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Australian Radiation Protection and Nuclear Safety Regulations 1999

Statutory Rules 1999 No. 37

I, WILLIAM PATRICK DEANE, Governor-General of the Commonwealth of Australia, acting with the advice of the Federal Executive Council, make the following regulations under the *Australian Radiation Protection and Nuclear Safety Act 1998*.

Dated 17 MAR 1999 1999.

WILLIAM DEANE
Governor-General

By His Excellency's Command,

MICHAEL WOOLDRIDGE
Minister for Health and Aged Care

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Australian Radiation Protection and Nuclear Safety Regulations 1999

Statutory Rules 1999 No. 1

37

made under the

Australian Radiation Protection and Nuclear Safety Act 1998

Contents

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Part 1 Preliminary

1 Name of regulations

These regulations are the *Australian Radiation Protection and Nuclear Safety Regulations 1999*.

2 Commencement

These regulations commence on gazettal.

3 Definitions — the dictionary

(1) The dictionary at the end of these regulations defines certain words and expressions, and includes signpost definitions to words and expressions used in these regulations.

Example

The signpost definition:

'***dose*** see Annex A of the *Recommendations for limiting exposure to ionizing radiation*.'
indicates that the expression is defined in Annex A of the *Recommendations for limiting exposure to ionizing radiation* and applies to these regulations.

(2) The dictionary also includes certain words and expressions used in these regulations that are defined in the Act.

(3) The dictionary is part of these regulations.

(4) A definition in these regulations applies to each use of the word or expression in these regulations unless the contrary intention appears.

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Part 2 Controlled apparatus and facilities

Division 1 Controlled apparatus

4 Kinds of apparatus that are controlled apparatus

(1) ***Controlled apparatus*** is defined in section 13 of the Act, and includes an apparatus, prescribed by the regulations, that produces harmful non-ionizing radiation when energised.

(2) Apparatus is controlled apparatus if:

(a) the apparatus is:

(i) a magnetic field non-destructive testing device; or

(ii) an induction heater or induction furnace; or

(iii) an industrial radiofrequency heater or welder; or

(iv) a radiofrequency plasma tube; or

(v) microwave or radiofrequency diathermy equipment; or

(vi) an industrial microwave or radiofrequency processing system; or

(vii) an optical source, other than a laser product, emitting ultraviolet radiation, infrared or visible light; or

(viii) a laser product with an accessible emission level greater than the accessible emission limit of a Class 3B (Restricted) laser product as defined by the accessible emission limit given in AS/NZS 2211.1:1997; or

(ix) an optical fibre communication system exceeding Hazard Level 3A as defined by AS/NZS 2211.2:1997; and

(b) it produces non-ionizing radiation that could lead to a person being exposed to radiation levels in excess of the exposure limits mentioned in Schedule 1; and

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(c) the excess levels of radiation mentioned in paragraph (b) are readily accessible to persons:

(i) in the course of intended operations or procedures of the apparatus; or

(ii) under a reasonably foreseeable abnormal event involving the apparatus; or

(iii) under a reasonably foreseeable single element failure of the apparatus; or

(iv) without the use of tools or other specialised equipment required to remove protective barriers or access panels.

(3) However, the CEO may declare, in writing, that the CEO is satisfied that an apparatus mentioned in the declaration should not be controlled apparatus.

(4) The CEO must publish the declaration in the *Gazette* as soon as practicable after making it.

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Division 2 Controlled facilities

5 Controlled facility

(1) ***Controlled facility*** is defined in section 13 of the Act as a nuclear installation or a prescribed radiation facility.

(2) ***Prescribed radiation facility*** is also defined in section 13 as a facility or installation prescribed by the regulations.

(3) This Division describes prescribed radiation facilities, which will therefore be controlled facilities.

6 Prescribed radiation facility

(1) A prescribed radiation facility is any of the following:

(a) a particle accelerator that:

(i) has, or is capable of having, a beam energy greater than 1 MeV; or

(ii) can produce neutrons;

(b) an irradiator that contains more than 10^{15} Bq of a controlled material;

(c) an irradiator that contains more than 10^{13} Bq of a controlled material and:

(i) does not include shielding as an integral part of its construction; or

(ii) if it does include shielding as an integral part of its construction — the shielding does not prevent a person from being exposed to the source; or

(iii) if it does include shielding as an integral part of its construction — has a source that is not inside shielding during the operation of the irradiator;

(d) a facility used for the production, processing, use, storage, management or disposal of:

(i) sealed sources of controlled materials of activity in a quantity greater than 10^9 times that specified in column 4 of Part 2 of Schedule 2; or

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(ii) unsealed sources of controlled materials of activity in a quantity greater than 10^6 times that mentioned in column 4 of Part 2 of Schedule 2;

(c) a facility where:

(i) a mixture of controlled materials is produced, used, stored, managed or disposed of using the facility; and

(ii) the activity of the mixture, worked out using subregulation (2) is greater than the applicable level mentioned in subregulation (2).

(2) The activity of a mixture, and its applicable level, are worked out using the following steps:

Step 1 Divide the activity of each controlled material in mixture by the activity value mentioned in Part 2 of Schedule 2 for the material.

Step 2 Add the fractions for each controlled material.

Step 3 The activity for the mixture is greater than the applicable level if the result from step 2 is greater than:

(i) for sealed sources — 10^9; or

(ii) for unsealed sources — 10^6.

(3) However, the CEO may declare, in writing, that the CEO is satisfied that a facility mentioned in the declaration should not be a prescribed radiation facility.

(4) The CEO must publish the declaration in the *Gazette* as soon as practicable after making it.

(5) A facility is not a prescribed radiation facility if it is mentioned in the declaration.

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Division 3 Prescribed activity levels

7 Prescribed activity levels

(1) Section 13 of the Act provides that a nuclear installation means any of the following:

(a) a nuclear reactor for research or production of nuclear materials for industrial or medical use (including critical and sub-critical assemblies);

(b) a plant for storing fuel for use in a nuclear reactor as described in paragraph (a);

(c) a nuclear waste storage or disposal facility with an activity that is greater than the activity level prescribed by regulations made for the purposes of this section;

(d) a facility for production of radioisotopes with an activity that is greater than the activity level prescribed by regulations made for the purposes of this section.

(2) This Division prescribes the activity levels for paragraphs (c) and (d) of the definition.

8 Prescribed activity level — nuclear waste storage or disposal facility

(1) For paragraph (c) of the definition of ***nuclear installation***, this regulation sets out activity concentrations and activity levels for facilities that:

(a) are nuclear waste storage or disposal facilities; and

(b) contain, or are designed to contain, waste that contains controlled materials.

(2) If a facility contains waste that is in the form of sealed sources the activity level is activity in a quantity greater than 10^{10} times that mentioned in column 4 of Part 2 of Schedule 2.

(3) If a facility contains waste that is in the form of unsealed sources, the activity level is activity in a quantity greater than 10^{6} times that mentioned in column 4 of Part 2 of Schedule 2, with activity concentration in a quantity greater than 10^{4} times that mentioned in Column 3 of Part 2 of Schedule 2.

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(4) If a facility contains waste that contains a mixture of controlled materials, the activity level is activity in a quantity greater than the applicable level, with activity concentration in a quantity greater than the applicable level.

Note To work out whether the activity level and activity concentration is in a quantity greater than the applicable level, see regulations 9 and 10.

9 How to work out activity and applicable level

The activity of a mixture, and its applicable level, are worked out using the following steps:

Step 1 Divide the activity of each controlled material in mixture by the activity value mentioned in column 4 of Part 2 of Schedule 2 for the material.

Step 2 Add the fractions for each controlled material.

Step 3 The activity for the mixture is greater than the applicable level if the result from step 2 is greater than:

(i) for sealed sources — 10^{10}; or

(ii) for unsealed sources — 10^{6}.

10 How to work out activity concentration

The activity concentration of a mixture, and its applicable level, are worked out using the following steps:

Step 1 Divide the activity of each controlled material in mixture by the mass of the mixture and then by the ***activity concentration value*** mentioned in column 3 of Part 2 of Schedule 2 for the material.

Step 2 Add the fractions for each controlled material.

Step 3 The activity concentration for the mixture is greater than the applicable level if the result from step 2 is greater than 10^{4}.

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11 Prescribed activity level — facility for the production of radioisotopes

For paragraph (d) of the definition of ***nuclear installation***, the activity level for a facility that produces radioisotopes containing a mixture of controlled materials is activity in a quantity greater than the applicable level.

Note To work out whether the activity level is in a quantity greater than the applicable level, see regulation 9.

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Part 3 The radiation health and safety advisory council and advisory committees

Division 1 Radiation Health and Safety Advisory Council

12 Radiation Health and Safety Advisory Council

(1) The Radiation Health and Safety Advisory Council is established under section 19 of the Act.

(2) Each member of the Council, other than the CEO, is appointed under subsection 21 (2) of the Act.

(3) The Chair of the Council is appointed under subsection 21 (6) of the Act.

(4) Under section 29 of the Act, the regulations may prescribe matters relating to the Council, including, but not limited to, the term of appointment of members, resignation of members, disclosure of interests by members and procedural matters.

(5) This Division sets out some of the matters relating to the Council.

13 Term of appointment

(1) A Council member is appointed for the term stated in the member's appointment.

(2) The term stated in the appointment must not be greater than 3 years.

(3) However, a Council member may be reappointed for further terms of up to 3 years.

(4) The Chair of the Council is appointed as Chair for the term stated in the Chair's appointment.

(5) The Chair of the Council may be reappointed for further terms.

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14 Resignation

A Council member may resign by signed notice of resignation given to the Minister.

15 Disclosure of interests

A Council member must give written notice to the Minister of all interests, pecuniary or otherwise, that the member has or acquires and that could conflict with the proper performance of the member's functions.

16 Termination of appointment

(1) The Minister may terminate a Council member's appointment for:

(a) physical or mental incapacity; or

(b) misbehaviour; or

(c) incompetence; or

(d) inefficiency; or

(e) failing to comply, either recklessly or intentionally, with regulation 15.

(2) The Minister must terminate the member's appointment if the member:

(a) becomes bankrupt; or

(b) applies to take the benefit of any law for the relief of bankrupt or insolvent debtors; or

(c) compounds with his or her creditors; or

(d) assigns his or her remuneration for the benefit of his or her creditors; or

(e) is convicted of an offence punishable by imprisonment for 1 year or longer; or

(f) is absent without leave of absence from 3 consecutive meetings of the Council.

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17 Leave of absence

(1) The Minister may grant leave of absence to the Chair of the Council.

(2) The Chair may grant leave of absence to another Council member.

18 Council procedures generally

(1) In performing its functions, the Council:

(a) must act according to these regulations; and

(b) must act with as little formality and as quickly as the requirements of these regulations, and a proper consideration of the issues before the Council, allow; and

(c) is not bound by the rules of evidence; and

(d) may obtain information about an issue in any way it considers appropriate; and

(e) may receive information or submissions orally or in writing; and

(f) may consult anyone it considers appropriate.

(2) However, the Council must comply with any directions given, in writing, to the Council by the Minister or the CEO about the Council's performance of its functions.

19 Meetings

(1) The Minister or the CEO may, by written notice to the Council, direct the Council to hold meetings at the times and places, and to deal with matters in the manner, stated in the notice.

(2) If the Minister or the CEO has not given written notice to the Council under subregulation (1), the Council may hold the meetings at the times and places, and may deal with matters in the manner, that the Council considers necessary for the performance of its functions.

(3) Subject to these regulations, the procedure of a Council's meeting is as decided by the Council.

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20 Presiding member

(1) The Chair must preside at a Council meeting at which the Chair is present.

(2) If the Chair is absent, the member chosen by the members present must preside.

21 Quorum

At a Council meeting, a majority of members forms a quorum.

22 Voting

A decision made at a Council meeting by a majority of the votes of the members present and voting is a decision of the Council.

23 Records and reports

(1) The Council must keep a record of its proceedings.

(2) The Council must prepare an annual report for the CEO on the Council's activities for the year.

(3) The Council must prepare any other report that is requested by the Minister or the CEO.

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Division 2 Radiation Health Committee and Nuclear Safety Committee

24 Radiation Health Committee and Nuclear Safety Committee

(1) The Radiation Health Committee is established under section 22 of the Act and the Nuclear Safety Committee is established under section 25 of the Act.

(2) Each member of the Radiation Health Committee, other than the CEO, is appointed under subsection 24 (2) of the Act and the Chair of that Committee is appointed under subsection 24 (6) of the Act.

(3) Each member of the Nuclear Safety Committee, other than the CEO, is appointed under subsection 27 (2) of the Act and the Chair of that Committee is appointed under subsection 27 (6) of the Act.

(4) Under section 29 of the Act, the regulations may prescribe matters relating to the Radiation Health Committee and the Nuclear Safety Committee, including, but not limited to, the term of appointment of members, resignation of members, disclosure of interests by members and procedural matters.

(5) This Division sets out some of the matters relating to the Committees.

25 Term of appointment

(1) A Committee member is appointed for the term stated in the member's appointment.

(2) The term stated in the appointment must not be greater than 3 years.

(3) However, a Committee member may be reappointed for further terms of up to 3 years.

(4) The Chair of a Committee is appointed as Chair for the term stated in the Chair's appointment.

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(5) The Chair of a Committee may be reappointed for further terms.

26 Resignation

A Committee member may resign by signed notice of resignation given to the CEO.

27 Disclosure of interests

A Committee member must give written notice to the CEO of all interests, pecuniary or otherwise, that the member has or acquires and that could conflict with the proper performance of the member's functions.

28 Termination of appointment

(1) The CEO may terminate a Committee member's appointment for:

(a) physical or mental incapacity; or

(b) misbehaviour; or

(c) incompetence; or

(d) inefficiency; or

(e) failing to comply, either recklessly or intentionally, with regulation 27.

(2) The CEO must terminate a Committee member's appointment if the member:

(a) becomes bankrupt; or

(b) applies to take the benefit of any law for the relief of bankrupt or insolvent debtors; or

(c) compounds with his or her creditors; or

(d) assigns his or her remuneration for the benefit of his or her creditors; or

(e) is convicted of an offence punishable by imprisonment for 1 year or longer; or

(f) is absent without leave of absence from 3 consecutive meetings of the Committee.

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29 Leave of absence

(1) The CEO may grant leave of absence to the Chair of a Committee.

(2) The Chair may grant leave of absence to another Committee member.

30 Committee procedures generally

(1) In performing its functions, a Committee:

(a) must act according to these regulations; and

(b) must act with as little formality and as quickly as the requirements of these regulations, and a proper consideration of the issues before the Committee, allow; and

(c) is not bound by the rules of evidence; and

(d) may obtain information about an issue in any way it considers appropriate; and

(e) may receive information or submissions orally or in writing; and

(f) may consult anyone it considers appropriate.

(2) However, the Committee must comply with any directions given, in writing, to the Committee by the CEO or the Council about the Committee's performance of its functions.

31 Meetings

(1) The CEO or the Council may, by written notice to the Committee, direct the Committee to hold meetings at the times and places, and to deal with matters in the manner, stated in the notice.

(2) If the CEO or the Council has not given written notice to the Committee under subregulation (1), the Committee may hold the meetings at the times and places, and may deal with matters in the manner, that the Committee considers necessary for the performance of its functions.

(3) Subject to these regulations, the procedure of a Committee's meeting is as decided by the Committee.

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32 Presiding member

(1) The Chair must preside at a Committee meeting at which the Chair is present.

(2) If the Chair is absent, the member chosen by the members present must preside.

33 Quorum

At a Committee meeting, a majority of members forms a quorum.

34 Voting

A decision made at a Committee meeting by a majority of the votes of the members present and voting is a decision of the Committee.

35 Records and reports

(1) A Committee must keep a record of its proceedings.

(2) A Committee must prepare any report that is requested by the CEO or the Council.

(3) If a Committee prepares a report on any matter, it must give copies of the report to the CEO and to the Chair of the Council.

36 Existing codes — revision

(1) If a Committee revises a nuclear code mentioned in subregulation (2), the revision must be:

(a) notified as soon as practicable in a daily newspaper circulating nationally; and

(b) tabled in Parliament as part of the CEO's next quarterly report.

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(2) The nuclear codes, in force under the *Environment Protection (Nuclear Codes) Act 1978* when these regulations commence, are:

(a) Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores (1982);

(b) Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (1987);

(c) Code of Practice for the Safe Transport of Radioactive Substances 1997.

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Part 4 Licences

Division 1 Exemptions

37 Exempt people (facility licence)

(1) Under subsection 30 (1) of the Act, a controlled person must not do any of the things mentioned in the subsection (***conduct***) relating to a controlled facility unless:

(a) the person is authorised to do so by a facility licence; or

(b) the person is exempted in relation to the conduct concerned by regulations.

Note The conduct mentioned in subsection 30 (1) is any of the following:

preparing a site for the controlled facility;

constructing the controlled facility;

having possession or control of the controlled facility;

operating the controlled facility;

de-commissioning, disposing of or abandoning the controlled facility.

(2) The CEO:

(a) may declare, in writing, that conduct relating to a controlled facility (including conduct that may happen in the future) is not, or will not be, an unacceptable potential hazard to the health and safety of people, or to the environment; and

(b) must describe in a declaration the conduct and the facility.

(3) The CEO may also state in the declaration that:

(a) the declaration has effect only if circumstances mentioned in the declaration exist; or

(b) the declaration does not have effect if circumstances mentioned in the declaration exist.

(4) The CEO must publish the declaration in the *Gazette* as soon as practicable after making it.

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(5) For paragraph 30 (1) (g) of the Act, a controlled person is exempted in relation to all of the conduct, mentioned in the declaration, relating to the controlled facility.

(6) If the declaration has effect, or does not have effect, in accordance with subregulation (3), a controlled person is exempted in relation to conduct only if the declaration has effect when the conduct is to be undertaken.

37A Notice of intention to make a declaration

(1) Before making a declaration under subregulation 37 (2), the CEO must publish in the *Gazette* a notice of his or her intention to make the declaration.

(2) The notice must include:

(a) a copy of the proposed declaration; or

(b) the text of the description required under paragraph 37 (2) (b), and any statements permitted under subregulation 37 (3).

38 Prescribed dealings (source licence)

(1) Under subsection 31 (1) of the Act, a controlled person must not deal with a controlled material or controlled apparatus unless:

(a) the dealing is authorised by a source licence; or

(b) the dealing is prescribed by the regulations as an exempt dealing.

(2) A dealing is exempt if it is described in Part 1 of Schedule 2.

(3) However, the CEO may declare, in writing, that a dealing described in Part 1 of Schedule 2 is a dealing for which:

(a) the annual effective dose to an individual during normal operations is likely to be greater than 10 micro.Sv; or

(b) an accident, misuse or exceptional circumstance affecting the dealing is likely to produce a dose greater than the effective dose limit worked out under regulation 55 or 58; or

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(c) the annual collective effective dose to the population committed by 1 year of the dealing is likely to be greater than 1 man.Sv.

(4) A dealing mentioned in a declaration under subregulation (3) is not exempt.

(5) Also, the CEO may declare, in writing, that a dealing that is not described in Part 1 of Schedule 2 is a dealing for which:

(a) the annual effective dose to an individual during normal operations is likely to be not more than 10 micro.Sv; or

(b) an accident, misuse or exceptional circumstance affecting the dealing is not likely to produce a dose greater than the effective dose limit worked out under regulation 59 or 60; or

(c) the annual collective effective dose to the population committed by 1 year of the dealing is likely to be not more than 1 man.Sv.

(6) Also, the CEO may declare, in writing, that:

(a) a dealing that is not described in Part 1 of Schedule 2 is a dealing involving:

(i) a radiological emergency or its after effects; or

(ii) the after effects of a previous dealing; or

(iii) naturally occurring materials; or

(iv) bulk material with a mass of more than 1,000 kg; and

(b) an assessment of the magnitude of individual doses, the number of people exposed, and the likelihood that potential exposure will actually occur, justify the dealing being exempt.

(7) A dealing is exempt if it is mentioned in a declaration for subregulation (5) or (6).

(8) The CEO must publish a declaration under subregulation (3), (5) or (6) in the *Gazette* as soon as practicable after making it.

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Division 2 Applications for licences

39 Application form

(1) Under paragraph 34 (a) of the Act, an application for a facility licence, or a source licence, must be in a form approved by the CEO.

(2) The CEO may ask an applicant for a facility licence to give:

(a) some or all of the information and documents mentioned in Part 1 of Schedule 3; and

(b) other information about the application if it is appropriate.

(3) The CEO may ask an applicant for a source licence to give:

(a) some or all of the information and documents mentioned in Part 2 of Schedule 3; and

(b) other information about the application if it is appropriate.

(4) An application made for a Department or Commonwealth body must be made:

(a) in the name of the Department or body; and

(b) by:

(i) the Secretary, chief executive, or an equivalent person for the Department or body; or

(ii) another person authorised by the Secretary, chief executive or equivalent person.

40 Issue of facility licence — prior notice and consultation

(1) This regulation applies if the CEO receives an application for a facility licence.

(2) As soon as practicable after receiving the application, the CEO must publish a notice in a daily newspaper circulating nationally, and in the *Gazette*, stating that the CEO intends to make a decision on the application.

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(3) If the application relates to a nuclear installation, the CEO must also include in the notice:

(a) an invitation to people and bodies to make submissions about the application; and

(b) a period for making submissions; and

(c) procedures for making submissions.

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Division 3 Deciding whether to issue licence

41 Issue of facility licence — matters to be taken into account by CEO

(1) The CEO may issue a facility licence to a controlled person.

(2) In deciding whether to issue the licence, the CEO must take into account the matters (if any) specified in the regulations.

(3) The matters are:

(a) whether the application includes the information asked for by the CEO; and

(b) whether the information establishes that the proposed conduct can be carried out without undue risk to the health and safety of people, and to the environment; and

(c) whether the applicant has shown that there is a net benefit from carrying out the conduct relating to the controlled facility; and

(d) whether the applicant has shown that the magnitude of individual doses, the number of people exposed, and the likelihood that exposure will happen, are as low as reasonably achievable, having regard to economic and social factors; and

(e) whether the applicant has shown a capacity for complying with these regulations and the licence conditions that would be imposed under section 35 of the Act; and

(f) whether the application has been signed by an office holder of the applicant, or a person authorised by an office holder of the applicant; and

(g) if the application is for a facility licence for a nuclear installation — the content of any submissions made by members of the public about the application.

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42 Issue of source licence — matters to be taken into account by CEO

(1) The CEO may issue a source licence to a controlled person.

(2) In deciding whether to issue the licence, the CEO must take into account the matters (if any) specified in the regulations.

(3) The matters are:

(a) whether the application includes the information asked for by the CEO; and

(b) whether the information establishes that the controlled apparatus or material can be dealt with without undue risk to the health and safety of people, and to the environment; and

(c) whether the applicant has shown that there is a net benefit from dealing with the controlled apparatus or material; and

(d) whether the applicant has shown that the magnitude of individual doses, the number of people exposed, and the likelihood that exposure will happen, are as low as reasonably achievable, having regard to economic and social factors; and

(e) whether the applicant has shown a capacity for complying with these regulations and the licence conditions that would be imposed under section 35 of the Act; and

(f) whether the application has been signed by an office holder of the applicant, or a person authorised by an office holder of the applicant.

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Division 4 Licence conditions

43 Purpose of Division

(1) Under paragraph 35 (1) (b) of the Act, a facility or source licence is subject to the conditions prescribed by the regulations.

(2) This Division prescribes the conditions.

44 Holder of a licence must prevent breaches of conditions

The holder of a licence must take all reasonably practicable steps to prevent breaches of licence conditions.

45 Holder of a licence must investigate and rectify breaches of conditions

(1) The holder of a licence must investigate suspected breaches of licence conditions.

(2) If the holder of a licence identifies a breach, the holder of a licence must rectify the breach and any consequences of the breach as soon as reasonably practicable.

(3) If the holder of a licence identifies a breach, the holder of a licence must also tell the CEO as soon as reasonably practicable.

46 Holder of a licence to prevent, control and minimise accidents

(1) The holder of a licence must take all reasonably practicable steps to prevent accidents involving controlled materials, controlled apparatus or controlled facilities described in the licence.

(2) If an accident mentioned in subregulation (1) happens, the holder of a licence must:

(a) take all reasonably practicable steps to control the accident; and

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(b) take all reasonably practicable steps to minimise the consequences of the accident, including injury to any person and damage or harm to the environment; and

(c) tell the CEO about the accident within 24 hours of it happening; and

(d) give the CEO a written report about the accident within 14 days of it happening.

47 Compliance with *National Standard for Limiting Occupational Exposure to Ionizing Radiation*

(1) This regulation does not apply to conduct and dealings with controlled apparatus of a kind mentioned in regulation 4.

Note Regulation 4 describes kinds of apparatus that are controlled apparatus.

(2) The holder of a source licence or a facility licence must ensure that conduct and dealings with controlled materials, controlled apparatus and controlled facilities comply with the *National Standard for Limiting Occupational Exposure to Ionizing Radiation.*

48 Compliance with Recommendations and Codes of Practice

(1) This regulation does not apply to conduct and dealings with controlled apparatus of a kind mentioned in regulation 4.

Note Regulation 4 describes kinds of apparatus that are controlled apparatus.

(2) The holder of a source licence or a facility licence must ensure that all conduct and dealings with controlled materials, controlled apparatus and controlled facilities are in accordance with:

(a) the *Recommendations for limiting exposure to ionizing radiation*; and

(b) the *Code of Practice for the Safe Transport of Radioactive Substances.*

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(3) The holder of a source licence or a facility licence must also ensure that dealings with the disposal of controlled material and controlled apparatus are in accordance with the following Codes of Practice:

(a) the *Code of Practice for the Disposal of Radioactive Waste by the User*;

(b) the *Code of Practice for the Near-Surface Disposal of Radioactive Waste in Australia*;

(c) the *Code of Practice for the Safe Transport of Radioactive Substances*.

49 Compliance with plans for managing safety

The holder of a licence must ensure that all dealings with controlled materials and controlled apparatus, and all activities related to controlled facilities, comply with the plans and arrangements for managing safety of the source or facility, mentioned in the licence application.

50 Holder of a licence must review and update plans and arrangements

(1) The holder of a licence must, at least once every 12 months, review and update any plans and arrangements for managing the controlled facility, controlled material or controlled apparatus to ensure the health and safety of people and protection of the environment.

(2) The holder of a licence must, after conducting a review mentioned in subregulation (1), give the CEO information about the review.

51 CEO approval for relevant changes

The holder of a licence must seek the CEO's prior approval to make a relevant change that will have significant implications for safety.

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52 Holder of a licence must tell CEO about other changes

(1) The holder of a licence may make a relevant change that is unlikely to have significant implications for safety without the CEO's approval.

(2) However, the holder of a licence must, at least once every 3 months, tell the CEO about any changes mentioned in subregulation (1).

(3) However, subregulation (2) does not apply to the extent that the licence makes other arrangements for a matter mentioned in the subregulations.

53 Holder of a licence must tell CEO about movement of controlled apparatus, controlled materials and controlled facilities

(1) The holder of a licence must only dispose of controlled apparatus or controlled materials with the approval of the CEO.

(2) If the holder of a licence transfers controlled apparatus or controlled materials to the possession of another person or body, the holder of the licence must, within 7 days of the transfer, tell the CEO:

(a) that the transfer has happened; and

(b) the name of the other person or body; and

(c) the number of the licence held by the other person or body; and

(d) the location of the controlled apparatus or controlled materials after the transfer.

(3) The holder of a licence must not dispose of, or transfer to the possession of another person or body, a controlled facility without the CEO's approval.

(4) However, subregulations (1), (2) and (3) do not apply to the extent that the licence makes other arrangements for a matter mentioned in the subregulations.

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54 Holder of a licence must seek approval to construct safety item

The holder of a licence must only construct an item that is important for safety, and identified in a safety analysis report, as part of the construction of a controlled facility, if the CEO has given the holder approval to construct it.

55 Holder of a licence must not load nuclear fuel without approval

The holder of a licence must only load nuclear fuel into a controlled facility, as part of the construction of the controlled facility, if the CEO has given the holder approval to load it.

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Part 5 Practices to be followed

56 Purpose of Part

(1) For paragraph 85 (2) (a) of the Act, the regulations may require specified standards to be observed, practices and procedures to be followed and measures to be taken by controlled persons in relation to activities relating to controlled facilities, and in relation to dealings with controlled apparatus or controlled material.

(2) This Part describes a prescribed practice.

57 Application of Part

This Part applies only to the extent that:

(a) a holder of a licence can comply with it without taking action which constitutes unlawful discrimination under the *Sex Discrimination Act 1984*; or

(b) a holder of a licence that cannot comply with it without taking action which constitutes unlawful discrimination under the *Sex Discrimination Act 1984* is exempted, under section 44 of that Act, from its operation.

58 Prescribed practice

(1) The practices mentioned in this regulation are prescribed for:

(a) a facility at which controlled material is present; and

(b) dealings with controlled apparatus and controlled material.

(2) The holder of a facility licence for operating the controlled facility must ensure that the doses to which a person is exposed, inside or outside the facility, while the material is under the holder's control, do not exceed the effective dose limits mentioned in regulation 59, and the equivalent dose limits mentioned in regulation 64.

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(3) The holder of a source licence for dealing with controlled apparatus or controlled material must ensure that the doses to which a person is exposed while the source in the apparatus or material is under the holder's control do not exceed the effective dose limits mentioned in regulation 59, and the equivalent dose limits mentioned in regulation 64.

(4) For each controlled material, controlled apparatus (excluding apparatus prescribed by these regulations that produce harmful non-ionizing radiation when energised) and controlled facility, the holder of a licence must ensure that radiation protection and safety are optimised so that the following are as low as reasonably achievable after taking into account economic and social factors:

(a) the magnitude of individual doses;

(b) the number of people who are exposed;

(c) the likelihood of incurring exposures to radiation.

(5) The optimisation of radiation protection and safety mentioned in subregulation (4) must be in accordance with source-related dose constraints established in accordance with the *Recommendations for limiting exposure to ionising radiation* and agreed by the CEO.

(6) For apparatus prescribed by these regulations that produce harmful non-ionising radiation when energised, the holder of a licence must ensure that exposure to people is kept to the lowest level that can be achieved, consistent with best practice.

59 Effective dose limits

(1) The effective dose limit for occupational exposure is 20 mSv annually, averaged over 5 consecutive calendar years.

(2) However, the effective dose for a person subject to occupational exposure must not, in a year, be greater than 50 mSv.

(3) The effective dose limit for public exposure is 1 mSv annually.

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(4) The effective dose limit for an unborn child is to be consistent with the effective dose limit for public exposure.

Note For the obligation imposed on female employees who are pregnant, see the *National Standard for Limiting Occupational Exposure to Ionizing Radiation*, which is a prescribed standard for regulation 62.

60 Effective doses

(1) For regulation 59, a person's effective dose for a relevant period is the sum of:

(a) the effective dose that the person receives, from external exposure, during the relevant period; and

(b) the person's committed effective dose, received from intakes during the relevant period, for the next 50 years.

(2) However, if the person is under 18, the committed effective dose must be worked out on the basis of the number of years calculated by subtracting the person's age, at the time of the calculation, from 70.

61 Dealings with controlled apparatus generating non-ionizing radiation

The holder of a source licence must ensure that all dealings with controlled apparatus generating non-ionizing radiation comply with the appropriate exposure limits set out in the standards and codes mentioned in Schedule 1.

62 Annual equivalent dose limit

(1) The annual equivalent dose limit to the lens of the eye is:

(a) for occupational exposure — 150 mSv; and

(b) for public exposure — 15 mSv.

(2) For occupational exposure, the annual equivalent dose limit to the hands and feet is 500 mSv.

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(3) The annual equivalent dose limit to the skin is:

(a) for occupational exposure — 500 mSv; and

(b) for public exposure — 50 mSv.

(4) The annual equivalent dose limit to the skin applies to the average dose received by any 1 cm^2 of skin.

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Part 6 Reporting and inspection for controlled facilities, apparatus and materials

63 Reporting guidelines to be published by CEO

(1) For paragraph 15 (1) (i) of the Act, the CEO must make guidelines about:

(a) how the CEO will report on the operations of the Agency; and

(b) how licence holders will report their compliance with the Act, these regulations and licence conditions; and

(c) how inspection of controlled facilities, controlled apparatus and controlled materials will be conducted.

(2) The CEO must publish a draft of the guidelines, and invite public comments on the draft, within 12 months of the commencement of these regulations.

Note These regulations commence on gazettal: see regulation 2.

64 Inspector's identity card

(1) Under subsection 62 (1) of the Act, the CEO may appoint certain people as inspectors.

(2) Under subsection 62 (3) of the Act, the CEO must issue an identity card to an inspector, in the form prescribed by the regulations.

(3) The identity card must be in the form set out in Schedule 4.

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Schedule 1 Exposure limits for non-ionizing radiation

(regulations 4 and 61)

1 The exposure limits mentioned in the *Interim guidelines on limits of exposure to 50/60 Hz electric and magnetic fields*, National Health and Medical Research Council, Radiation Health Series No. 30, 1989, as in force when these regulations commence.

2 For frequencies other than 50/60 Hz, and below 3 kHz, the field limits mentioned in the International Commission on Non-Ionizing Radiation Protection Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz), Health Physics (1998), 74, 494-522, as in force when these regulations commence.

3 The maximum exposure levels mentioned in interim Australia / New Zealand Standard *AS/NZS 2772.1(Int): 1998 Radiofrequency fields, Part 1: Maximum exposure levels — 3 kHz to 300 GHz*, published by Standards Australia, Homebush, NSW, 1998, as in force when these regulations commence.

4 The maximum permissible exposure limits mentioned in the Australia / New Zealand Standard *AS/NZS 2211.1: 1997 Laser Safety, Part 1: Equipment classification requirements and user's guide*, published by Standards Australia, Homebush, NSW, 1997, as in force when these regulations commence.

5 The exposure limits mentioned in the International Commission on Non-Ionizing Radiation Protection: *Guidelines on limits of exposure to broadband incoherent optical radiation (0.38 to 3 μm)*, Health Physics (1997), 73, 539-553, as in force when these regulations commence.

6 The exposure limits mentioned in the *Occupational standard for exposure to ultraviolet radiation (1989)*, National Health and Medical Research Council, Radiation Health Series No. 29, 1989, as in force when these regulations commence.

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7 For static magnetic fields — the limits mentioned in the International Commission on Non-Ionizing Radiation Protection: *Guidelines on limits of exposure to static magnetic fields*, Health Physics (1994), 66, 100-106, as in force when these regulations commence.

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Schedule 2 Exempt dealings

(regulations 6 and 38)

Part 1 Dealings

Item	Description of dealing
1	The dealing involves a controlled material that has: (a) an activity concentration less than the concentration for the material mentioned in column 3 of Part 2; or (b) an activity of less than the activity in column 4 of Part 2.
2	The dealing is mixing 2 or more controlled materials. The activity for each material being mixed is divided by: (a) the activity for the material in column 4 of Part 2; or (b) the activity concentration for the material in column 3 of Part 2, and then divided by the total mass of the mixture. The results for all of the materials are added. The total is 1 or less.
3	The dealing involves naturally occurring radon-222 with an activity concentration of less than 1000 Bq/m^3 in the special case of exposure in the workplace. If the dealing includes any other controlled material, the use of the other material must also be an exempt dealing.

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Item	Description of dealing
4	The dealing involves depleted uranium and no other controlled material. The uranium: (a) is being used as radiation shielding in a container for controlled materials; and (b) is completely contained in an appropriate metallic sheath; and (c) is in a container for controlled materials that complies with the requirements in the Code of Practice for the Safe Transport of Radioactive Substances for transporting radioactive substances.
5	The dealing involves depleted uranium and no other controlled material. The depleted uranium is in solid massive form that is used for ballast.
6	The dealing involves a smoke detector designed and made in accordance with Australian Standard AS3786, as in force when these regulations commence. The dealing is not repair or maintenance of the detector.
7	The dealing involves any of the following items and no other controlled material: (a) a clock, watch or other device with a luminous dial that includes a quantity of a controlled material that is not more than the quantity in Part 4; (b) a gaseous tritium light device that: (i) is used solely for safety purposes; and (ii) includes less than 74 GBq of tritium. (c) a television receiver; (d) a visual display terminal; (e) a cathode ray tube; (f) an electron microscope.

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Part 2 Exemption levels: exempt activity concentrations and exempt activities of radionuclides (rounded)

For a nuclide marked [a] in this Part, parent nuclides and their progeny included in secular equilibrium are listed in Part 3.

Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
1	H-3	1×10^6	1×10^9
2	Be-7	1×10^3	1×10^7
3	C-11	1×10^1	1×10^6
4	C-14	1×10^4	1×10^7
5	O-15	1×10^2	1×10^9
6	N-13	1×10^2	1×10^9
7	F-18	1×10^1	1×10^6
8	Na-22	1×10^1	1×10^6
9	Na-24	1×10^1	1×10^5
10	Mg-28	1×10^1	1×10^5
11	Si-31	1×10^3	1×10^6
12	P-32	1×10^3	1×10^5
13	P-33	1×10^5	1×10^8
14	S-35	1×10^5	1×10^8
15	Cl-36	1×10^4	1×10^6

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Part 2 Exemption levels: exempt activity concentrations and exempt activities of radionuclides (rounded)

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4	C-14	1×10^4	1×10^7
5	O-15	1×10^2	1×10^9
6	N-13	1×10^2	1×10^9
7	F-18	1×10^1	1×10^6
8	Na-22	1×10^1	1×10^6
9	Na-24	1×10^1	1×10^5
10	Mg-28	1×10^1	1×10^5
11	Si-31	1×10^3	1×10^6
12	P-32	1×10^3	1×10^5
13	P-33	1×10^5	1×10^8
14	S-35	1×10^5	1×10^8
15	Cl-36	1×10^4	1×10^6

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
36	Fe-55	1×10^4	1×10^6
37	Fe-59	1×10^1	1×10^6
38	Co-55	1×10^1	1×10^6
39	Co-56	1×10^1	1×10^5
40	Co-57	1×10^2	1×10^6
41	Co-58	1×10^1	1×10^6
42	Co-58m	1×10^4	1×10^7
43	Co-60	1×10^1	1×10^5
44	Co-60m	1×10^3	1×10^6
45	Co-61	1×10^2	1×10^6
46	Co-62m	1×10^1	1×10^5
47	Ni-59	1×10^4	1×10^8
48	Ni-63	1×10^5	1×10^8
49	Ni-65	1×10^1	1×10^6
50	Cu-64	1×10^2	1×10^6
51	Cu-67	1×10^2	1×10^6
52	Zn-65	1×10^1	1×10^6
53	Zn-69	1×10^4	1×10^6
54	Zn-69m	1×10^2	1×10^6
55	Ga-67	1×10^2	1×10^6

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
56	Ga-72	1×10^{1}	1×10^{5}
57	Ge-68	1×10^{1}	1×10^{5}
58	Ge-71	1×10^{4}	1×10^{8}
59	As-73	1×10^{3}	1×10^{7}
60	As-74	1×10^{1}	1×10^{6}
61	As-76	1×10^{2}	1×10^{5}
62	As-77	1×10^{3}	1×10^{6}
63	Se-73	1×10^{1}	1×10^{6}
64	Se-75	1×10^{2}	1×10^{6}
65	Br-75	1×10^{1}	1×10^{6}
66	Br-76	1×10^{1}	1×10^{5}
67	Br-82	1×10^{1}	1×10^{6}
68	Kr-74	1×10^{2}	1×10^{9}
69	Kr-76	1×10^{2}	1×10^{9}
70	Kr-77	1×10^{2}	1×10^{9}
71	Kr-79	1×10^{3}	1×10^{5}
72	Kr-81	1×10^{4}	1×10^{7}
73	Kr-83m	1×10^{5}	1×10^{12}
74	Kr-85	1×10^{5}	1×10^{4}
75	Kr-85m	1×10^{3}	1×10^{10}

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
76	Kr-87	1×10^2	1×10^9
77	Kr-88	1×10^2	1×10^9
78	Rb-81	1×10^1	1×10^6
79	Rb-86	1×10^2	1×10^5
80	Sr-85	1×10^2	1×10^6
81	Sr-85m	1×10^2	1×10^7
82	Sr-87m	1×10^2	1×10^6
83	Sr-89	1×10^3	1×10^6
84	Sr-90[a]	1×10^2	1×10^4
85	Sr-91	1×10^1	1×10^5
86	Sr-92	1×10^1	1×10^6
87	Y-90	1×10^3	1×10^5
88	Y-91	1×10^3	1×10^6
89	Y-91m	1×10^2	1×10^6
90	Y-92	1×10^2	1×10^5
91	Y-93	1×10^2	1×10^5
92	Zr-93[a]	1×10^3	1×10^7
93	Zr-95	1×10^1	1×10^6
94	Zr-97[a]	1×10^1	1×10^5
95	Nb-93m	1×10^4	1×10^7

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
96	Nb-94	1×10^{1}	1×10^{6}
97	Nb-95	1×10^{1}	1×10^{6}
98	Nb-97	1×10^{1}	1×10^{6}
99	Nb-98	1×10^{1}	1×10^{5}
100	Mo-90	1×10^{1}	1×10^{6}
101	Mo-93	1×10^{3}	1×10^{8}
102	Mo-99[a]	1×10^{2}	1×10^{6}
103	Mo-101	1×10^{1}	1×10^{6}
104	Tc-95m	1×10^{1}	1×10^{6}
105	Tc-96	1×10^{1}	1×10^{6}
106	Tc-96m	1×10^{3}	1×10^{7}
107	Tc-97	1×10^{3}	1×10^{8}
108	Tc-97m	1×10^{3}	1×10^{7}
109	Tc-99	1×10^{4}	1×10^{7}
110	Tc-99m	1×10^{2}	1×10^{7}
111	Ru-97	1×10^{2}	1×10^{7}
112	Ru-103	1×10^{2}	1×10^{6}
113	Ru-105	1×10^{1}	1×10^{6}
114	Ru-106[a]	1×10^{2}	1×10^{5}
115	Rh-103m	1×10^{4}	1×10^{8}

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
116	Rh-105	1×10^2	1×10^7
117	Pd-103	1×10^3	1×10^8
118	Pd-109	1×10^3	1×10^6
119	Ag-105	1×10^2	1×10^6
120	Ag-110m	1×10^1	1×10^6
121	Ag-111	1×10^3	1×10^6
122	Cd-109	1×10^4	1×10^6
123	Cd-115	1×10^2	1×10^6
124	Cd-115m	1×10^3	1×10^6
125	In-111	1×10^2	1×10^6
126	In-113m	1×10^2	1×10^6
127	In-114m	1×10^2	1×10^6
128	In-115m	1×10^2	1×10^6
129	Sn-113	1×10^3	1×10^7
130	Sn-117m	1×10^2	1×10^6
131	Sn-121	1×10^5	1×10^7
132	Sn-125	1×10^2	1×10^5
133	Sb-122	1×10^2	1×10^4
134	Sb-124	1×10^1	1×10^6
135	Sb-125	1×10^2	1×10^6

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
136	Te-123m	1×10^2	1×10^7
137	Te-125m	1×10^3	1×10^7
138	Te-127	1×10^3	1×10^6
139	Te-127m	1×10^3	1×10^7
140	Te-129	1×10^2	1×10^6
141	Te-129m	1×10^3	1×10^6
142	Te-131	1×10^2	1×10^5
143	Te-131m	1×10^1	1×10^6
144	Te-132	1×10^2	1×10^7
145	Te-133	1×10^1	1×10^5
146	Te-133m	1×10^1	1×10^5
147	Te-134	1×10^1	1×10^6
148	I-123	1×10^2	1×10^7
149	I-124	1×10^1	1×10^6
150	I-125	1×10^3	1×10^6
151	I-126	1×10^2	1×10^6
152	I-129	1×10^2	1×10^5
153	I-130	1×10^1	1×10^6
154	I-131	1×10^2	1×10^6
155	I-132	1×10^1	1×10^5

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
156	I-133	1×10^{1}	1×10^{6}
157	I-134	1×10^{1}	1×10^{5}
158	I-135	1×10^{1}	1×10^{6}
159	Xe-131m	1×10^{4}	1×10^{4}
160	Xe-133	1×10^{3}	1×10^{4}
161	Xe-135	1×10^{3}	1×10^{10}
162	Cs-129	1×10^{2}	1×10^{5}
163	Cs-131	1×10^{3}	1×10^{6}
164	Cs-132	1×10^{1}	1×10^{5}
165	Cs-134m	1×10^{3}	1×10^{5}
166	Cs-134	1×10^{1}	1×10^{4}
167	Cs-135	1×10^{4}	1×10^{7}
168	Cs-136	1×10^{1}	1×10^{5}
169	Cs-137[n]	1×10^{1}	1×10^{4}
170	Cs-138	1×10^{1}	1×10^{4}
171	Ba-131	1×10^{2}	1×10^{6}
172	Ba-133	1×10^{2}	1×10^{6}
173	Ba-140[a]	1×10^{1}	1×10^{5}
174	La-140	1×10^{1}	1×10^{5}
175	Ce-139	1×10^{2}	1×10^{6}

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
176	Ce-141	1×10^2	1×10^7
177	Ce-143	1×10^2	1×10^6
178	Ce-144[a]	1×10^2	1×10^5
179	Pr-142	1×10^2	1×10^5
180	Pr-143	1×10^4	1×10^6
181	Nd-147	1×10^2	1×10^6
182	Nd-149	1×10^2	1×10^6
183	Pm-147	1×10^4	1×10^7
184	Pm-149	1×10^3	1×10^6
185	Sm-147	1×10^1	1×10^4
186	Sm-151	1×10^4	1×10^8
187	Sm-153	1×10^2	1×10^6
188	Eu-152	1×10^1	1×10^6
189	Eu-152m	1×10^2	1×10^6
190	Eu-154	1×10^1	1×10^6
191	Eu-155	1×10^2	1×10^7
192	Gd-153	1×10^2	1×10^7
193	Gd-159	1×10^3	1×10^6
194	Tb-149	1×10^1	1×10^6
195	Tb-160	1×10^1	1×10^6

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
196	Dy-165	1×10^3	1×10^6
197	Dy-166	1×10^3	1×10^6
198	Ho-166	1×10^3	1×10^5
199	Er-161	1×10^1	1×10^6
200	Er-169	1×10^4	1×10^7
201	Er-171	1×10^2	1×10^6
202	Tm-170	1×10^3	1×10^6
203	Tm-171	1×10^4	1×10^8
204	Yb-169	1×10^2	1×10^7
205	Yb-175	1×10^3	1×10^7
206	Lu-177	1×10^3	1×10^7
207	Hf-181	1×10^1	1×10^6
208	Ta-182	1×10^1	1×10^4
209	W-181	1×10^3	1×10^7
210	W-185	1×10^4	1×10^7
211	W-187	1×10^2	1×10^6
212	W-188	1×10^2	1×10^5
213	Re-186	1×10^3	1×10^6
214	Re-188	1×10^2	1×10^5
215	Os-185	1×10^1	1×10^6

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
216	Os-191	1×10^2	1×10^7
217	Os-191m	1×10^3	1×10^7
218	Os-193	1×10^2	1×10^6
219	Ir-190	1×10^1	1×10^6
220	Ir-192	1×10^1	1×10^4
221	Ir-194	1×10^2	1×10^5
222	Pt-191	1×10^2	1×10^6
223	Pt-193m	1×10^3	1×10^7
224	Pt-197	1×10^3	1×10^6
225	Pt-197m	1×10^2	1×10^6
226	Au-198	1×10^2	1×10^6
227	Au-199	1×10^2	1×10^6
228	Hg-195m	1×10^2	1×10^6
229	Hg-197	1×10^2	1×10^7
230	Hg-197m	1×10^2	1×10^6
231	Hg-203	1×10^2	1×10^5
232	Tl-200	1×10^1	1×10^6
233	Tl-201	1×10^2	1×10^6
234	Tl-202	1×10^2	1×10^6
235	Tl-204	1×10^4	1×10^4

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
236	Pb-203	1×10^2	1×10^6
237	Pb-210[a]	1×10^1	1×10^4
238	Pb-212[a]	1×10^1	1×10^5
239	Bi-206	1×10^1	1×10^5
240	Bi-207	1×10^1	1×10^6
241	Bi-210	1×10^3	1×10^6
242	Bi-212[a]	1×10^1	1×10^5
243	Bi-213	1×10^2	1×10^6
244	Po-203	1×10^1	1×10^6
245	Po-205	1×10^1	1×10^6
246	Po-207	1×10^1	1×10^6
247	Po-210	1×10^1	1×10^4
248	At-211	1×10^3	1×10^7
249	Rn-220[a]	1×10^4	1×10^7
250	Rn-222[a]	1×10^1	1×10^8
251	Ra-223[a]	1×10^2	1×10^5
252	Ra-224[a]	1×10^1	1×10^5
253	Ra-225	1×10^2	1×10^5
254	Ra-226[a]	1×10^1	1×10^4
255	Ra-227	1×10^2	1×10^6

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
256	Ra-228[a]	1×10^{1}	1×10^{5}
257	Ac-225	1×10^{1}	1×10^{4}
258	Ac-227	1×10^{1}	1×10^{3}
259	Ac-228	1×10^{1}	1×10^{6}
260	Th-226[a]	1×10^{3}	1×10^{7}
261	Th-227	1×10^{1}	1×10^{4}
262	Th-228[a]	1×10^{0}	1×10^{4}
263	Th-229[a]	1×10^{0}	1×10^{3}
264	Th-230	1×10^{0}	1×10^{4}
265	Th-231	1×10^{3}	1×10^{7}
266	Th-nat (including Th-232)[a]	1×10^{0}	1×10^{3}
267	Th-234[a]	1×10^{3}	1×10^{5}
268	Pa-230	1×10^{1}	1×10^{6}
269	Pa-231	1×10^{0}	1×10^{3}
270	Pa-233	1×10^{2}	1×10^{7}
271	U-230[a]	1×10^{1}	1×10^{5}
272	U-231	1×10^{2}	1×10^{7}
273	U-232[a]	1×10^{0}	1×10^{3}
274	U-233	1×10^{1}	1×10^{4}

Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
275	U-234	1×10^{1}	1×10^{4}
276	U-235[a]	1×10^{1}	1×10^{4}
277	U-236	1×10^{1}	1×10^{4}
278	U-237	1×10^{2}	1×10^{6}
279	U-238[a]	1×10^{1}	1×10^{4}
280	U-nat[a]	1×10^{0}	1×10^{3}
281	U-239	1×10^{2}	1×10^{6}
282	U-240	1×10^{3}	1×10^{7}
283	U-240[a]	1×10^{1}	1×10^{6}
284	Np-237[a]	1×10^{0}	1×10^{3}
285	Np-239	1×10^{2}	1×10^{7}
286	Np-240	1×10^{1}	1×10^{6}
287	Pu-234	1×10^{2}	1×10^{7}
288	Pu-235	1×10^{2}	1×10^{7}
289	Pu-236	1×10^{1}	1×10^{4}
290	Pu-237	1×10^{3}	1×10^{7}
291	Pu-238	1×10^{0}	1×10^{4}
292	Pu-239	1×10^{0}	1×10^{4}
293	Pu-240	1×10^{0}	1×10^{3}
294	Pu-241	1×10^{2}	1×10^{5}

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
295	Pu-242	1×10^{0}	1×10^{4}
296	Pu-243	1×10^{3}	1×10^{7}
297	Pu-244	1×10^{0}	1×10^{4}
298	Am-241	1×10^{0}	1×10^{4}
299	Am-242	1×10^{3}	1×10^{6}
300	Am-242m[a]	1×10^{0}	1×10^{4}
301	Am-243[a]	1×10^{0}	1×10^{3}
302	Cm-242	1×10^{2}	1×10^{5}
303	Cm-243	1×10^{0}	1×10^{4}
304	Cm-244	1×10^{1}	1×10^{4}
305	Cm-245	1×10^{0}	1×10^{3}
306	Cm-246	1×10^{0}	1×10^{3}
307	Cm-247	1×10^{0}	1×10^{4}
308	Cm-248	1×10^{0}	1×10^{3}
309	Bk-249	1×10^{3}	1×10^{6}
310	Cf-246	1×10^{3}	1×10^{6}
311	Cf-248	1×10^{1}	1×10^{4}
312	Cf-249	1×10^{0}	1×10^{3}
313	Cf-250	1×10^{1}	1×10^{4}
314	Cf-251	1×10^{0}	1×10^{3}

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Item	Nuclide	Activity concentration (Bq/g)	Activity (Bq)
315	Cf-252	1×10^{1}	1×10^{4}
316	Cf-253	1×10^{2}	1×10^{5}
317	Cf-254	1×10^{0}	1×10^{3}
318	Es-253	1×10^{2}	1×10^{5}
319	Es-254	1×10^{1}	1×10^{4}
320	Es-254m	1×10^{2}	1×10^{6}
321	Fm-254	1×10^{4}	1×10^{7}
322	Fm-255	1×10^{3}	1×10^{6}
323	alpha-emitting radionuclide not mentioned in another item	1×10^{0}	1×10^{3}
324	radionuclide that is not alpha-emitting and not mentioned in another item	1×10^{1}	1×10^{4}

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Part 3 Nuclides and progeny

For a nuclide marked [a] in Part 2, parent nuclides and their progeny included in secular equilibrium are listed in the following table:

Item	Parent nuclide	Progeny
1	Sr-90	Y-90
2	Zr-93	Nb-93m
3	Zr-97	Nb-97
4	Mo-99	Tc-99m
5	Ru-106	Rh-106
6	Cs-137	Ba-137m
7	Ba-140	La-140
8	Ce-144	Pr-144
9	Pb-210	Bi-210 Po-210
10	Pb-212	Bi-212 Tl-208 (0.36) Po-212 (0.64)
11	Bi-212	Tl-208 (0.36) Po-212 (0.64)
12	Rn-220	Po-216
13	Rn-222	Po-218 Pb-214 Bi-214 Po-214

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Item	Parent nuclide	Progeny
14	Ra-223	Rn-219 Po-215 Pb-211 Bi-211 Tl-207
15	Ra-224	Rn-220 Po-216 Pb-212 Bi-212 Tl-208 (0.36) Po-212 (0.64)
16	Ra-226	Rn-222 Po-218 Pb-214 Bi-214 Po-214 Pb-210 Bi-210 Po-210
17	Ra-228	Ac-228
18	Th-226	Ra-222 Rn-218 Po-214
19	Th-228	Ra-224 Rn-220 Po-216 Pb-212 Bi-212 Tl-208 (0.36) Po-212 (0.64)

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Item	Parent nuclide	Progeny
20	Th-229	Ra-225 Ac-225 Fr-221 At-217 Bi-213 Po-213 Pb-209
21	Th-nat	Ra-228 Ac-228 Th-228 Ra-224 Rn-220 Po-216 Pb-212 Bi-212 Tl-208 (0.36) Po-212 (0.64)
22	Th-234	Pa-234m
23	U-230	Th-226 Ra-222 Rn-218 Po-214
24	U-232	Th-228 Ra-224 Rn-220 Po-216 Pb-212 Bi-212 Tl-208 (0.36) Po-212 (0.64)
25	U-235	Th-231
26	U-238	Th-234 Pa-234m

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Item	Parent nuclide	Progeny
27	U-nat	Th-234 Pa-234m U-234 Th-230 Ra-226 Rn-222 Po-218 Pb-214 Bi-214 Po-214 Pb-210 Bi-210 Po-210
28	U-240	Np-240m
29	Np-237	Pa-233
30	Am-242m	Am-242
31	Am-243	Np-239

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Part 4 Quantities of radioactive substances in timekeeping and other devices

Item	Radioactive substance	Quantity
For a wrist watch		
1	H-3	280 MBq
2	Pm-147	5.5 MBq
3	Ra-226	5.5 kBq
For a pocket watch		
4	H-3	280 MBq
5	Pm-147	5.5 MBq
For a clock		
6	H-3	370 MBq
7	Pm-147	7.4 MBq
8	Ra-226	7.4 kBq
For another timepiece usually worn by a person, containing quantities of radioactive substances to produce luminosity necessary for special purposes		
9	H-3	920 MBq
10	Pm-147	18 MBq
11	Ra-226	5.5 kBq
For other devices		
12	H-3	920 MBq
13	Pm-147	18 MBq
14	Ra-226	5.5 kBq

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Schedule 3 Information that may be requested by the CEO

(regulation 39)

Part 1 Facility licence

Item	Information
	General information
1	The applicant's full name, position and business address.
2	A description of the purpose of the facility that is to be authorised by the facility licence.
3	A detailed description of the controlled facility and the site for that facility.
4	Plans and arrangements describing how the applicant proposes to manage the controlled facility to ensure the health and safety of people, and the protection of the environment including the following information: (a) the applicant's arrangements for maintaining effective control of the facility; (b) the safety management plan for the controlled facility; (c) the radiation protection plan for the controlled facility; (d) the radioactive waste management plan for the controlled facility; (e) the security plan for the controlled facility; (f) the emergency plan for the controlled facility.
	Authorisation for preparing a site for a controlled facility
5	A detailed site evaluation establishing the suitability of the site.
6	The characteristics of the site, including the extent to which the site may be affected by natural and man-made events.

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Item	Information
7	Any environmental impact statement requested or required by a government agency, and the outcome of the environmental assessment.
Authorisation to construct a controlled facility	
8	The design of the controlled facility, including ways in which the design deals with the physical and environmental characteristics of the site.
9	Any fundamental difficulties that will need to be resolved before any future authorisation is given.
10	The construction plan and schedule.
11	A preliminary safety analysis report that demonstrates the adequacy of the design of the facility and identifies structure, components and systems that are safety related items.
12	The arrangements for testing and commissioning safety related items.
Authorisation to possess or control a controlled facility	
13	The arrangements for maintaining criticality safety during loading, moving or storing nuclear fuel and other fissile materials at the controlled facility.
14	The arrangements for safe storage of controlled material and maintaining the controlled facility.
Authorisation to operate a controlled facility	
15	A description of the structures, components, systems and equipment of the controlled facility as they have been constructed.
16	A final safety analysis report that demonstrates the adequacy of the design of the controlled facility, and includes the results of commissioning tests.
17	The operational limits and conditions of the controlled facility.

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Item	Information
18	The arrangements for commissioning the controlled facility.
19	The arrangements for operating the controlled facility.
Authorisation for decommissioning a controlled facility	
20	The decommissioning plan for the controlled facility.
21	The schedule for decommissioning the controlled facility.
Authorisation for abandoning a controlled facility	
22	The results of decommissioning activities at the controlled facility.
23	Details of any environmental monitoring program proposed for the site.

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Part 2 Source licence

Item	General Information
1	The applicant's full name, position and business address.
2	A description of the purpose of the proposed source licence.
3	A detailed description of the dealing that is to be authorised by the source licence.
4	Plans and arrangements describing how the applicant proposes to manage the controlled material or apparatus to ensure the health and safety of people and the protection of the environment including the following information: (a) the applicant's arrangements for maintaining effective control of the controlled material or controlled apparatus; (b) the safety management plan for the controlled material or controlled apparatus; (c) the radiation protection plan for the controlled material or controlled apparatus; (d) the radioactive waste management plan for the controlled material or controlled apparatus; (e) the plan for ultimate disposal or transfer of the controlled material or controlled apparatus; (f) the security plan for the controlled material or controlled apparatus; (g) the emergency plan for the controlled material or controlled apparatus.
5	If the dealing involves a sealed source of a controlled material: (a) the nuclide, activity, chemical form, encapsulation material and physical form of the sealed source; and (b) the purpose and identification details of the sealed source; and (c) the place where the sealed source is located; and (d) a copy of any sealed source certificate for the sealed source.

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Item	General Information
6	If the dealing involves an unsealed source of a controlled material: (a) the nuclide, chemical form and physical form of the unsealed source; and (b) the purpose and identification details of the unsealed source; and (c) the maximum activity of each nuclide to be held on the premises at any 1 time; and (d) the place where the unsealed source is to be located.
7	If the dealing involves a controlled apparatus that produces ionizing radiation: (a) the purpose and identification details of the controlled apparatus; and (b) the maximum kilovoltage; and (c) the place where the controlled apparatus is used.
8	If the dealing involves a controlled apparatus that produces non-ionizing radiation: (a) the purpose and identification details of the controlled apparatus; and (b) the likely exposure levels including the nature of the radiation; and (c) all output parameters relevant to the likely exposure conditions; and (d) the place where the controlled apparatus is used.

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Schedule 4 Identity card

(regulation 64)

Australian Radiation Protection and Nuclear Safety Act 1998

This identifies *(name of inspector)*, whose photograph and signature appear below, as an inspector appointed by the CEO of the Australian Radiation Protection and Nuclear Safety Agency under subsection 62 (1) of the *Australian Radiation Protection and Nuclear Safety Act 1998*.

(*photograph*)

(*signature of inspector*)

(*signature of the CEO*)

Valid until (*date when appointment ceases*)

Dated

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Dictionary

(regulation 3)

absorbed dose means the energy absorbed per unit mass by matter from ionizing radiation that impinges upon it.

Note See Annex B to the *Recommendations for limiting exposure to ionizing radiation* (1995) (Guidance note [NOHSC:3022 (1995)]).

Act means the *Australian Radiation Protection and Nuclear Safety Act 1998*.

action level means an intervention level applied to exposure to radiation.

CEO see section 13 of the Act.

Code of Practice for the Disposal of Radioactive Waste by the User means the document of that title published in 1985 by the NHMRC as in force when these regulations commence.

Code of Practice for the Near-Surface Disposal of Radioactive Waste in Australia means the document of that title published in 1992 by the NHMRC as in force when these regulations commence.

Code of Practice for the Safe Transport of Radioactive Substances means the document of that title published in 1990 as in force when these regulations commence.

committed effective doses means the effective dose which a person is committed to receive from an intake of radioactive material.

Note See Annex B to the *Recommendations for limiting exposure to ionizing radiation* (1995) (Guidance note [NOHSC:3022 (1995)]).

Committee means the Radiation Health Committee or the Nuclear Safety Committee.

controlled apparatus see section 13 of the Act.

controlled facility see section 13 of the Act.

controlled material see section 13 of the Act.

controlled person see section 13 of the Act.

Council means the Radiation Health and Safety Advisory Council created by section 19 of the Act.

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deal with see section 13 of the Act.

dose includes absorbed dose, equivalent dose or effective dose.

Note See Annex B to the *Recommendations for limiting exposure to ionizing radiation* (1995) (Guidance note [NOHSC:3022 (1995)]).

effective dose means a measure of dose which takes into account both the type of radiation involved and the radiological sensitivities of the organs and tissues irradiated.

Note See Annex B to the *Recommendations for limiting exposure to ionizing radiation* (1995) (Guidance note [NOHSC:3022 (1995)]).

equivalent dose means a measure of dose in organs and tissues which takes into account the type of radiation involved.

Note See Annex B to the *Recommendations for limiting exposure to ionizing radiation* (1995) (Guidance note [NOHSC:3022 (1995)]).

excluded exposure, for the definition of ***occupational exposure***, means the component of exposure which arises from natural background radiation, provided that any relevant action level or levels for the workplace are not exceeded and that the CEO does not prohibit its exclusion.

exposure means the circumstance of being exposed to radiation.

external exposure means exposure to radiation from a source outside the human body.

ionizing radiation see section 13 of the Act.

irradiator means a device that contains a controlled material that gives controlled dose of radiation to any target material.

medical exposure means the exposure of a person to radiation received as a patient undergoing medical diagnosis or therapy, or as a volunteer in medical research, or non-occupational exposure received as a consequence of assisting an exposed patient.

modification see section 13 of the Act.

National Standard for Limiting Occupational Exposure to Ionizing Radiation means the document of that title published jointly by the NHMRC and NOHSC in the Radiation Health Series No. 39 in 1995 as in force when these regulations commence.

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NHMRC means the National Health and Medical Research Council established by section 6 of the *National Health and Medical Research Council Act 1992*.

NOHSC means the National Occupational Health and Safety Commission established by section 6 of the *National Occupational Health and Safety Commission Act 1985*.

non-ionizing radiation see section 13 of the Act.

Nuclear Safety Committee see section 25 of the Act.

occupational exposure means exposure of a person to radiation which occurs in the course of the person's work and which is not excluded exposure.

Occupational standard for exposure to ultraviolet radiation (1989) means the document of that title published in the Radiation Health Series No. 29 by the Australian Radiation Laboratory on behalf of the NHMRC in 1989 as in force when these regulations commence.

public exposure means the exposure of a person to radiation that is neither occupational nor medical exposure.

Radiation Health Committee see section 22 of the Act.

Recommendations for limiting exposure to ionizing radiation means the document of that title published as (1995) (Guidance Note [NOHSC:3022 (1995)]), as in force when these regulations commence.

relevant change, for regulations 51 and 52, means a change to:

(a) the details in the application for the licence; or

(b) a modification of the source or facility mentioned in the licence.

relevant period, for regulation 60, means:

(a) for a controlled person — 5 years; or

(b) for a member of the public — 1 year.

Remuneration Tribunal means the Remuneration Tribunal established by section 4 of the *Remuneration Tribunal Act 1973*.

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sealed source means:

(a) a source that is radioactive material permanently contained in a capsule or closely bound in a solid form; and

(b) the capsule or other material is strong enough to be leak-tight for both intended use and foreseeable abnormal events.

unsealed source means a source that is not a sealed source.

Note ARPANSA (the Australian Radiation Protection and Nuclear Safety Agency) is a part of the Minister's Department.

Note

1. Made by the Governor-General on 17 March 1999, and notified in the *Commonwealth of Australia Gazette* on 18 March 1999.

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