Serial Number **1951/155**

THE RADIATION PROTECTION REGULATIONS 1951

B. C. FREYBERG, Governor-General

ORDER IN COUNCIL

At the Government House at Wellington, this 18th day of July, 1951

Present :

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL

PURSUANT to the Radioactive Substances Act, 1949, His Excellency the Governor-General, acting by and with the advice and consent of the Executive Council, doth hereby make the following regulations.

REGULATIONS

1. (1) These regulations may be cited as the Radiation Protection Regulations 1951.

(2) These regulations shall come into force on the day after the date of their notification in the *Gazette*.

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

" The Act " means the Radioactive Substances Act, 1949 :

" Licensee ", in relation to any irradiating apparatus or radioactive substance, means a person holding a licence for the time being in force issued under the Act with respect to that apparatus or that substance :

" Proximity ", in relation to any irradiating apparatus or radioactive substance, means a position in which a person may be liable to an exposure in excess of one tenth of the maximum permissible exposure :

" Radiation work " means work done by any person which is liable to involve an exposure in excess of one tenth of the maximum permissible exposure computed over the relevant period, or work by a person who is engaged for a major portion of his working time with the use or application of, or in proximity to, irradiating apparatus or radioactive substance or both :

" Recommendations for Protection from Radiation Hazards " means recommendations issued from time to time by the Director-General as to the precautions to be taken by persons working with irradiating apparatus or radioactive substances to protect them against radiation hazards :

Expressions used herein have the same meanings as in the Act : Technical terms used herein have the meanings assigned to them by the Schedule hereto.

(2) For the purposes of the Act and of these regulations,—

" Irradiating apparatus " means any apparatus that can be used for the production of x-rays or gamma rays or for the acceleration of atomic particles in such a way that it produces a dosage rate exceeding 5 milliroentgens equivalent man per hour (5 mrem./hour) at a point which can be occupied by a living being :

" Radioactive substance " means any substance which—

(*a*) Emits alpha particles and has a half life of less than 10^6 years and undergoes more than 100 atomic disintegrations per gram per second ; or

(*b*) Undergoes more than 10^4 atomic disintegrations per second and contains Sr^{90} or any other element of similar hazard ; or

(*c*) Undergoes more than 10^5 atomic disintegrations per second and contains Sr^{89} or any other element of similar hazard ; or

(*d*) Undergoes more than 10^6 atomic disintegrations per second and contains Na^{24} or any other element of similiar hazard.

(3) In the definition of the expression " radioactive substance " in the last preceding subclause the symbol used in each case is the recognized chemical symbol for the element concerned and the number used is its mass number.

3. Nothing contained in these regulations shall derogate from the provisions of the Electrical Wiring (X-ray) Regulations 1944* or the Transport of Radioactive Substances Regulations 1951.†

4. These regulations are arranged into Parts as follows :—

Part I.—Health (Regulations 5 to 12).
Part II.—Working Hours (Regulations 13 and 14).
Part III.—Ventilation, &c., of Rooms in Which Irradiating Apparatus or Radioactive Substances are Used (Regulations 15 to 17).
Part IV.—Maximum Permissible Exposure (Tolerance Dose or Indifference Dose), (Regulations 18 to 20).
Part V.—Material Protection and Safe Practice (Regulations 21 to 32).
Part VI.—Miscellaneous (Regulations 34 to 39).

Part I—Health

5. No person shall begin radiation work unless before commencing that work he undergoes a medical examination and a blood examination. The results of those examinations shall determine the acceptance or rejection of the person for such work in accordance with regulation 7 hereof.

6. Every person engaged in radiation work with or in proximity to irradiating apparatus shall have a blood examination at intervals of not more than six months, and every such person working with or in proximity to radioactive substances shall have such an examination at intervals of not more than three months. Every person engaged in radiation work shall have a medical examination every twelve

* Statutory Regulations 1944, Serial number 1944/157, page 429.
† Statutory Regulations 1951, Serial number 1951/156, page 493.

months. The results of those examinations shall determine the continuance, limitation, or termination of the work of the individual concerned in accordance with regulation 9 hereof.

7. No person shall begin radiation work who has—

(*a*) Any significant hæmatological abnormality as set out in Recommendations for Protection from Radiation Hazards ; or

(*b*) Faulty vision which cannot be adequately corrected by the use of glasses.

8. In the case of persons engaged in radiation work,—

(*a*) Any change revealed in a blood examination which in the opinion of a pathologist or other competent medical authority is consistent with the effects of overexposure to radiation as defined in Recommendations for Protection from Radiation Hazards shall be considered to indicate overexposure to radiation :

(*b*) Skin reaction of either an acute or a chronic type which is considered to be due to the effects of radiation shall be considered to indicate overexposure to radiation.

9. Where there is evidence of overexposure to radiation, the person affected shall cease work involving the radiation hazard, and shall be placed by the licensee under medical treatment for an adequate period.

10. All cases of overexposure to radiation in persons engaged in radiation work shall be notified by the licensee to the Director-General within seven days of the evidence of the overexposure becoming manifest. The Director-General shall appoint a competent person to investigate the working conditions and working habits of the person concerned, and to make recommendations as to the prevention of any recurrence.

11. The results of the medical examinations and of the blood examinations of persons engaged in radiation work as supplied to the licensee shall be kept by the licensee at the place of work of those persons, and shall be open for inspection by any person authorized by the Director-General for the purpose. All the medical records of these examinations shall be open for inspection by any registered medical practitioner authorized by the Director-General for the purpose.

12. Every licensee shall—

(*a*) Cause copies of the Act, of these regulations, of the Electrical Wiring (X-ray) Regulations 1944, of the Transport of Radioactive Substances Regulations 1951, and of all Recommendations for Protection from Radiation Hazards to be placed in a reasonable position where they may be conveniently read by all workers with irradiating apparatus or radioactive substances on premises where any such work is being carried out ; and

(*b*) Where he employs assistants in accordance with regulation 34 hereof, fully instruct those assistants with regard to the occupational hazards of work with irradiating apparatus and radioactive substances.

Part II—Working Hours

13. (1) The working time of persons engaged in radiation work shall not exceed an average of thirty-five hours per week, computed over any four weekly period.

(2) Persons engaged in radiation work shall have in addition to statutory holidays an annual holiday of not less than four weeks, of which at least two weeks must be taken consecutively.

(3) For the purposes of this regulation the expression " statutory holidays " means Christmas Day, Boxing Day, New Year's Day, Good Friday, Easter Monday, Anzac Day, Sovereign's Birthday, Labour Day, and the holiday observed in the locality as Anniversary Day:

Provided that, when any of the above named public holidays (other than Anzac Day) that can fall on a Saturday or a Sunday so falls, the next succeeding day (not being a Sunday) that is not one of the said public holidays or observed as a substituted holiday under this proviso shall be allowed.

14. Notwithstanding anything in regulation 13 hereof, no radiologist or radiotherapist shall be liable to be proceeded against or to suffer any penalty for working such hours as he considers necessary for the purpose of discharging his professional obligations.

Part III—Ventilation, etc., of Rooms in Which Irradiating Apparatus or Radioactive Substances are Used

15. (1) No person shall work with irradiating apparatus or radioactive substances in any room which is not adequately ventilated and lighted.

(2) The Director-General, acting on the advice of the Radiological Advisory Council, may from time to time prescribe the standard of ventilation and lighting to be provided in respect of any specified room in which work with any irradiating apparatus or radioactive substance is carried on.

16. (1) No person shall occupy any room in which—

(*a*) The concentration of radon in air exceeds 10^{-14} curies per cubic centimetre; or

(*b*) The concentration in air of substances emitting beta particles or gamma rays exceeds 10^{-13} curies per cubic centimetre; or

(*c*) The concentration of alpha particle emitting substances other than radon exceeds 10^{-16} curies per cubic centimetre.

(2) An approved respirator, combat mask, or air-line hood shall be worn by persons working with any radioactive substance in any location where the concentration of air borne substances emitting beta particles or gamma rays may be greater than 10^{-14} curies per cubic centimetre. Such respirators, combat masks, or air-line hoods shall be inspected and monitored by the licensee after each use and at two monthly intervals when not in use, and they shall be cleaned and decontaminated whenever they are found contaminated.

17. All areas in which there is radiation from any radioactive substance in excess of 5 milliroentgens equivalent man per hour (5 mrem./hour) shall be clearly and unmistakably marked by the licensee as dangerous.

Part IV—Maximum Permissible Exposure (Tolerance Dose or Indifference Dose)

18. Except in the case of a patient who for medical reasons or for reasons of equal cogency is intentionally exposed to radiations from irradiating apparatus or radioactive substances, no person shall be subjected to more than the maximum permissible exposure (tolerance dose or indifference dose) as defined in the Schedule hereto.

19. The amount of radiation received by persons engaged in radiation work shall be measured at not more than half-yearly intervals, but more often if necessary, by persons appointed by the Director-General for the purpose.

20. The numerical values for the thickness of protective materials for safe working distances, for the hæmatological data, and for the amount of exposure to radiation from irradiating apparatus or radioactive substances stated to be safe in these regulations and in any Recommendations for Protection from Radiation Hazards shall be reviewed by the Council if the tolerance dose or indifference dose on which those numerical values are based is changed by international agreement or when conclusive medical, physical, or biological evidence necessitates that revision.

Part V—Material Protection and Safe Practice

21. (1) All protective material, other than sheet lead or material permanently incorporated in the walls of buildings, shall be indelibly marked by the manufacturers or their agents in such a way as to show readily the equivalent thickness of lead as defined in the Schedule hereto. For protective materials which depend upon substances other than lead for their protective properties the constant potential used for the generation of x-rays or gamma rays under the conditions at which the equivalence applies shall also be stated.

(2) The equivalent thickness of lead of all protective glass, such as lead glass or lead barium glass, whether permanently incorporated in the walls of the buildings or not, shall be clearly and indelibly marked on it by the manufacturers or by their agents.

22. The protective containers or enclosures of all x-ray tubes used for industrial or for medical (diagnostic or therapeutic) purposes shall be indelibly marked by the manufacturers or by their agents in such a way as to show readily the equivalent lead thickness of the protective enclosure for the maximum voltage for which the container or enclosure is designed to be used. If the thickness of the protective material incorporated in the protective container is not uniform over the entire surface of the container or enclosure, the statement of the equivalent thickness of lead may be replaced by a statement of the farthest distance in any direction, measured from the target of the x-ray tube, at which all radiation other than the direct beam, as defined in the Schedule hereto, is reduced to the tolerance dose rate, if the enclosed x-ray tube is energized at its highest rated continuous milliamperage and maximum voltage.

23. (1) No person shall administer any treatment with any given combination of tube voltage, tube current, filter, or focal skin distance, unless the dosage rate and the quality of the radiation emitted by any x-ray tube used for therapeutic purposes have been determined by an ionometric or other method approved by the Council. Both the dosage rate and the quality of the radiation for each such combination shall be redetermined from time to time at such intervals as the Director-General may prescribe. A record of those measurements shall be kept by the licensee and shall be open for inspection by any person authorized by the Director-General for this purpose.

(2) No person shall use a dosemeter or a dosage rate meter for measurements made in accordance with subclause (1) of this regulation, unless it is independent of, or corrected for, the quality of radiation

within the range for which it is designed or used, and is provided with suitable arrangements for checking its ability to reproduce its readings.

24. (1) The Director-General shall arrange for the calibration of all dosemeters or dosage rate meters used in accordance with regulation 23 hereof twice yearly *in situ* over the range of wavelengths for which they are designed or used, and shall appoint persons to carry out these calibrations.

(2) Time switches, exposure timers, and treatment timers used in connection with x-ray installations for medical therapeutic purposes shall be tested for their accuracy at regular intervals by persons appointed for the purpose by the Director-General. No person shall use any timer in connection with x-ray therapy unless it has been checked and found to be accurate to within 1 per cent.

25. (1) If a permanently sealed container of radioactive substances, such as a radium needle, radium tube, or radium plaque is found to be damaged in the course of its use, the licensee shall withdraw it from service and shall immediately enclose the same in an airtight container, such as a sealed test-tube.

(2) All damage to containers of radioactive substances, and all loss of radioactive substances, whether in containers or not, shall be notified immediately by the licensee to the Director-General.

(3) Permanently sealed containers of radioactive substances, such as radium needles, radium tubes, or radium plaques, shall be tested periodically by persons appointed by the Director-General for the purpose.

26. All persons exposed to radiation from x-ray apparatus for therapeutic purposes, and all installations used for the administration of that treatment, shall be kept under continuous supervision by the person administering the treatment while treatment is being given. The person administering the treatment shall determine its duration either by an automatic timing or warning device in accordance with subclause (2) of regulation 24 hereof or by an integrating dosemeter.

27. In any therapeutic applications of x-rays, the filter used for the direct beam or the half-value layer resulting therefrom as defined in the Schedule hereto shall at each treatment be entered on the treatment records of the patient by the person administering the treatment. If the filter is changed before any treatment, the details of the new filter shall be checked by the person administering the treatment and by some other person licensed under the Act or entrusted with this checking by some such licensed person under the full responsibility of that licensed person, and that other person shall also sign and date the details in the treatment record before the treatment is administered.

28. The Director-General, acting on the advice of the Radiological Advisory Council, may at any time prohibit any person from employing or using any specified manner of employing any specified equipment in the conduct of fluoroscopic examinations if in the opinion of the Director-General an undue radiation hazard is involved. Every person to whom any such prohibition is given shall forthwith comply with the same.

29. The dosage rate at the panel of every x-ray apparatus employed for fluoroscopic examinations shall be determined under maximum normal operating conditions by some person appointed by the Director-General for that purpose, and shall be redetermined at such intervals as the Director-General may prescribe.

30. No person shall do x-ray work in any room in which combustible anæsthetic agents are used or present, mixed with air or any other source of oxygen.

31. All radioactive substances in transit shall be packed and transported in accordance with the Transport of Radioactive Substances Regulations 1951.

32. The following rules shall be observed in all work with radioactive substances which are not permanently sealed, namely :—

(*a*) Wherever unsealed radioactive substances are handled, danger of contamination and of poisoning by ingestion, inhalation, or injection exists. Meticulous care shall be taken by the persons working with that substance to avoid contamination with radioactive substances of any part of the body, and of rooms, floors, fixtures, tools, and clothing. Adequate methods of protection and of control shall be used to prevent contamination and to check whether contamination has occurred :

(*b*) The entrances to all areas where contamination with radioactive substances is possible shall be clearly and unmistakably marked by the licensee, and no person shall enter any such area unless he is engaged in work with radioactive substances or is specifically authorized to enter the area by the licensee :

(*c*) Wherever contamination of clothing or hands with radioactive substances is possible, protective garments such as coveralls and gloves shall be worn by the persons working with that substance. Protective garments must be taken off before leaving the area in which contamination with radioactive substances is possible :

(*d*) Eating or smoking, and the storing, preparing, or handling of food, drugs, smoking utensils and materials, and cosmetics, are forbidden in any area where contamination with radioactive substances is possible. In this paragraph the terms " food " and " drugs " have the same meanings as in the Food and Drugs Act, 1947, and the term " cosmetics " has the same meaning as in the Medical Advertisements Act, 1942 :

(*e*) The pipetting by mouth of any solution containing radioactive substances is forbidden :

(*f*) The exposure received by all persons admitted to areas where contamination with any radioactive substance is possible or where any radioactive substance is stored shall be measured by an ionometric or densitometric method approved by the Council in such a manner that a cumulative record of the exposure may be made, and the results of those measurements shall be kept by the licensee, and shall be open for inspection by any person authorized by the Director-General for the purpose :

(*g*) At intervals of not more than one week, measurements of the contamination with radioactive substances shall be made by the licensee of all protective garments worn in rooms where contamination with radioactive substances is possible, and of the surfaces of all working spaces, floors, fixtures, and tools exposed to the danger of contamination with radioactive substances. A record of these measurements shall be kept by the licensee in a permanent form and shall be open for inspection by any person authorized by the Director-General for the purpose :

(*h*) Meticulous care shall be taken by the licensee in the disposal of waste containing any radioactive substance, and such disposal shall be made only in a manner from time to time approved by the Director-General, either generally or in any particular case.

Part VI—Miscellaneous

33. (1) Full records shall be kept by the licensee at the place of application of all applications of x-rays, accelerated atomic particles, or radioactive substances for medical therapeutic purposes, and shall be open for inspection by any registered medical practitioner authorized by the Director-General for the purpose.

(2) Every person owning or controlling radioactive substances shall keep a register sufficient to ensure that at all times an efficient check is maintained on the location of every individual container or applicator of radioactive substances and of the use to which any radioactive substance has been put. Every such register shall be open for inspection by any person authorized by the Director-General for the purpose.

34. (1) A licensee shall be entitled to employ other persons, who shall work under the supervision or instructions of the licensee.

(2) Non-compliance with any provision of the Act or of these regulations by a person employed by a licensee shall constitute a valid reason for the immediate termination of the employment of the person concerned.

(3) Any person who refuses to carry out any instruction which contravenes any provision of the Act or of these regulations shall not be considered guilty of any breach of discipline or duty.

35. Except where these regulations otherwise provide, and without limiting the liability of any other person for any breach by him of these regulations, every obligation imposed by these regulations shall be deemed to be an obligation binding on the licensee, who shall be responsible for the compliance with the Act and these regulations by every person employed by him :

Provided that in any proceedings that by virtue of this regulation are taken against any licensee in respect of a contravention of or non-compliance with any such provision on the part of any other person it shall be a defence for the licensee to prove that the contravention or non-compliance occurred without his knowledge and that he exercised all due diligence to prevent the contravention or to secure compliance with the provision, as the case may be.

36. Forms for applications, licences, registers, notices, and other documents required for the purposes of the Act or of these regulations may from time to time be prescribed by the Director-General.

37. (1) A fee of 10s. shall be payable to the Department of Health in respect of every application for a licence or for the renewal of a licence under the Act:

Provided that no fee shall be payable in respect of any such application for a licence or for the renewal of a licence required for the purposes of his official duties by a person employed in any Department of State or by any Hospital Board.

(2) Payment of the fee (if any) shall be made when the application is made, and no application shall be dealt with until the fee (if any) is paid.

38. (1) In any case where the Minister, upon application being made to him in writing by the person concerned, is satisfied that strict compliance with these regulations is not possible or would involve expenditure or hardship out of proportion to the degree of freedom from radiation hazard to be achieved by such compliance, he may, on the recommendation of the Council, exempt any particular person from compliance with specified provisions of these regulations, or may modify the requirements of any such specified provision if he is satisfied that adequate freedom from radiation hazards can and will otherwise be secured.

(2) Any exemption or modification granted by the Minister in accordance with the last preceding subclause may be revoked by him at any time on the advice of the Council that the grounds on which the exemption or modification was granted no longer exist or no longer warrant the granting of the exemption or modification.

39. The Director-General may from time to time issue and publish in such manner as he thinks fit Recommendations for Protection from Radiation Hazards. Those recommendations shall be issued for the guidance of persons working with irradiating apparatus or radioactive substances to protect them against radiation hazards, but, except for the purposes of paragraph (*a*) of regulation 7 hereof or of paragraph (*a*) of regulation 8 hereof, shall have force as recommendations only, and shall not be binding on any person, nor shall they be deemed part of these regulations.

SCHEDULE

Regulation 2 (1)]

DEFINITION OF TECHNICAL EXPRESSIONS USED

"Absorption curve" means a curve showing the percentage of radiation remaining after the passage of a beam of radiation through an increasing thickness of a particular substance.

"Calibration" means the comparison of a practical measuring instrument or device with another which is known to read correctly.

"Combustible anæsthetic agent" means a substance used as an anæsthetic which is inflammable in mixtures with air, oxygen, or nitrous oxide, such as ordinary or di-ethyl ether, ethylene, cyclopropane, propylene, divinyl ether (vinethene), and ethyl chloride. A mixture of oxygen or air with nitrous oxide does not constitute a combustible anæsthetic agent if used alone or supplemented by solid or liquid non-volatile drugs applied by local, regional, spinal, intraveneous, oral, or rectal routes of administration.

"Curie" means that amount of radioactive substance that disintegrates at the rate of $3{\cdot}700 \times 10^{10}$ atomic disintegrations per second.

"Direct beam" means the beam of x-rays used for examination or treatment.

"Dosage rate" has the same meaning as the expression "exposure rate."

"Dose" has the same meaning as the expression "exposure."

SCHEDULE—*continued*

"Dosemeter" means an instrument for measuring exposure to radiation, usually by ionometric methods.

"Equivalent constant potential" means the constant potential that has to be applied to an x-ray tube to yield an absorption curve of the same form as the absorption curve in the same material for the unknown radiation in question.

"Equivalent thickness of lead" means such thickness of lead which is equally opaque to a specific quality of radiation.

"Exposure" or "dose" means a physical quantity, expressed in roentgens, associated with the radiation traversing a specified point during a specified time, treatment, or act of irradiation, identical with the number of roentgens that would be recorded by a standard ionization chamber traversed by radiation identical in quality and intensity with the radiation traversing the specified point in the specified act of irradiation.

"Exposure rate" or "dosage rate" means the exposure per unit time, usually expressed as "roentgens per minute" and abbreviated "r/min."

"Field" means the area on the skin through which a given beam of radiation passes.

"Filter" means any substance interposed in a beam of radiation for the purpose of changing its quality or intensity, or both.

"Filtration" means changing the quality or intensity, or both, of a beam of radiation by passing it through a layer of material.

"Free air exposure" means exposure measured in air when the scattered radiation is negligible.

"Half-value layer" means the thickness of material which reduces to half the intensity of a particular beam of radiation.

"Indifference dose" has the same meaning as the expression "maximum permissible exposure."

"Intensity" means the dose or exposure per unit of time.

"Ionization chamber" means a device for collecting ions produced in a definite region in the beam of radiation for the purpose of measuring the exposure.

"Ionometric method" means a method of measurement based on the ionization produced by the radiation which is being measured.

"Maximum permissible exposure" or "tolerance dose" or "indifference dose" means the amount of radiation which, according to the available medical and biological evidence, will cause no readily observable morbid change in the superficial tissues, nor in the blood, nor in the internal organs, of a person in normal health and working under otherwise satisfactory working conditions.

NOTE.—However, it has been shown in animal experiments that the present maximum permissible exposure may not provide a reasonable safety factor against the production of some types of tumours as after effects of chronic radiation exposure, and that genetic changes may be induced by very small doses of radiations. The possibility cannot be excluded that even strict observance of the maximum permissible exposure may not prevent the occurrence of genetic changes in humans in some future generation. Every effort should therefore be made to strive for the lowest possible exposure in every operation, and to keep the average weekly exposure of any single worker well below the maximum permissible exposure. With this reservation, the maximum permissible exposure during any one week for total or limited body exposure is at present accepted to be 0·3 rem. This represents the total additive exposure from the independent components of all radiations involved. On present information, 0·3 rem can be assumed to be equivalent to 0·3 r of x-radiation or gamma radiation, or to 0·3 rep of beta radiation or to 0·015 rep of alpha radiation, or to about 0·03 rep for fast neutrons and protons, and probably to about 0·06 rep for thermal neutrons. There is no evidence to indicate that the health hazard associated with an exposure to 0·3 rem in any one week depends upon the fraction of the total dose received in any one day.

"Milliroentgen" means one thousandth of one roentgen.

"Minimum focal skin distance" means the distance between the centre of the focal spot of an x-ray tube and the nearest point of the irradiated area.

"Monitoring" means measuring the amount of radiation at a given point in order to ensure that no person is exposed to dangerous amounts of radiation or to contamination with radioactive substances.

"Off focus radiation" means all x-rays other than the direct beam emanating from an x-ray tube or its container.

"Panel" means that surface of the x-ray couch or stand through which the main beam of x-rays emerges.

SCHEDULE—*continued*

"Quality", in relation to radiation, means the property of the radiation which determines the manner in which it affects and is altered by the matter it traverses, expressed quantitatively in terms of equivalent constant potential or half-value layer.

"Roentgen" or "r" means the unit of dose or exposure of x or gamma radiation. It is the quantity of x or gamma radiation such that the associated corpuscular emission per 0·001293 gram of air produces, in air, ions carrying 1 electrostatic unit of quantity of electricity of either sign.

"Roentgen equivalent man" or "rem" means that quantity of radiation which when absorbed by man produces an effect biologically equivalent to the absorption by man of one roentgen of x-rays or gamma radiation.

"Roentgen equivalent physical" or "rep" means that quantity of ionizing radiation which is absorbed in tissue to the extent of 93 ergs per gram of tissue.

"Scattered radiation" means radiation which, during passage through a substance, has undergone a change in direction and may have been modified by an increase in wavelength.

"Skin exposure" or "skin dose" means the exposure or dose at the surface of the skin.

"Standard ionization chamber" means an ionization chamber so designed, with due regard to the definition of the roentgen, that the dose or exposure may be determined by calculation from the electric charge accumulated during irradiation.

"Target" means the anode or anticathode of an x-ray tube.

"Tissue exposure" or "tissue dose" means the exposure or dose at a specified point in the tissue.

"Tolerance dose" has the same meaning as the term "maximum permissible exposure".

T. J. SHERRARD,
Clerk of the Executive Council.

Issued under the authority of the Regulations Act, 1936
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These regulations are administered in the Department of Health.