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Commission de contrôle de l'énergie atomique
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Office Consolidation

Atomic Energy Control Regulations

With amendments to:
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Canada

REGULATIONS MADE PURSUANT TO THE ATOMIC ENERGY CONTROL ACT

PART I

TITLE AND INTERPRETATION

Short Title

1. These Regulations may be cited as the *Atomic Energy Control Regulations*.

Definitions

2.(1) In these Regulations,

"Act" means the *Atomic Energy Control Act*; (*Loi*)

"atomic radiation worker" means [any person who in the course of his work, business or occupation is likely to receive a dose of ionizing radiation in excess of any dose specified in column III of Table 1 to Schedule II, or an exposure to radon daughters in excess of an exposure specified in column II of Table 2 to Schedule II; (*travailleur sous rayonnements*)] Amended SOR/85-1039

"designated" means designated by an order of the Board published in the Canada Gazette; (*désigné*)

"fissionable substance" means any prescribed substance that is, or from which can be obtained, a substance capable of releasing atomic energy by nuclear fission; (*substance fissile*).

"inspector" means any person appointed as an inspector pursuant to subsection 12(1); (*inspecteur*)

"ionizing radiation" means any atomic or sub-atomic particle or electromagnetic wave emitted or produced directly or indirectly by a prescribed substance or nuclear facility and having sufficient energy to produce ionization; (*rayonnement ionisant*)

"licence" means a licence issued by the Board; (*permis*)

"medical adviser" means any person appointed as a medical adviser pursuant to subsection 15(1); (*conseiller médical*)

"nuclear facility" means a nuclear reactor, a sub-critical nuclear reactor, a particle accelerator, [a uranium or thorium mine or mill,] a plant for the separation, processing, re-processing or fabrication of fissionable substances, a plant for the production of deuterium or deuterium compounds, a facility for the disposal of prescribed substances and includes all land, buildings and equipment that are connected or associated with such reactor, accelerator, plant or facility; (*établissement nucléaire*) Amended SOR/78-58

"particle accelerator" [Revoked - SOR/79-422 22 May, 1979]

["prescribed item" means an item that is included in Groups 3 and 4 of the *Export Control List*, other than items included in item 3001, 3002, 3003, 3012, 3013, 4001, 4003, 4012 or 4013 in Group 3 or 4 of that List; (*article prescrit*)] Amended SOR/92-512

["radon daughters" means the following short-lived radioactive decay products of radon-222; polonium-218 (radium A), lead-214 (radium B), bismuth-214 (radium C) and polonium-214 (radium C'); (*produits de filiation du radon*)] Amended SOR/78-58

"rem" means a dose of ionizing radiation that has the same biological effects as 200-250 kilovolt x-rays whose energy is absorbed by the body or any tissue or organ thereof in an amount of 0.01 joules per kilogram; (*rem*)

"scheduled quantity" means that quantity of a radioactive isotope of any element

(*a*) set out in Part I of Schedule I, or

(*b*) calculated in accordance with Part II of that Schedule,

whichever is applicable; (*quantité réglementaire*)

["working level" or "WL" means the amount of any combination of radon daughters in one litre of air that will release 1.3 x 10^3 mega electron volts of alpha parti energy during their radioactive decay to lead-210 (radium D); (*unité alpha ou WL*)] Amended SOR/78-58

["working level month" or "WLM" means the exposure resulting from the inhalation of air containing one working level of radon daughters for one working month, where one working month equals 170 working hours. (*unité alpha-mois ou WLM*)] Amended SOR/78-58

(2) For the purpose of the definition "prescribed substances" in section 2 of the Act, radioactive isotopes of all elements and any substances containing such isotopes are designated as being capable of releasing atomic energy, or as being requisite for the production, use or application of atomic energy.

(3) For the purpose of the definition "rem" in subsection (1), ionizing radiation shall be deemed to have the biological effects designated.

[*Application* Amended SOR/88-144

2.1 These Regulations, other than paragraph 5(1)(*a*), subsection 5(2) and section 23, do not apply in respect of naturally occurring radioactive prescribed substances where the substances

(*a*) are present in a mineral or other material; and

(*b*) have not been related to an activity associated with the development, application and use of atomic energy.]

PART II

PRESCRIBED SUBSTANCES AND ITEMS

3. Subject to section 6, no person shall, unless exempted in writing by the Board, produce, mine, prospect for, refine, use, sell or possess for any purpose any prescribed substance except in accordance with a licence issued pursuant to section 7.

4. Subject to section 6 [and subsection 18.1(5)], no person shall, unless exempted in writing by the Board, use, sell or possess any device or equipment containing radioactive prescribed substances except in accordance with a licence issued pursuant to section 7. Amended SOR/83-459

[5.(1) No person shall Amended SOR/88-144

(*a*) import any prescribed substance,

(*b*) export any prescribed substance, or

(*c*) export any prescribed item.]

except in accordance with a licence issued pursuant to section 7.

(2) A licence referred to in subsection (1) shall be produced by or on behalf of the licensee to a collector of customs at the port of entry into or exit from Canada of the prescribed substance or prescribed item, as the case may be, or at such other place as is designated by the Deputy Minister of National Revenue for Customs and Excise, before the prescribed substance or the prescribed item is released for import or export.

6.(1) No licence is required by any person engaged in

(*a*) the transport of goods for hire or reward in respect of the transport of any prescribed substance or of any device or equipment containing radioactive prescribed substances or any temporary storage of such substance, device or equipment necessary for such transport;

(*b*) prospecting for prescribed substances if such prospecting does not involve the removal of more than ten kilograms of uranium or thorium from any deposit thereof in any one calendar year.

(2) Subject to section (3), no licence is required in respect of

(*a*) a substance containing uranium or thorium in percentages less than 0.05 per cent by weight;

(*b*) any use, sale or possession of a substance containing uranium or thorium if such use, sale or possession does not involve more than 10 kilograms of uranium or thorium in any calendar year;

(*c*) any use, sale or possession of a substance containing deuterium if

(i) such substance does not contain hydrogen having a greater concentration of deuterium than is normally found in nature, or

(ii) such use, sale or possession does not involve more than 10 kilograms of deuterium in any calendar year where such substance does contain hydrogen having a greater concentration of deuterium than is normally found in nature;

(*d*) a substance containing naturally occurring radioactive isotopes of elements of atomic number less than 80 and in no greater concentration than is normally found in nature;

(*e*) a substance containing radioactive isotopes of elements of atomic number less than 90 if

(i) the quantity of such isotopes per kilogram of substance does not exceed the scheduled quantity, and

(ii) any such isotopes on the surface of the substance are not, in the opinion of the Board or a designated officer, readily dispersible and the quantity of such isotopes on the surface of the substance does not exceed one-tenth of the scheduled quantity per square metre of substance;

(*f*) sources of ionizing radiation containing radioactive isotopes of elements of atomic number less than 90 if

(i) the quantity of such isotopes in each such source does not exceed the scheduled quantity, and

(ii) not more than 10 sources are required in any calendar year;

(*g*) any device incorporating a substance containing radioactive isotopes of elements of atomic number less than 90 or of the americium isotope Am-241 if

(i) the total quantity of such isotopes per device does not exceed 10 times the scheduled quantity, and

(ii) [the design of the device and the method of incorporating the radioactive isotopes are approved by the Board or a designated officer]; and — Amended SOR/86-252

(*h*) any incandescent mantle containing thorium.

(3) Nothing in subsection (2) authorizes the use or possession for any purpose without a licence of any substance containing

(*a*) uranium isotope U-233; or

(*b*) uranium having a greater concentration of the isotope U-235 than is normally found in nature.

7.(1) The Board or a designated officer may issue a licence for any purpose referred to in section 3 or in respect of any device or equipment referred to in section 4 upon receipt of a written application from the person requiring such licence.

(2) [The application for a licence referred to in subsection (1) shall include the applicable fee set out in the *AECB Cost Recovery Fees Regulations* and shall set out such of the following information as the Board or a designated officer may require]: — Amended SOR/90-191

(*a*) the nature and quantity of the prescribed substance and the purpose for which it is required;

(*b*) the maximum quantity of the prescribed substance likely to be required at any one time for the purpose set out in the application;

(*c*) a description of the premises in which the prescribed substance is to be located and of any equipment in connection with which it is to be used;

(*d*) a description of the measures to be taken to prevent theft, loss or any unauthorized use of the prescribed substance;

(*e*) a description of the measures to be taken, including any plan in case of accident, to prevent the receipt by any person of a dose of ionizing radiation [or of an exposure to radon daughters] in excess of any dose specified in respect of such person in Schedule II; Amended SOR/78-58

(*f*) a description of the method of disposing of the radioactive prescribed substance;

(*g*) a description of the qualifications, training and experience of any person who is to use the prescribed substance; and

(*h*) any other information necessary to evaluate the application.

(3) [A licence issued by the Board or a designated officer pursuant to subsection (1) may contain such conditions as the Board or the designated officer deems necessary in the interests of health, safety and security and, without limiting the generality of the foregoing, may include conditions respecting] Amended SOR/86-252

(*a*) the measures to be taken to prevent the receipt by any person of a dose of ionizing radiation [or of an exposure to radon daughters] in excess of any dose specified in respect of such person in Schedule II; Amended SOR/78-58

(*b*) the monitoring devices and other methods for measuring the dose of ionizing radiation [or the exposure to radon daughters] received by any person; Amended SOR/78-58

(*c*) instructions to be given to atomic radiation workers respecting the hazards of ionizing radiation and the procedures to be followed to limit exposure to ionizing radiation;

(*d*) the maximum quantity and concentration of radioactive or other hazardous material that may be discharged into the air and water as a result of the use of the prescribed substance;

(*e*) the method of disposing of the radioactive prescribed substance;

(*f*) the measures to be taken to prevent theft, loss or any unauthorized use of the prescribed substance; and

(*g*) the qualifications, training and experience of any person who is to use or supervise the use of the prescribed substance or any device or equipment to which the licence applies.

[(4) The Board or a designated officer may issue a licence to a person for any purpose referred to in subsection 5(1) on receipt of a written application from the person. Amended SOR/90-165

(5) A licence issued by the Board or a designated officer pursuant to subsection (4) may contain such conditions as the Board or the designated officer deems necessary in the interests of health, safety and security.]

PART III

NUCLEAR FACILITIES

8. Unless exempted in writing by the Board, no person shall operate a nuclear facility except in accordance with a licence issued pursuant to section 9.

[9.(1) Subject to section 10, the Board may issue a licence to operate a nuclear facility on receipt by the Board of a written application. Amended SOR/90-191

(1.1) An application referred to in subsection (1) shall include the applicable fee set out in the *AECB Cost Recovery Fees Regulations* and shall set out such of the following matters as the Board may require:]

(*a*) a description of the operating procedures of the nuclear facility;

(*b*) a description of the measures to be taken, including any plan in case of accident, to prevent the receipt by any person of a dose of ionizing radiation [or of an exposure to radon daughters] in excess of any dose [or exposure] specified in respect of such person in Schedule II or to prevent or minimize other hazards involved in the operation of the nuclear facility; Amended SOR/78-58

(*c*) a description of the measures to be taken to prevent theft, loss or any unauthorized use of any prescribed substance involved in the operation of the nuclear facility;

(*d*) a description of the measures to be taken to ensure the physical security of the nuclear facility;

(*e*) a description of the qualifications, training and experience of any person involved in the operation of the nuclear facility;

(*f*) information respecting any arrangements that have been made to compensate any person for injury or damage resulting from the operation of the nuclear facility; and

(*g*) any other information necessary to evaluate the application.

(2) A licence issued by the Board pursuant to subsection (1) may contain such conditions as the Board deems necessary in the interests of health, safety and security and, without limiting the generality of the foregoing, may include conditions respecting

(*a*) the measures to be taken to prevent the receipt by any person of a dose of ionizing radiation [or of an exposure to radon daughters] in excess of any dose [or exposure] specified in respect of such person in Schedule II or to prevent or minimize other hazards involved in the operation of the nuclear facility; Amended SOR/78-58

(*b*) the monitoring devices and other methods for measuring the dose of ionizing radiation [or the exposure to radon daughters] received by any person; Amended SOR/78-58

(*c*) the methods for detecting and recording the presence and amount of ionizing radiation;

(*d*) the maximum quantity and concentration of radioactive or other hazardous material that may be discharged from the nuclear facility;

(*e*) the method of disposing of radioactive or other hazardous material resulting from the operation of the nuclear facility;

(*f*) the measures to be taken to prevent theft, loss or any unauthorized use of any prescribed substance located at the nuclear facility; and

(*g*) the qualifications, training and experience required in respect of any person involved in the operation of the nuclear facility.

(3) The Board may issue one licence in respect of two or more nuclear facilities located in the same vicinity where it considers that only one licence is necessary.

10.(1) Subject to subsection (2), the Board shall not issue a licence referred to in section 9, unless

(*a*) the approval in writing of the Board to construct or acquire the nuclear facility has previously been obtained; and

(*b*) the Board has received evidence satisfactory to it of compliance with the conditions, if any, of such approval.

(2) The Board may issue a licence pursuant to section 9 without the approval referred to in subsection (1) if it considers that no approval is necessary.

[(3) The approval referred to in subsection (1) may be granted by the Board on receipt of the applicable fee set out in the *AECB Cost Recovery Fees Regulations* and on written application setting out] Amended SOR/90-191

(*a*) a description of the site, design and construction of the nuclear facility;

(*b*) an assessment of the hazards that may result from the operation of the nuclear facility and a description of the measures to be taken to prevent or minimize such hazards; and

(*c*) any other information that the Board may require.

(4) The approval described in subsection (1) may be subject to such conditions as the Board deems necessary in the interests of health, safety and security respecting the site, design and construction of the nuclear facility.

PART IV

RECORDS AND INSPECTION

11.(1) Every person to whom a licence has been issued shall

(*a*) where the licence has been issued pursuant to section 7, keep all necessary records in respect of the prescribed substance that is the subject matter of the licence to show

(i) the nature, form and quantity in which the licence under which such substance was obtained,

(ii) the location thereof,

(iii) the names of all persons involved in the use and handling thereof, and

(iv) where such substance has been disposed of, full particulars of such disposal, whether by sale or otherwise, and the licence, if any, under which such disposal was made:

(*b*) where the licence has been issued pursuant to section 9,

(i) keep all records required by paragraph (*a*) in respect of any prescribed substance at the nuclear facility, and

(ii) keep all necessary records to show the maintenance and operation of the nuclear facility; and

(*c*) keep all necessary records to show the dose of ionizing radiation [or the exposure to radon daughters] received by any person as a result of the use of the prescribed substance or the operation of the nuclear facility, as the case may be; Amended SOR/78-58

(*d*) keep all reports of medical examinations that are required pursuant to subsection 17(1); and

(*e*) [keep such other records as the Board or a designated officer may require in the interests of health, safety and security]. Amended SOR/86-252

(2) The Board may require any person to whom a licence has been issued to deposit the records required to be kept under paragraph (1)(c) or a copy thereof with any person or agency specified in writing by the Board.

(3) No person shall destroy or otherwise dispose of any records required to be kept under subsection (1) except in accordance with the written authority of the Board.

Inspectors

12.(1) The Board or a designated officer may appoint as an inspector any person who, in its or his opinion, is qualified to be so appointed

(*a*) to inspect any premises on which a prescribed substance is located or a nuclear facility is being constructed or operated;

(*b*) to inspect records in respect of any prescribed substance or nuclear facility that are required to be kept by these Regulations in order to establish whether the health and safety requirements of these Regulations are or have been complied with;

(*c*) for the purpose of complying with the terms of any international agreement to which Canada is a party; or

(*d*) for any other purpose relating to the enforcement of these Regulations.

(2) An inspector shall be furnished with a certificate of his appointment, setting out

(*a*) the purpose for which he has been appointed and the place or area in respect of which he has been appointed, and

(*b*) the period for which he has been appointed to act as an inspector,

and may at all reasonable times enter any place to which his certificate relates for the purpose of carrying out any inspection specified in the certificate and shall, if so required, produce the certificate to the person in charge thereof.

(3) Where

(*a*) any loss or theft of any prescribed substance,

(*b*) any occurrence described in section 21, or

(*c*) any breach of these Regulations or a condition of any licence

has occurred, an inspector appointed for the purpose described in paragraph (1)(*a*) and for the place or area in which the loss, theft, occurrence or breach has taken place may direct

(*d*) the person holding the appropriate licence to submit a report respecting

(i) the circumstances of the loss or theft of the prescribed substance or of the occurrence or the breach of these Regulations or the condition of the licence, as the case may be, and

(ii) any remedial action to be taken in respect thereof; and

(*e*) such action to be taken as he deems necessary to remedy the breach of these Regulations or the condition of the licence, as the case may be, and to minimize the consequences, if any, of the occurrence.

PART V

SECURITY

13.(1) Except where otherwise authorized or with the approval of the Board, no person shall knowingly disclose to any other person

(*a*) information relating to those properties of fissionable substances that are of special importance in nuclear weapons;

(*b*) with respect to plants for the separation of isotopes of fissionable substances, nuclear reactors primarily intended for large scale production of fissionable substances and nuclear power units primarily intended for military purposes, information relating to

(i) the design and operation thereof,

(ii) specifications for substances and equipment specially designed and adapted for use in connection therewith, and

(iii) specifications for and quantities of fissionable substances produced by such plants, nuclear reactors and nuclear power units; and

(*c*) details for the design, production and operation of nuclear weapons.

(2) Subsection (1) does not apply to the communication of information that has previously been published in scientific or technical journals, official publications or official press releases.

Protected Places

14.(1) The Board may, by order published in the Canada Gazette, designate any place as a protected place

(*a*) for the purpose of keeping secret information respecting the production, use and application of, and research and investigation with respect to, atomic energy; or

(*b*) for the purpose of protecting persons and property, where in the opinion of the Board special precautions are necessary for that purpose.

(2) The order designating a place as a protected place pursuant to subsection (1) shall contain a metes and bounds description of the place designated and such terms and conditions as the Board deems necessary for a purpose described in subsection (1).

(3) No person shall enter or be in any place designated pursuant to subsection (1) except in accordance with the terms and conditions contained in the order referred to in subsection (1).

(4) A police officer, police constable or other person employed for the preservation or maintenance of public order may search any person who is in a place designated pursuant to subsection (1) but a woman shall only be searched by a woman.

(5) If authorized by the Board or by the person in charge of a place designated pursuant to subsection (1), any police officer, police constable or other person employed for the preservation or maintenance of public order may remove any person from such place.

PART VI

HEALTH AND SAFETY

Medical Advisers

15.(1) The Board or a designated officer may with respect to any place or area appoint any of the following persons as medical advisors to act jointly or separately, as the case may be, for the purpose of these Regulations:

(*a*) a senior medical officer nominated by the Radiation Protection Bureau of the Department of National Health and Welfare and a senior medical officer nominated by the department of any province concerned with radiation protection acting jointly;

(*b*) a senior medical officer nominated jointly by the Radiation Protection Bureau of the Department of National Health and Welfare and the department of any province concerned with radiation protection;

(*c*) a senior medical officer nominated by Atomic Energy of Canada Limited; and

(*d*) a senior medical officer nominated by the Surgeon General of the Canadian Armed Forces.

(2) Any person appointed as a medical adviser pursuant to subsection (1) shall be furnished with a certificate of appointment setting out

(*a*) the place or area in respect of which he has been appointed; and

(*b*) the period for which he is appointed as a medical adviser.

(3) A medical adviser may

(*a*) make recommendations to the Board, with respect to the place or area for which he has been appointed, respecting the nature, extent and frequency of medical examinations of atomic radiation workers;

(*b*) make recommendations to the Board respecting the continued employment as an atomic radiation worker of any person who has received a dose of ionizing radiation [or an exposure to radon daughters] in excess of any dose [or exposure] specified in respect of such worker in Schedule II or who is unfit to be employed as an atomic radiation worker for any medical reason; Amended SOR/78-58

(*c*) inspect all records required to be kept pursuant to paragraphs 11(1) (*c*) and (*d*);

(*d*) with respect to any premises in which a prescribed substance is located or with respect to any nuclear facility, review procedures for the treatment of atomic radiation workers in the event of the receipt of a dose of ionizing radiation [or an exposure to radon daughters] in excess of any dose [or exposure] specified in respect of such workers in Schedule II; Amended SOR/78-58

(*e*) carry out such investigations as are reasonable to identify any person who may have received a dose of ionizing radiation [or exposure to radon daughters] in excess of any dose [or exposure] specified in respect of such person in Schedule II; and Amended SOR/78-58

(*f*) upon receipt of a report described in subsection 21(1) recommend such additional medical examinations as he deems necessary.

Radiation Safety Adviser

16.(1) The Board or a designated officer may, with respect to any place or area, appoint any person who in its or his opinion, is qualified so to be appointed or any committee to advise on radiation safety and, without limiting the generality of the foregoing, may appoint

(*a*) an officer nominated by the Radiation Protection Bureau of the Department of National Health and Welfare;

(*b*) an officer of a division of Atomic Energy of Canada Limited concerned with radiation protection and nominated by the company; or

(*c*) an officer nominated by any department or agency of the Government of Canada or of a province that is concerned with radiation protection.

(2) Any person appointed pursuant to subsection (1) shall be furnished with a certificate of appointment setting out

(*a*) the purpose for which he is appointed;

(*b*) the place or area in respect of which he is appointed; and

(*c*) the period for which he is appointed.

(3) Any person or committee appointed pursuant to subsection (1) shall, with respect to the place or area for which such person or committee has been appointed,

(*a*) review at the request of the Board applications for licences under these Regulations;

(*b*) make recommendations to the Board respecting

(i) the granting of licences,

(ii) the conditions to be included in any licence to prevent or limit exposure of any person to ionizing radiation,

(iii) any changes in any list of atomic radiation workers submitted pursuant to paragraph 17(3)(*b*); and

(*c*) review reports submitted pursuant to sections 20 and 21 and make recommendations respecting any changes in the conditions of any licence.

Atomic Radiation Workers

17.(1) Any person who employs atomic radiation workers shall ensure that each such worker

(*a*) is informed at the time that such worker is employed that he is an atomic radiation worker within the meaning of these Regulations;

(*b*) undergoes a medical examination of such nature and extent and with such frequency as may be prescribed in or by the conditions contained in any licence that are applicable to such worker; [and

Amended SOR/85-335

(*c*) if that worker is a woman, is informed of the obligation imposed upon her by subsection 19(4).]

(2) No person shall employ as an atomic radiation worker any person

(*a*) who is under eighteen years of age;

(*b*) whose health or radiation exposure record is such that, in the opinion of the Board or a designated officer and on the recommendation of the medical adviser, he should not be employed as an atomic radiation worker; or

(*c*) whose qualifications, training and experience do not comply with the conditions contained in any licence that are applicable to him.

(3) Any person who employs atomic radiation workers shall

(*a*) specify in writing as atomic radiation workers those persons in his employ that he considers to be atomic radiation workers, and maintain a list of all such workers; and

(*b*) [if requested by the Board or a designated officer, submit a copy of the list referred to in paragraph (*a*) and all amendments thereto to the Board and the radiation safety adviser appointed under section 16 in respect of the place where such workers are employed].

Amended SOR/86-252

(4) [Revoked SOR/85-1039 - 31 October, 1985]

(5) [Revoked SOR/85-1039 - 31 October, 1985]

Industrial Radiography

18. In this section and section 18.1 to 18.23,

Amended SOR/83-450

"approved examination" [means an examination on radiation safety in industrial radiography approved by the Board or a designated officer; (*examen approuvé*)

Amended SOR/86-252

"exposure device" means a device containing a prescribed substance for the purpose of carrying out radiography; (*dispositif d'exposition*)

"licensee" means a person to whom a licence is issued for the use or possession of an exposure device; (*détenteur de permis*)

"operate", [in respect of an exposure device, includes locking or unlocking the exposure device, coupling a source assembly to a drive cable, moving a source capsule and removing from and inserting into the exposure device any prescribed substance]; (*utiliser*) — Amended SOR/86-252

["qualified operator" means a person who has paid the qualified operator examination registration fee set out in the *AECB Cost Recovery Fees Regulations*, and successfully completed an approved examination; (*opérateur qualifié*)] — Amended SOR/90-191

"source capsule" means any component of an exposure device that exclusively encases a prescribed substance and that is designed to prevent leakage or escape of the prescribed substance and includes the prescribed substance; (*source*)

"trainee" means a person permitted by a licensee pursuant to section 18.1 to operate an exposure device under the supervision of a trainee supervisor; (*stagiaire*)

"trainee supervisor" [means a qualified operator appointed by a licensee pursuant to section 18.11 to supervise a trainee in the operation of an exposure device. (*surveillant*)] — Amended SOR/86-252

18.1 (1) Subject to subsections (2) to (4), no licensee shall permit any other person to use or possess an exposure device whose use or possession is the subject of his licence except as authorized under his licence.

(2) A licensee may permit a qualified operator to operate an exposure device if

(*a*) the licensee is able at all times to exercise control or supervision over the operation by the qualified operator of the exposure device; and

(*b*) the qualified operator

(i) is knowledgeable in the safe operation of the exposure device including the use of safety equipment normally associated with the exposure device, the principles of radiation protection and the procedures to be followed in the event of an accident involving the exposure device,

(ii) is familiar with these Regulations and the terms and conditions of the licensee's licence, and

(iii) is not prohibited by these Regulations from operating the exposure device.

(3) A licensee may, for the purpose of training a person to become a qualified operator, permit that person to operate an exposure device under the supervision of a trainee supervisor.

(4) A licensee may permit a person to possess an exposure device for the purpose of transporting the exposure device to any place.

(5) Any person who is permitted by a licensee pursuant to subsection (2), (3) or (4) to operate or possess an exposure device is exempt from the licensing requirements of section 4.

18.11 (1) A licensee may appoint a qualified operator to supervise a trainee in the operation of an exposure device if

(*a*) the qualified operator is, in the opinion of the licensee, qualified by reason of his knowledge, training and experience to supervise another person in the safe operation of the exposure device; and

(*b*) the licensee requests the qualified operator to supervise the trainee in the operation of the exposure device and the qualified operator gives his written consent to act accordingly.

(2) A request made by a licensee under paragraph (1)(*b*) shall be in writing and shall

(*a*) state the name of the trainee;

(*b*) state the make and model of the exposure device;

(*c*) direct the attention of the qualified operator to this section and section 18.16; and

(*d*) include a copy of the licence issued in respect of the exposure device.

18.12 (1) Every licensee shall, in respect of an exposure device whose use or possession is the subject of his licence,

(*a*) keep a copy of his licence conspicuously posted at his place of business;

(*b*) keep a copy of his licence available for inspection at the premises or site at which the exposure device is present;

(*c*) [attach securely to the exposure device by means of metal fasteners a durable steel or brass tag inscribed with the name of the prescribed substance contained in the exposure device, the activity of the prescribed substance and the date of measurement of that activity;] Amended SOR/86-252

(*d*) affix securely to the exposure device a durable and readily visible and legible sign that sets out his name, address and telephone number;

(*e*) [affix securely to any room, enclosure or vehicle in which the exposure device is stored a durable, readily visible and legible sign that sets out his name, address and telephone number and that he should be contacted in the event of any emergency involving the exposure device; and] Amended SOR/86-252

(*f*) [prepare, to the satisfaction of the Board or a designated officer, written instructions respecting the normal and safe operation of the exposure device and respecting the steps to be followed if] Amended SOR/86-252

(i) an operator of the exposure device is unable, through reasonable and normal effort on his part, to cause the source capsule to return to its proper shielded position,

(ii) the source capsule is separated from the exposure device outside the normal course of operation,

(iii) the source capsule or exposure device is lost, is stolen or is damaged to an extent that could impair its normal use, or

(iv) an occurrence described in section 21 comes to the attention of an operator of the exposure device.

(2) Every licensee shall, on permitting any person to operate an exposure device whose use or possession is the subject of his license,

(*a*) provide that person with a copy of the written instructions prepared in respect of the exposure device pursuant to paragraph (1)(*f*);

(*b*) ascertain that that person is familiar with and understands the written instructions referred to in paragraph (*a*);

(*c*) [provide that person, through any arrangement that is satisfactory to that person, with — Amended SOR/86-252

(i) all survey meters, dosimeters, tools, equipment or materials that he is required, under these Regulations, to possess before he operates the exposure device, and

(ii) a sufficient number of forms to record all information that he is required to record pursuant to paragraph 18.17(1)(*c*);and

(*d*) provide that person with all dosimeters that he is required, under these Regulations, to possess before he operates the exposure device.]

(3) Every licensee shall, in respect of an exposure device whose use or possession is the subject of his license, on receipt of a written request from the Board or a designated officer, notify the Board or designated officer of the time and location at which the exposure device is to be operated.

18.13 (1) Every licensee shall, in respect of an exposure device whose use or possession is the subject of his licence,

(*a*) keep the exposure device locked and securely stored when it is not in use;

(*b*) maintain the exposure device in good operating condition by regular and adequate inspection and maintenance including regular and adequate inspection and maintenance of any source assembly, source guide tube, locking mechanism, drive cable mechanism or pump that forms part of the exposure device;

(*c*) test the exposure device for leakage of the prescribed substance contained therein every six months and subsequent to any incident that may have damaged the source capsule and remove the exposure device from use if the leakage is determined to have exceeded 200 becquerels;

(*d*) measure the radiation at all parts of the surface of the exposure device following the insertion of a prescribed substance into the exposure device and remove the exposure device from use if the measurement exceeds two millisieverts per hour; and

(*e*) determine on a regular and adequate basis the radiation dosage recorded on all thermoluminescent and film dosimeters worn by persons who operate the exposure device.

(2) [Revoked SOR/86-252 - 27 February, 1986]

(3) [No licensee shall

Amended SOR/86-252

(*a*) use any source capsule assembly or drive cable assembly in or with an exposure device unless it is approved by the Board or a designated officer and designed for that purpose; or

(*b*) modify any source capsule assembly, shielding or lock in an exposure device except as approved by the Board or a designated officer.]

18.14 (1) Every licensee shall, in respect of an exposure device whose use or possession is the subject of his licence, limit the dose of ionizing radiation received as a result of such use or possession by any person, other than an atomic radiation worker or an employee of the licensee or of a person with whom the licensee has a contract for the services of the licensee, to 0.1 millisieverts in one week and 0.5 millisieverts in one year.

(2) The measures taken for the purpose of complying with subsection (1) shall include

(*a*) the placing of a sufficient number of signs described in subsection 22(4) at the perimeter of the area within which

(i) the exposure device is located, and

(ii) the dose rate from the exposure device, as measured when the source is in the exposure position, is greater than 0.1 millisieverts per hour,

to provide adequate warning to any person who may enter the area that radiography is carried out within the area; and

(*b*) where it is not possible for a qualified operator, trainee or trainee supervisor, when operating or supervising the operation of the exposure device, to keep watch for any person who may enter the area referred to in paragraph (*a*), the erecting of a sufficient number of barricades at the perimeter of the area or the posting of a sufficient number of security personnel near the perimeter of the area to prevent any person who is not an atomic radiation worker from entering the area.

(3) [Where an exposure device is operated by a qualified operator or trainee on the premises of the licensee or of a person with whom the licensee has a contract for the services of the licensee and the licensee is unable to demonstrate to the satisfaction of the Board or a designated officer that the measures taken pursuant to subsection (2) are sufficient to limit the dose of ionizing radiation in accordance with subsection (1), the dose rate from the exposure device shall not exceed 2.5 microsieverts per hour measured at the perimeter of the area within which the movement of persons can be controlled by the qualified operator or by the trainee and the trainee supervisor.]

Amended SOR/86-252

18.15 (1) No person shall operate an exposure device unless

(*a*) he is a qualified operator or is, while operating the exposure device, under the continuous visual observation and supervision of a trainee supervisor;

(*b*) [he has

Amended SOR/86-252

(i) in his possession or readily available to him a copy of the written instructions prepared in respect of the exposure device pursuant to paragraph 18.12(1)(*f*), and

(ii) in his possession a properly functioning gamma radiation survey meter that

(A) is suitable for measuring gamma radiation emitted by the source capsule in the range from 20 microsieverts to 100 millisieverts per hour with a margin of error of no more than 20 per cent of the true dose rate,]

(B) incorporates facilities for testing the batteries that provide its power, and

(C) has been adequately calibrated within the 12 month period preceding the operation of the exposure device;

(*c*) [where the exposure device is operated with a source guide tube, he has in his possession or immediately available to him the following, namely,] Amended SOR/86-252

(i) material of a composition and construction sufficient to attenuate by a factor of at least 100 all gamma radiation emitted by the source capsule when the material is directly positioned over the exposed source capsule,

(ii) tools suitable for severing the source guide tube and drive cable from the remainder of the exposure device, and

(iii) tongs with a handle at least 1.5 m long suitable for safely handling the source capsule if it is separated from the exposure device outside the normal course of operation;

(*d*) he carries or wears a thermoluminescent or film dosimeter

(i) of a type and at a location suitable for recording any radiation dosage to his body, and

(ii) supplied by a dosimetry service approved by the Board;

(*e*) he wears a direct reading dosimeter of a type and worn in a manner suitable for indicating a radiation dosage to his body up to two millisieverts;

(*f*) he wears, if he is a trainee, an alarming dosimeter

(i) of a type and worn in a manner suitable for indicating a radiation dosage to his body up to two millisieverts, and

(ii) that emits an audible warning signal at a pre-set integrated dose less than two millisieverts or emits an audible warning signal whose frequency or intensity increases in proportion to an increase in the dose rate;

(*g*) he examines, immediately prior to operating the exposure device, the locking mechanism of the exposure device and, if present as a component part of the exposure device, the cranking device, drive cable, pneumatic pump, shutter mechanism, source coupling and source guide tube and determines that they each function properly; and

(*h*) he determines, immediately prior to operating the exposure device, that there is a sufficient number of suitably marked signs or barricades placed in the area where the exposure device is located or a sufficient number of security personnel posted in that area to prevent the inadvertent entry of any person who is not an atomic radiation worker into

an area in which the radiation exposure dosages may exceed the dosages referred to in subsection 18.14(1) to (3).

(2) No person shall operate an exposure device if his capacity to operate the exposure device is impaired by drug or alcohol.

18.16(1) No trainee supervisor shall permit a trainee to operate an exposure device unless he is satisfied that

(*a*) the trainee is knowledgeable in the operation of the exposure device to an extent that he is able to safely operate the exposure device;

(*b*) the trainee is not prohibited by section 18.15 from operating the exposure device; and

(*c*) no danger to the health or safety of any person will result from the operation by the trainee of the exposure device.

(2) Where a trainee supervisor permits a trainee to operate an exposure device, the trainee supervisor shall maintain a continuous visual observation and supervision of the trainee during the operation of the exposure device and if, during that operation, the trainee breaches any provision of these Regulations, the trainee supervisor shall immediately remove the exposure device from the possession of the trainee or shall prevent the trainee from further operating the exposure device.

(3) A trainee supervisor shall report forthwith to the licensee

(*a*) any occurrence described in paragraph 18.12(1)(*f*), subsection 18.18(1) or section 18.19 that involves a trainee under his supervision; and

(*b*) any breach of these Regulations by a trainee under his supervision.

(4) no person other than a trainee supervisor shall supervise a trainee in the operation of an exposure device.

18.17 (1) Every person who operates an exposure device shall

(*a*) determine, by using a survey meter, that the source capsule has returned to the proper shielded position in the exposure device after each operation of the exposure device;

(*b*) take every reasonable precaution to ensure that the dose of ionizing radiation received as a result of such operation by any person, other than an atomic radiation worker or an employee of the licensee or of a person with whom the licensee has a contract for the service of the licensee, is limited to 0.1 millisieverts in one week and 0.5 millisieverts in one year;

[(*c*) after each operation of the exposure device or at the end of each day of operation, record the maximum reading of radiation dosage indicated on the direct reading dosimeter worn by him during the operation of the exposure device or on the day of operation; Amended SOR/86-252

(*d*) lock and securely store the exposure device at the end of each day of operation of the exposure device;

(*e*) lock the exposure device whenever the exposure device is not under his care and control; and

(*f*) secure the source capsule in the proper shielded position before moving the exposure device.]

(2) Every person who is permitted by a licensee to possess an exposure device for the purpose of transporting it to any place shall keep it securely stored during its transportation to that place.

18.18 (1) Any person who, in the course of operating an exposure device, observes on a direct reading dosimeter a radiation dosage measurement greater than two millisieverts shall immediately cease operating the exposure device and shall not operate any other exposure device unit it has been ascertained that he has not received any dose of ionizing radiation in excess of any dose rate specified in respect of him in Schedule II.

(2) No person shall operate an exposure device whose operation was ceased pursuant to subsection (1) unless it has been ascertained that the radiation dosage measured to be greater than two millisieverts was not caused by a defect or malfunction of the exposure device or, if the dosage was caused by a defect or malfunction of the exposure device, the defect or malfunction has been corrected.

18.19 No person shall operate an exposure device that does not function in an ordinary manner or whose radiation dose rate at any part of its surface is determined to exceed two millisieverts per hour.

18.20 (1) *No person who is permitted by a licensee pursuant to section 18.1 to operate or* possess an exposure device shall remove any prescribed substance from or insert any prescribed substance into the exposure device unless he

(*a*) is requested in writing by the licensee to do so and gives his written consent; and

(*b*) [Revoked SOR/86-252 - 27 February, 1986]

(2) [Every person who removes any prescribed substance from or inserts any prescribed substance into an exposure device shall measure the radiation levels and radiation exposure dosages during the course of and forthwith after the completion of the removal or insertion and submit the measurements to the licensee]. Amended SOR/86-252

18.21 No person who is permitted by a licensee pursuant to section 18.1 to operate or possess an exposure device shall modify the source capsule assembly, shielding or lock in the exposure device.

18.22 (1) Every person who is permitted by a licensee pursuant to section 18.1 to operate or possess an exposure device shall

(*a*) [subject to subsection (3), submit to the licensee at the end of each semi-monthly period all thermoluminescent and film dosimeters worn by him during the period]; Amended SOR/86-252

(*b*) submit to the licensee at the end of each semi-monthly period all records made by him pursuant to paragraph 18.17(1)(*c*) during the period; and

(*c*) report forthwith to the licensee any occurrence described in paragraph 18.12(1)(*f*), subsection 18.18(1) or section 18.19 involving his operation or possession of the exposure device.

(2) In addition to the reporting requirements set out in section 20 and 21, every licensee

shall, in respect of an exposure device who use or possession is the subject of his licence, report forthwith to an inspector

(*a*) any malfunctioning o f the exposure device that could result in an increase in the level of radiation measurable at any part of the surface of the exposure device;

(*b*) any occurrence described in paragraph 18.12(1)(*f*) involving the exposure device; and

(*c*) any removal from use of the exposure device pursuant to paragraph 18.13(1)(*c*) and (*d*).

[(3) The Board or a designated officer may approve a monthly period for the submission referred to in paragraph (1)(*a*) where — Amended SOR/86-252

(*a*) the person permitted by the licensee to operate or possess the exposure device does so only in a room designed for the operation of an exposure device; and

(*b*) the licensee is and has been in compliance with subsection 19(1).]

18.23 (1) Every licensee shall, in respect of an exposure device whose use or possession is the subject of his licence, keep the following records:

(*a*) a record of the name of the manufacturer, the model number, the serial number, the activity of the prescribed substance, the dates and places of use and the date of procurement and disposal of the exposure device and each source capsule;

(*b*) a record of the names of all persons whom he has permitted to operate or possess the exposure device and the dates of such operation or possession;

(*c*) a record of all requests made by him pursuant to subsection 18.11(1) and 18.20(1) and all written consents thereto;

(*d*) a record of every test, measurement, inspection, maintenance or calibration taken or carried out in respect of the exposure device pursuant to these Regulations;

(*e*) a record for each operator of the exposure device of any measurements submitted to him by the operator pursuant to these Regulations;

(*f*) [a record for each operator of the exposure device of the radiation dosages received by the operator as determined from thermoluminescent or film dosimeters and from direct reading dosimeters required to be carried or worn by the operator pursuant to these Regulations]. — Amended SOR/86-252

(2) Every licensee required by subsection (1) to keep records shall

(*a*) retain those records until the expiration of three years from the end of the calendar year in which they are made; and

(*b*) [provide a copy of those records to the Board on the written request of the Board or a designated officer]. — Amended SOR/86-252

(3) Where a licensee intends to dispose of any records referred to in subsection (1) after the expiration of the period in respect of which those records are required to be kept, the licensee shall

(*a*) give the Board reasonable notice of his intention to dispose of those records; and

(*b*) [deposit those records or a copy thereof with the Board on the written request of the Board or a designated officer]. Amended SOR/86-252

Permissible Doses

19. (1) Every person in possession of a radioactive prescribed substance or operating a nuclear facility shall limit the dose of ionizing radiation [or exposure to radon daughters] received by any person as a result of such possession or operation to any dose [or exposure] specified in Schedule II or the lower dose [or exposure] prescribed pursuant to subsection (2) in respect of that person. Amended SOR/78-58

(2) Where, on the recommendation of a medical adviser, it appears necessary in the interests of health and safety to do so, the Board or a designated officer may, with respect to any atomic radiation worker, prescribe a lower permissible dose of ionizing radiation [or a lower permissable exposure to radon daughters] than that specified in Schedule II for that worker and shall forthwith give notice thereof by registered mail to the person in possession of the radioactive prescribed substance or operating the nuclear facility who employs that worker. Amended SOR/78-58

(3) Where an atomic radiation worker has received a dose of ionizing radiation [or an exposure to radon daughters] in excess of any dose specified in Schedule II or prescribed pursuant to subsection (2) in respect of that worker, he shall not engage in further work that is likely to add significantly to the amount of ionizing radiation [or to the amount of exposure to radon daughters] that he has received until the Board [or a designated officer] approves thereof. Amended SOR/78-58 Amended SOR/85-1039

[(4) Every woman shall Amended SOR/85-335

(*a*) if she becomes pregnant while she is engaged by an employer as an atomic radiation worker, inform the employer of her pregnancy as soon as she becomes aware of it; or

(*b*) if she is aware that she is pregnant when an employer engages her as an atomic radiation worker, forthwith inform the employer of her pregnancy.

(5) An employer who is informed pursuant to subsection (4) of the pregnancy of any atomic radiation worker shall forthwith inform any licensee in respect of whose business the employee is working of the pregnancy.]

Loss or Theft of Prescribed Substances

20. (1) Every person in possession of a prescribed substance or operating a nuclear facility in which a prescribed substance is located shall, in the event of any loss or theft of such prescribed substance in a quantity exceeding ten times the scheduled quantity, make a report of such loss or theft within 24 hours to the inspector appointed for the place or area in which the loss or theft occurred and shall as soon as possible thereafter send a complete report of such loss or theft to the Board, such inspector and the person, if any, appointed pursuant to section 16 as radiation safety adviser for the place or area in which the loss or theft occurred.

(2) For the purpose of subsection (1), loss does not include any loss necessarily incidental to any authorized use of the prescribed substance.

Reporting Occurrence

21. (1) Every person

(*a*) in charge of a nuclear facility,

(*b*) in charge of a device or of equipment containing radioactive prescribed substances, or

(*c*) in possession of a radioactive prescribed substance shall, in the event of an occurrence that results or is likely to result in the receipt by any person of a dose of ionizing radiation [or of an exposure to radon daughters] in excess of any dose [or exposure] specified in respect of such person in Schedule II, Amended SOR/78-58

(*d*) report such occurrence within 24 hours to the inspector appointed for the place or area in which the occurrence has taken place;

(*e*) as soon as possible after the occurrence, send a complete report of such occurrence to the Board, to the inspector referred to in paragraph (*d*) and to the person or committee appointed pursuant to section 16 to advise on radiation safety in respect of the place or area in which the occurrence has taken place; and

(*f*) if the occurrence has resulted in the receipt by any person of a dose of ionizing radiation [or of an exposure to radon daughters] in excess of any dose [or exposure] specified in Schedule II, send a copy of the report referred to in paragraph (*e*) to the medical adviser appointed for the place or area in which the occurrence has taken place. Amended SOR/78-58

(2) In the event of any occurrence described in subsection (1), the person in charge of a nuclear facility or the equipment containing the prescribed substance or the person in possession of the prescribed substance, as the case may be, shall

(*a*) immediately take all appropriate measures to prevent or minimize exposure of any person to ionizing radiation [or radon daughters] resulting from such occurrence; and Amended SOR/78-58

(*b*) comply with any instructions that may be given by the inspector appointed for the place or area in which the occurrence has taken place.

Signs

22. (1) No person shall use a container to store or otherwise hold radioactive prescribed substances, except where such container forms part of the machinery attached to the manufacturing or processing equipment of a nuclear facility, unless there appears on such container

(*a*) the radiation warning symbol set out in Schedule III and the words "RADIATION-DANGER-RAYONNEMENT", clearly and prominently displayed on the outside thereof; and

(*b*) information with respect to the nature, form, quantity and date of measurement of the radioactive isotopes in the container.

(2) Subsection (1) does not apply to any container

(*a*) in which a quantity of radioactive isotopes less than the scheduled quantity is present;

(*b*) used temporarily to store radioactive isotopes under the supervision and in the presence of an atomic radiation worker; or

[(*c*) used exclusively for transporting substances containing radioactive isotopes and labelled in accordance with the requirements set out in the *Transport Packaging of Radioactive Materials Regulations*]. Amended SOR/90-171

(3) Where the container described in subsection (1) ceases to be used to store or otherwise hold radioactive isotopes, the person in charge of the container shall remove therefrom the radiation warning symbol set out in Schedule III and the words set out in paragraph (1)(*a*).

(4) Every person in charge of an area, room or enclosure in which

(*a*) radioactive isotopes are present in a quantity in excess of 100 times the scheduled quantity, or

(*b*) a person could receive a dose of ionizing radiation at a rate exceeding 0.0025 rem per hour,

shall mark such area, room or enclosure with a durable sign bearing

(*c*) the radiation warning symbol set out in Schedule III,

(*d*) the words "RADIATION-DANGER-RAYONNEMENT", and

(*e*) information with respect to the nature and extent of the radiation hazard.

(5) Any person in charge of an area, room or enclosure described in subsection (4) shall remove the sign described in that subsection if

(*a*) radioactive isotopes in excess of the quantity referred to in paragraph (4)(*a*) are no longer present in such area, room or enclosure; or

(*b*) such area, room or enclosure ceases to be a place where a person could receive a dose of ionizing radiation at a rate in excess of that set out in paragraph (4)(*b*).

[Revoked SOR/90-171 - 15 March, 1990]

23. [Revoked SOR/90-171 - 15 March, 1990]

PART VI

GENERAL

Precautions

24. (1) Every person operating a nuclear facility or carrying on a business or undertaking involving the use of a prescribed substance shall, in addition to any other requirements of these Regulations,

(*a*) take all reasonable precautions in relation to the nuclear facility or the prescribed substance to protect persons and property from injury or damage;

(*b*) at all appropriate times provide necessary devices for detecting and measuring ionizing radiation [and radon daughters] at the nuclear facility or at the place of such business or undertaking; Amended SOR/78-58

(*c*) at all appropriate times provide such devices, articles of clothing and equipment as are necessary for the protection of any person at the nuclear facility or at the place of such business or undertaking;

(*d*) take all reasonable precautions to prevent an escape of radioactive material from the premises; and

(*e*) in the event of an escape of radioactive material from the premises, provide adequate warning to any person who may reasonably be affected by such escape.

(2) Every person employed in or in connection with a nuclear facility or a business or undertaking involving the use of a prescribed substance shall, in the course of his employment,

(*a*) take all reasonable and necessary precautions to ensure his own safety and the safety of his fellow employees; and

(*b*) at all appropriate times, use such devices, wear such articles of clothing and make use of such equipment as are intended for his protection and furnished to him by his employer or required pursuant to the conditions in any licence that is applicable to him.

Abandonment or Disposal of Prescribed Substances

[25. (1) No person shall abandon or dispose of any prescribed substance except in accordance with Amended SOR/90-191

(*a*) the conditions in any licence that is applicable to the prescribed substance and that is in force; or

(*b*) the written instructions of the Board or a designated officer.

(2) Subject to subsection (4) the Board or a designated officer may issue the instructions referred to in paragraph (1)(*b*) on approval by the Board or designated officer of an application to abandon or dispose of a prescribed substance.

(3) An application referred to in subsection (2) shall include the applicable fee set out in the *AECB Cost Recovery Fees Regulations* and set out full particulars of the proposed abandonment or disposal.

(4) In approving the application referred to in subsection (2) the Board or a designated officer shall evaluate the impact of the proposed abandonment or disposal with respect to health, safety and security.]

Disclosure of Information by the Board

26. [Revoked SOR/85-1039 - 31 October, 1985]

Revocation, Suspension or Amendment

27. [(1) Subject to subsections (2) and (3), the Board or a designated officer may, by notice in writing to the holder of any licence, revoke or suspend the licence or amend the terms and conditions thereof. Amended SOR/90-191

(1.1) The holder of a licence may, in writing and on payment of the applicable fee set out in the *AECB Cost Recovery Fees Regulations*, request the Board or designated officer to revoke or suspend the licence or amend the terms and conditions thereof.]

(2) A notice under subsection (1) is not required if the revocation, suspension or amendment of the terms and conditions is at the request of the holder of the licence.

(3) The Board or a designated officer shall not issue a notice pursuant to subsection (1) unless the holder of the licence

(*a*) has been informed in writing of the reasons for the proposed issue of the notice and, in the case of an amendment of the terms and conditions thereof, the proposed amendments; and

(*b*) has been given reasonable opportunity to be heard by the Board after receiving the information referred to in paragraph (*a*).

(4) Notwithstanding subsection (3), the Board or a designated officer may, by notice in writing stating the reasons therefor, suspend a licence without giving the holder thereof an opportunity to be heard, where it is considered necessary to do so in the interests of health, safety or security.

(5) Where a licence has been suspended under subsection (4), the holder of the licence may within 10 days of the date of receipt of the notice of suspension submit a request in writing to the Board to hold an inquiry into the reasons for such suspension.

(6) On receipt of a written request referred to in subsection (5), the Board shall

(*a*) hold an inquiry within thirty days of the receipt of such request; and

(*b*) provide the holder of the licence at least seven days notice in writing of the time and place of the inquiry.

(7) At the conclusion of an inquiry under subsection (5), the Board may

(*a*) revoke the licence;

(*b*) revoke the suspension thereof; or

(*c*) extend the suspension thereof until the conditions prescribed by the Board have been complied with.

(8) Where a licence is suspended under subsection (4) and a request has been made to hold an inquiry under subsection (5), the licensee may at any time prior to the date for the holding of the inquiry waive the requirement for the holding of the inquiry.

[*Default in Payment of Fees*
Amended SOR/90-191

27.1 Where a fee set out in the *AECB Cost Recovery Fees Regulations* in respect of a

licence, approval, acceptance, registration, certificate or endorsement is not paid within 30 days after the payment date is set out for that fee in those Regulations, the Board or a designated officer may, by notice in writing to the person affected, revoke, suspend or amend that licence, approval, acceptance, registration, certificate or endorsement.

Protection of Persons and Property]

28. Where

(*a*) a breach of any of the terms and conditions of a licence has occurred,

(*b*) the holder of a licence intends to surrender his licence, or

(*c*) a licence has been revoked or suspended pursuant to subsection 27(1) or suspended pursuant to subsection 27(4),

the Board or a designated officer may, in writing, require the holder of the licence to take such measures as are considered necessary for the protection of persons and property until such time as the breach has been rectified or the activities being carried out under the authority of the licence have been properly terminated.

[*Service*
Amended SOR/90-191]

29. Any notice, document or other writing required by these Regulations to be given to any person shall be deemed to have been given where the notice, document or other writing has been sent by registered mail to the latest known address of such person.

Transitional

30. Any licences that are issued under the *Atomic Energy Control Regulations* approved by Order in Council P.C. 1960-348 of March 17, 1960, as amended, and that are in force at the date these Regulations come into effect shall be deemed to have been issued by the Board under these Regulations and shall remain in force for the term of the licence subject to these Regulations.

SCHEDULE I

PART I

"microcurie" means that quantity of a radioactive isotope that is disintegrating at the rate of 37,000 disintegrations per second.

Scheduled Quantities of Radioactive Prescribed Substances

Single Isotopes	Microcuries
Actinium 227	0.1
Antimony 124	10
Arsenic 74	10
Barium 140	10
Beryllium 7	100
Bismuth 207	10
Bismuth 210	1
Bromine 82	10
Cadmium 109	10
Calcium 45	10
Calcium 47	10
Carbon 14	100
Cerium 144	1
Cesium 134	10
Cesium 137	10
Chlorine 36	10
Chromium 51	100
Cobalt 58	10
Cobalt 57	10
Cobalt 60	10
Copper 64	100
Copper 67	100
Gold 198	10
Hydrogen 3	1000
Iodine 123	100
Iodine 125	1
Iodine 131	1
Iodine 132	10
Indium 113	100
Indium 114	10
Iridium 192	10
Iron 55	100
Iron 59	10
Krypton 85	100
Lanthanum 140	10
Lead 210	0.1
Manganese 54	10
Manganese 56	10
Mercury 197	100
Mercury 203	10
Molybdenum 99	10
Nickel 63	10
Phosphorus 32	10

Polonium 210	0.1
Potassium 42	10
Promethium 147	10
Radium 226	0.1
Rubidium 86	10
Scandium 46	10
Selenium 75	10
Silver 110	10
Sodium 22	10
Sodium 24	10
Strontium 85	10
Strontium 89	10
Strontium 90	0.1
Sulphur 35	10
Technetium 99	10
Technetium 99^m	100
Tin 133	10
Thallium 204	10
Xenon 133	100
Xenon 135	100
Yttrium 87	10
Yttrium 90	10
Zinc 65	10

Except as otherwise specified by the Board:

Isotopes of elements of atomic number greater than 89 0.1

Other isotopes not referred to above 1

PART II

Two or more isotopes

The scheduled quantity shall be determined by the equation

$$\frac{A_1}{M_1} \text{ plus } \frac{A_2}{M_2} \text{ plus } \frac{A_3}{M_3} \text{ plus } \ldots \text{ equals } 1$$

where A_1, A_2, A_3 etc. are the quantities of the isotopes involved and M_1, M_2, M_3 etc. are the scheduled quantities of such isotopes.

SCHEDULE II

Maximum Permissible Doses and Exposures (1, 2)

Table 1

Maximum Permissible Doses (3)

[Amended SOR/85-335]

Column I	Column II		Column III
Organ or Tissue	Atomic Radiation Workers Rems per quarter of year	Rems per year	Any Other Person Rems per year
Whole body, gonads, bone marrow	3(4)	5(4)	0.5
Bone, skin, thyroid	15	30	3(5)
Any tissue of hands, forearms, feet and ankles	38	75	7.5
Lungs (6) and other single organs or tissues	8	15	1.5

TABLE 2 [Amended SOR/78-58]

Maximum Permissible Exposures to Radon Daughters (6)

Column I		Column II
Atomic Radiation Workers		Any Other Person
WLM per quarter of a year	WLM per year	WLM per year (7)
2	4	0.4

NOTES TO SCHEDULE II

(1) The maximum permissible doses and exposures specified in this Table do not apply to ionizing radiation

(*a*) received by a patient in the course of medical diagnosis or treatment by a qualified medical practitioner; or

(*b*) received by a person carrying out emergency procedures undertaken to avert danger to human life.

(2) The Board may, under extraordinary circumstances, permit single or accumulated doses or exposures up to twice the annual maximum permissible doses or exposures for atomic radiation workers. Such variance will not be granted

(*a*) if appropriate alternatives are available;

(*b*) for irradiation of the whole body or abdomen of women of reproductive capacity; or

(*c*) for irradiation of the whole body, gonads or bone marrow, if the average dose received from age 18 years up to and including the current year exceeds 5 rems per year.

(3) In determining the dose, the contribution from sources of ionizing radiation both inside and outside the body shall be included.

(4) [The dose to the abdomen of a pregnant atomic radiation worker after the licensee is informed of the pregnancy of that worker shall not exceed a total of 1 rem, accumulated at a rate of not more than 0.06 rem per two weeks.] Amended SOR/85-335

(5) The dose to the thyroid of a person under the age of 16 years shall not exceed 1.5 rems per year.

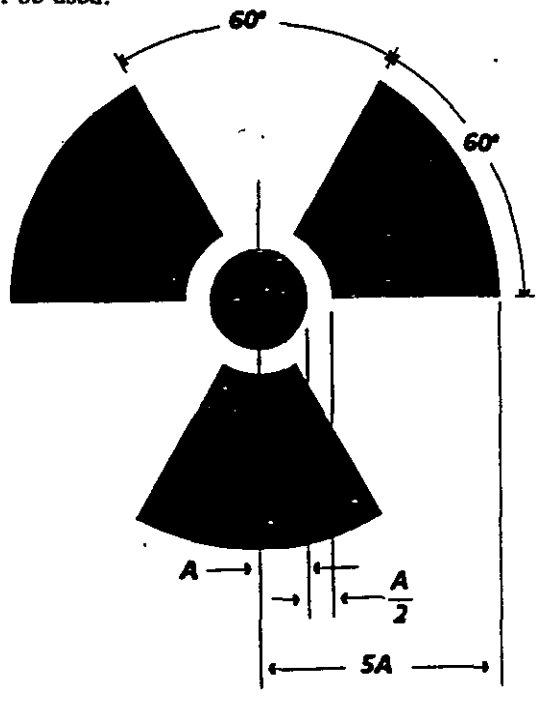
(6) For exposures to radon daughters, the maximum permissible exposures (in working level months) apply instead of the maximum permissible doses for the lungs (in rems).

(7) The WLM unit is not appropriate for exposures in the home or in other non-occupational situation. In such situations, the maximum permissible annual average concentration of radon daughters attributable to the operation of a nuclear facility shall be 0.02 WL.

SCHEDULE III

Radiation Warning Symbol

1. For the purpose of section 22 of the *Atomic Energy Control Regulations*, the following radiation warning symbol shall be used:



A = Radius of Central Disc.

NOTE: Construction lines do not appear in actual symbol.

2. The symbol shall be as prominent as is practical, and of a size consistent with the size of the equipment or material to which it is affixed or attached, and shall be of such size as to permit the symbol to be read from a safe distance, but the proportions set out in section 1 are to be maintained.

3. Unless the circumstances do not permit, the symbol shall be oriented with one blade pointed downward and centred on the vertical axis.

4. Appropriate wording used in association with the radiation symbol to indicate the nature of the source of radiation, type of radiation, limits of occupancy and similar precautionary information, shall not be superimposed on the symbol.

5. The three blades and the centre disc of the symbol shall be

(*a*) coloured reddish purple (magenta) or black, and

(*b*) located on a yellow background,

and the colours shall be similar to those shown in Canadian Standards Association "Specification for a Radiation Symbol, Z69-1960."