for the medical examination of radiation workers;
- (e) maintain all records required by the Act or these regulations to be kept by the



- registrant;
- (f) ensure that any conditions, restrictions or limitations imposed under section 36 on the registration of -
- (i) the premises; or
  - (ii) any irradiating apparatus or electronic product,
- of which the radiation safety officer has been notified, are complied with;
- (g) notify the registrant of any suspected or known contravention of -
- (i) these regulations; or
  - (ii) any condition, restriction or limitation imposed under section 36 on the registration of -
- (I) the premises; or
  - (II) any irradiating apparatus or electronic product,
- as soon as practicable after becoming aware of it;
- (h) if any person is unnecessarily exposed to radiation, evaluate the radiation dose received by that person in accordance with any directions given by the Council; and
- (i) notify the registrant of -
- (i) the exposure of any person (other than a patient exposed for diagnostic or therapeutic purposes) to a radiation dose which exceeds the limits calculated under regulation 15; or
  - (ii) any abnormal or unplanned radiation exposure as set out in regulation 19A(1).
- (4) A radiation worker shall not use any radioactive substances, or use or operate any irradiating apparatus or electronic product, the registration of which is required by section 28, without the prior permission of the registrant.

**ABNORMAL OR UNPLANNED RADIATION EXPOSURES**

- 19A (1) An abnormal or unplanned radiation exposure occurs if -
- (a) during the administration of a radioactive substance for diagnostic purposes, the quantity of the substance administered exceeds the quantity prescribed by the responsible licensee by 50% or more;
  - (b) during the administration of radiation for therapeutic purposes, the radiation dose or the energy or power imparted to the patient differs from that prescribed by the responsible licensee by 15% or more;
  - (c) there is an unintended emission of radiation as a result of damage to, or the

malfunction of -

- (i) an irradiating apparatus;
  - (ii) an electronic product;
  - (iii) a device or thing containing a radioactive substance; or
  - (iv) a device controlling the application of radiation from a radioactive substance;
- (d) a radioactive substance which was not prescribed by a licensee for diagnostic or therapeutic purposes, is used for one of those purposes;
- (e) a surface, substance or material is contaminated by a radioactive substance resulting from the spillage of more than 10 times the exempt quantity of that substance specified in Schedule V; or
- (f) a radioactive substance is unlawfully released into the environment in a concentration exceeding the levels specified in regulation 31.
- (2) As soon as practicable after becoming aware of any abnormal or unplanned radiation exposure occurring on the premises or a field site, the registrant shall;
- (a) notify the Council in writing of the exposure;
  - (b) ascertain the cause of the exposure;
  - (c) if the cause of the exposure was damage to, or the malfunction of, any irradiating apparatus, electronic product, device or thing referred to in subregulation (1)(c) -
    - (i) cause the apparatus, product, device or thing to be repaired, or removed from the premises or field site and taken to a safe place; and
    - (ii) ensure that, until it is so repaired or removed -
      - (I) it is not used; or
      - (II) if the damage or malfunction can be isolated without adversely affecting the safety or performance of the apparatus, product, device or thing, that it is so isolated;
- and
- (d) inform any person who may have been exposed to the abnormal or unplanned radiation exposure of -
- (i) the occurrence of the exposure; and
  - (ii) the actions taken to rectify the situation and to prevent a recurrence;
- (3) A notification given under subregulation (2)(a) is to include details of -
- (a) the nature, type and cause of the abnormal or unplanned radiation exposure;

- (b) the location and time of, and the people involved in, its occurrence;
  - (c) the area over which any radioactive substance may have been dispersed;
  - (d) any personal injury or exposure sustained by any person; including an assessment of the radiation dose received; and
  - (e) the actions taken to rectify the situation and to prevent a recurrence.
- (4) In subregulation (2)(c) -
- “repaired” means repaired by an approved person and certified by that person as functioning correctly and fit to be returned to use.

## **PART V - ELECTRONIC PRODUCTS**

### **Division 2 - Lasers**

52. (1) In this Division and in Schedules XIII and XIV, unless the contrary intention appears -
- “average output power” means the total energy imparted during exposure divided by the duration of the exposure;
- "controlled area" means controlled area within the meaning of subregulation (2);
- "laser system" means functional assembly of electrical, mechanical and optical components which includes a laser;
- “regulated class 3B laser” means -
- (a) a class 3B laser with average output power greater than 5 milliwatts; or
  - (b) a single pulsed class 3B laser.
- (2) For the purposes of this Division and of Schedules XIII and XIV, a controlled area is an area -
- (a) in which the activities of persons are controlled and supervised for the purpose of protection from radiation hazards;
  - (b) the extent of which is determined by the person in whose name the premises in which that area is situated are registered; and
  - (c) which is defined by approved screens or baffles having absorbing or diffusing reflecting surfaces.

### **53. Lasers to be in compliance with the laser safety standard**

A person who manufactures, sells, uses or is in possession of a laser shall comply with the laser safety standard to the extent that the standard can be applied to the person in the circumstances.

53A Regulations 54,55 and 56 are in addition to regulation 53

The duties imposed on a person by regulations 54, 55 and 56 apply in addition to any duty imposed on that person by regulation 53.

**53B Laser pointers**

- (1) A person shall not manufacture, sell, use or possess a laser pointer unless —
- (a) it is a class 1 or class 2 laser; or
  - (b) the Council has imposed a condition in relation to the registration of the laser under section 28 that it is to be used only for the purpose of entertainment.
- (2) In subregulation (1) —
- “**laser pointer**” means a laser for —
- (a) pointing at objects or images; or
  - (b) recreation or a musement.

*[It is a defence to a prosecution for an offence against regulation 53B(1) in relation to the possession of a laser pointer, to prove that the defendant possessed the pointer at the commencement of these regulations. That defence applies only until 31 May 2000. – see regulations 8(2) and 8(3) of the Radiation Safety (General) Amendment Regulations 1999]*

**Regulated class 3B lasers**

54. (1) The registrant of any premises in which a regulated class 3B laser is operated or used shall -
- (a) require persons on those premises to follow such approved procedures; and
  - (b) give such directions,
- as are necessary or desirable for preventing interbeam and intrabeam exposure to radiation of persons on those premises
- (2) A person -
- (a) who is required to follow an approved procedure; or
  - (b) to whom a direction is given,
- under subregulation (1) shall comply with that requirement or direction, as the case requires.
- (3) The registrant of any premises in which a regulated class 3B laser is operated or used shall -
- (a) affix to that laser or to the protective housing of its laser system labels in accordance with the requirements of the laser safety standard; and
  - (b) display -
    - (i) while the laser is being operated or used, warning signs in conspicuous locations inside and outside the area in which that operation or use is taking place and on doors giving access to that area; and

- (ii) a warning sign in a prominent location near the laser,  
in accordance with the requirements of the laser safety standard.

- (4) The registrant of any premises in which a regulated class 3B laser is operated or used shall ensure that the requirements of Schedule XIII are complied with in relation to that laser.

**Class 4 lasers**

55. The registrant of any premises in which a class 4 laser is operated or used shall -
- (a) comply with regulation 54(1), (2) and (3) as if the class 4 laser were a regulated class 3B laser; and
  - (b) ensure that the requirements of Schedule XIV are complied with in relation to that laser.

**Requirements for enclosed lasers**

56. (1) The registrant of any premises in which the totally enclosed laser system of a regulated class 3B laser or a class 4 laser is operated or used shall ensure that -
- (a) the protective housing of that laser system limits the maximum accessible radiation to the maximum permissible exposure level specified in Tables VI, VII and VIII of the laser safety standard;
  - (b) control measures applicable to the class of laser concerned are applied when its laser system is in normal operation;
  - (c) persons who require access to that laser system for the purpose of servicing or maintaining it comply with the control measures and procedural requirements applicable to the class of laser concerned; and
  - (d) the laser or its laser system is provided with safety interlocks complying with Section 4.3 of the laser safety standard for any part of the protective housing the removal or displacement of which allows human access to radiation in excess of the maximum permissible exposure level specified in Tables VI, VII and VIII of the laser safety standard.
- (2) The registrant of any premises in which a regulated class 3B laser or a class 4 laser, which is itself enclosed, or the beam path of which is enclosed, by any covers, is operated or used shall, when the laser or its laser system is being operated or used with those covers removed for the purpose of servicing, maintenance, repair, testing or any like procedure, ensure that-
- (a) the laser is operated or used only within a temporary controlled area -
    - (i) defined by approved non-reflective screens or other means; and
    - (ii) provided with all safety measures required for persons working inside and outside it;and
  - (b) the illuminance level at all working sites is not less than 350 lux.

[Regulation 7]

**SCHEDULE VII**

**EXEMPTED ELECTRONIC PRODUCTS**

<b>Item</b>	<b>Electronic Product</b>	<b>Regulations from which there is no exemption under section 6 and regulation 7</b>
1	Microwave Ovens	regulations 39 and 40
2	Class 1 lasers	regulation 53
3	Class 2 lasers	regulation 53
4	Class 3A lasers	regulation 53 and 53B
5	Class 3B(R) lasers	regulation 53 and 53B
6	Class 3B lasers with average output power of 5 milliwatts or less, other than single pulsed lasers.	regulation 53 and 53B

**SCHEDULE XIII**

**REQUIREMENTS TO BE COMPLIED WITH IN RESPECT OF  
PREMISES IN WHICH REGULATED CLASS 3B LASERS ARE  
OPERATED OR USED**

1. Such beam stops, beam enlarging systems, shutters or other safety devices as the Council from time to time directs shall be incorporated in the laser or its system.
2. The beam of the laser shall be -
  - (a) contained within enclosures; or
  - (b) terminated at the end of the useful beam path by a beam trap or, in the case of a laser which is an infra-red laser, by a highly absorbent backstop.
3. In the case of a laser which is an ultraviolet laser, such special precautions as the Council from time to time directs for reducing radiation or preventing undesirable chemical reactions shall be taken.
4. Any optical system used for viewing in connection with the laser shall be provided with an interlock or filter to reduce ocular irradiation to a safe level.
5. The laser or its laser system shall be provided with a master switch which, when a key, magnetic card, cipher combination or other similar device is removed therefrom, makes it impossible to operate or use the laser or its laser system.
6. Labels shall be affixed to the laser or to the protective housing of its laser system in accordance with the requirements of the laser safety standard.
7. Approved instructions shall be issued to all persons operating or using the laser.
8. Persons, other than persons authorized by the person in whose name the premises concerned are registered to operate or use the laser or its laser system, shall not operate or use the laser or its laser system.
9. Whenever persons operating or using the laser or its laser system are exposed to potentially hazardous laser radiation, those persons shall be provided with protective eye-wear in accordance with Section 10.8 of the laser safety standard.
10. The laser or its laser system shall be operated or used only in a controlled area.
11. Bench and wall surfaces in the controlled area referred to in item 10 shall be painted with matt paints of approved colours so that those surfaces are not highly reflective to the radiation of the laser.
12. Areas which are exposed to reflections from an infra-red laser or its laser system shall be protected by screening the beam or target area concerned with infra-red absorbent material.
13. The illuminance level in the controlled area referred to in item 10 shall, unless the Council otherwise directs, be not less than 350 lux.
14. Persons other than those operating or using the laser or its laser system shall not enter the controlled area referred to in item 10 unless they have the permission of the person in whose name the premises

concerned are registered to do so and take such protective measures as he directs.

15. There shall be displayed -

- (a) in conspicuous locations inside and outside the controlled area referred to in item 10;
- (b) at all entrances giving access to the controlled area; and
- (c) in a prominent position near the laser,

area warning signs in accordance with Section 10.5 of the laser safety standard.

16. Persons operating or using the laser system are to undergo eye examinations in accordance with Appendix E to the laser safety standard.



**SCHEDULE XIV**

**REQUIREMENTS TO BE COMPLIED WITH IN RESPECT OF  
PREMISES IN WHICH CLASS 4 LASERS ARE OPERATED OR USED**

1. The entire beam path of the laser shall be enclosed and that enclosure shall be equipped with interlocks in accordance with Section 4.3 of the laser safety standard in order to prevent the operation or use of the laser if that enclosure is not properly installed.
2. The laser or its laser system shall be provided with a master switch which, when a key, magnetic card, cipher combination or other similar device is removed makes it impossible to operate the laser or its laser system.
3. The beam of the laser or its laser system shall be terminated in an absorbent fire resistant material, which shall be inspected periodical for signs of deterioration.
4. If the laser or its laser system is operated or used without its entire beam path and interaction site enclosed or use shall take place in a controlled area which is permanently isolated from other areas within the premises concerned.
5. Except in medical laser installations, safety latches or interlocks designed -
  - (a) to prevent uncontrolled entry into;
  - (b) to enable rapid exit from; and
  - (c) to enable rapid entry in an emergency into,the controlled area referred to in item 4 shall be installed.
6. It shall be possible temporarily to override entrance safety switches to permit persons to operate or use the laser or its laser system whilst that operation or use is continuous.
7. In the case of a pulsed laser, power supplies thereto shall be as far therefrom as possible.
8. In industrial laser installations, the laser or its laser system shall be -
  - (a) operated or used; and
  - (b) monitored by means of closed circuit television or through a viewing window of approved design,from a position outside the controlled area referred to in item 4.
9. A control switch shall be situated in the controlled area referred to in item 4 for the purpose of switching off the laser in the event of an emergency.
10. Surfaces within the controlled area referred to in item 4 shall be rendered non-reflective by means of approved materials to reduce the possibility of hazardous diffuse reflections.
11. In the case of an infrared laser, surfaces within the controlled area referred to in item 4 which are

- exposed to reflections from that laser shall be protected by screening with approved fire-resistant material close to the reflecting source of that laser.
12. *deleted 15 October 1996.*
  13. *deleted 15 October 1996.*
  14. Approved ear protection shall be provided for persons operating or using the laser during noisy applications thereof.
  15. The requirements of Part IV shall be complied with in respect of any ionising radiation produced by the laser.
  16. High pressure arc lamps and filament lamps in the laser or its laser system shall be enclosed in housings capable of withstanding the maximum explosive pressures resulting from the disintegration of those lamps.
  17. The target of the laser and elements of its optical train which are liable to shatter during the operation or use of the laser shall be enclosed in housings or otherwise protected to prevent injury as a result of any such shattering to persons operating, using or observing the laser.
  18. Approved shielding shall be provided in respect of ultraviolet, visible and infrared collateral radiation from a laser discharge tube, optical pump source or other part of the laser or its laser system.
  19. *deleted 15 October 1996.*
  20. The illuminance level in the controlled area referred to in item 4 shall be not less than 350 lux at all working sites during operation or use of the laser.
  21. An alarm system, consisting of lights visible through protective eyewear, shall be used to give warning of the operation or use of the laser.
  22. Area warning signs complying with Section 10.5 of the laser safety standard shall be displayed at the entrance to the controlled area referred to in item 4.
  23. All persons having access to the controlled area referred to in item 4 shall be authorized to do so by or on behalf of the person in whose name the premises concerned are registered.
  24. Persons operating or using the laser system are to undergo eye examinations in accordance with Appendix E to the laser safety standard.