Radiation safety regulation in Victoria

Radiation Act 2005

VICTORIA State Government | Health and Human Services

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Contents

About the Department of Health & Human Services

The Department of Health and Human Services works to achieve the best health, wellbeing and safety for all Victorians so that they can lead a life they value.

On the 30th November 2020, the Victorian Government announced that the Department will be separated into two new departments to allow for a dedicated focus on our health system and on the social recovery of our state from the impact of the coronavirus (COVID-19) pandemic.

The new Department of Health (DoH) will commence operation from 1 February 2021 and it is likely that the administration of radiation safety activities will be part of this new department.

Radiation safety regulation across Australia

All Australian jurisdictions have specific laws to regulate radiation safety. Victoria has the *Radiation Act 2005*; South Australia has the *Radiation Protection and Control Act 1982;* the Commonwealth has the *Australian Radiation Protection and Nuclear Safety Act 1998, and so on.*

The jurisdiction of the Commonwealth extends only to any Commonwealth uses of radiation (e.g. Commonwealth agencies and departments such as CSIRO, ANSTO etc.). The Chief Executive Officer of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) also has a role to represent Australia internationally and to promote uniformity of radiation protection and nuclear safety policy and practices across jurisdictions of the Commonwealth, the States and the Territories.

The overwhelming majority of the places and circumstances where radiation is used are regulated by States and Territories.

National harmonisation

In August 1999 the (then) Australian Health Ministers' Conference (AHMC) endorsed the development of a National Directory for Radiation Protection (NDRP) as the means of achieving uniformity in radiation protection practices among jurisdictions. In particular, the Conference agreed that the NDRP would be prepared by the National Radiation Health Committee (RHC) of ARPANSA for approval by the Conference, via a process for issues resolution which included meeting the Council of Australian Governments' (COAG) requirements for national standard setting.

The AHMC agreed that upon consideration and approval of the provisions of the NDRP, the regulatory elements of the NDRP were to be adopted in each jurisdiction as soon as possible, using existing Commonwealth/State/Territory regulatory frameworks.

Edition 1 of the national directory was developed by the RHC and published in August 2004. It was subsequently endorsed by the AHMC as the uniform national framework for radiation protection in Australia.

Following publication of Edition 1, the RHC agreed that further progression of the national directory would be by individual amendments, and that the consolidated version would be maintained as an electronic document via ARPANSA's website.

Development of national standards

Almost all the detailed agreed regulatory requirements across Australia are underpinned by national standards and codes of practice developed through the ARPANSA-auspiced national Radiation Health Committee. In many cases, the development of these codes has been informed by publications of the International Atomic Energy Agency (IAEA).

Each of the national Codes of Practice published by ARPANSA undergoes a Commonwealth regulatory impact assessment process. This process involves an assessment of the costs and benefits and a public consultation phase.

The Codes are then assessed by this Committee and if endorsed are then submitted to the ARPANSA's Radiation Health and Safety Advisory Council which may then recommend to the Chief Executive Officer of ARPANSA that the Code be published.

Codes are also the subject of additional national governance arrangements for a decision on whether to amend the national directory to add a reference to the Code.

Each Australian jurisdiction has its own laws, institutions, and frameworks within which it manages radiation. The National Federation Reform Council (NFRC) provides a forum for governments to come together to tackle such matters. Since 2019, the Australian Health Protection Principal Committee (AHPPC) has provided oversight via the Standing Committee on Environmental Health (enHealth), which comprises officials from the Commonwealth, State and Territory governments.

Once added to the national directory, all jurisdictions have agreed to implement the Codes in their regulatory frameworks.

Background to the Victorian regulation of radiation safety

The first provisions in the Victorian law relating to radiation safety date back to approximately 1961 in the then Health Act, with radioactive substances being defined as a 'dangerous substance'.

Until approximately 1983/4, radiation safety was administered via the predecessors to the Department of Health & Human Services (Health Department Victoria and Health Commission Victoria) through the 'Occupational Hygiene Branch'.

From 1983/4, a specialist state-wide and centralised radiation safety team was created and continues to operate today.

The Victorian Radiation Act 2005 (the Act) commenced operation on 1 September 2007. It repealed parts of previous public health legislation relating to radiation safety.

The drafting of the Act was closely based upon the NDRP and therefore reflected the national agreements on the regulation of radiation safety. The Act is also consistent with the recommendations of the national competition policy review of the radiation protection legislation completed in 2001.

The authorising environment

The authorising environment for the department's work in this area exists in Victorian legislation:

- The Act and the *Radiation Regulations 2017* ('the regulations')

- *Emergency Management Act 1984*.
  The department is the incident controller for radiological incidents.

Radiation Act 2005

The purpose of the Act is to *'..... protect the health and safety of persons and the environment from the harmful effects of radiation.'*

This purpose of the Act means that the department, in administering the Act, considers risks to workers, patients, the public health, and the environment.

The Radiation Protection Principle

The Act is underpinned by the radiation protection principle which is:

*'that persons and the environment should be protected from unnecessary exposure to radiation through the processes of **justification, limitation and optimisation** where—*

(a) justification involves assessing whether the benefits of a radiation practice or the use of a radiation source outweigh the detriment;

(b) limitation involves setting radiation dose limits, or imposing other measures, so that the health risks to any person or the risk to the environment exposed to radiation are below levels considered unacceptable;

(c) optimisation—

(i) in relation to the conduct of a radiation practice, or the use of a radiation source, that may expose a person or the environment to ionising radiation, means keeping—

(A) the magnitude of individual doses of, or the number of people that may be exposed to, ionising radiation; or

(B) if the magnitude of individual doses, or the number of people that may be exposed, is uncertain, the likelihood of incurring exposures of ionising radiation—

as low as reasonably achievable taking into account economic, social and environmental factors;

ii) in relation to the conduct of a radiation practice, or the use of a radiation source, that may expose a person or the environment to non-ionising radiation, equates to cost-effectiveness.'

ALARA

A major part of contemporary radiation protection approach is specified under 'optimisation' in the definition of the Radiation Protection Principle in the Act as 'As Low As Reasonably Achievable' (known simply as 'ALARA').

The ALARA concept is based on the understanding that reducing radiation doses reduces risk, but it is more complex. It requires a consideration of the costs of technology on the one hand and the individual and social benefits derived from the use of technology on the other hand. The costs and benefits have economic, social, and environmental dimensions. These dimensions are difficult, potentially impossible, to quantify. Nonetheless, the result of an ALARA process is a radiation dose and a radiogenic cancer risk that are considered acceptable. If the radiation dose and radiogenic cancer risk are not acceptable, then more resources would need to be allocated to reduce the dose and risk further.

Importantly, ALARA could be local in its application. That is, the perception of risk and benefit arising from a radiation practice at one site might be different to the perception of risk and benefit arising from the same radiation practice at another site. Furthermore, the risk and benefit perceived by individuals and the society associated with the site of a radiation practice could be different to the risk and benefit

perceived by individuals and a society not associated with the site of a radiation practice. In this way, the ALARA determination recognises that the perception of a benefit by some might be different to the perception of a good by others.

ALARA must not be confused with the precautionary principle. The precautionary principle prevents or limits an activity until uncertainty in respect of potential risks has been resolved in favour of safety.

ALARA requires that risks and benefits are reserved at the same status and that the consideration of both matters does not give preference to one over the other. In this regard, the department permits radiation practices with radiation risks to people and the environment that have a greater benefit to society and the individuals concerned than the radiation detriment.

Licensing framework

The purpose of the Act is administered through the creation of a licensing framework backed up by a series of significant offences.

The licensing framework involves:

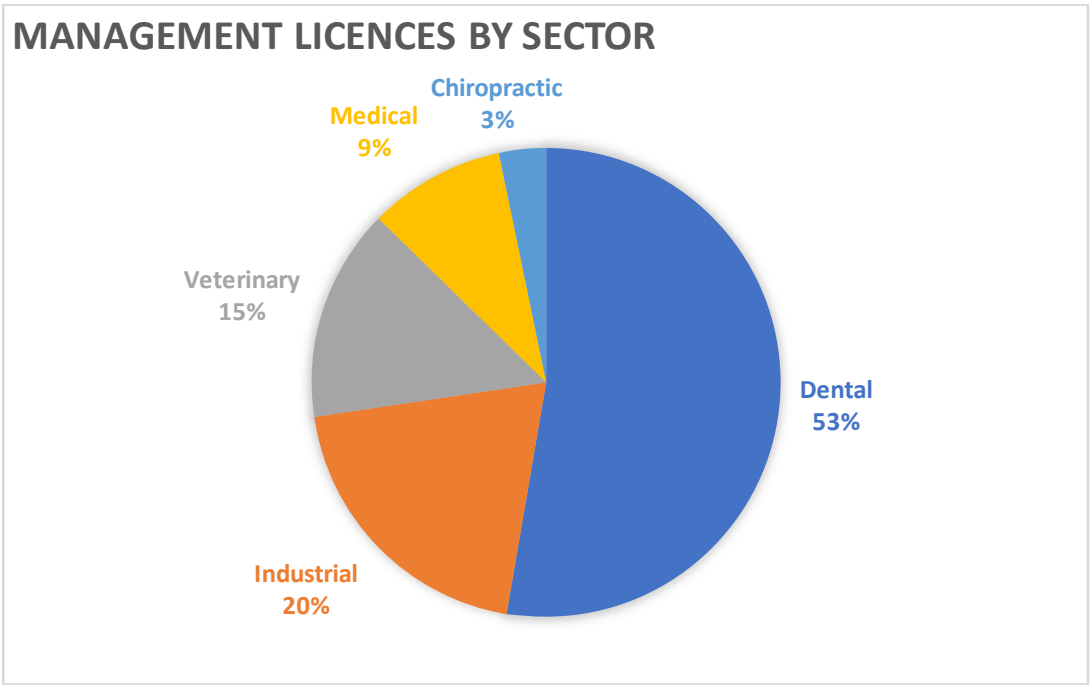
- Definition of a '**radiation source'** to be either an ionising radiation apparatus (e.g. a CT or other type of X-ray unit), radioactive material or a non-ionising radiation apparatus.
- '**Facility construction licences'** to authorise the construction of a prescribed radiation facility. The only facility type that has been prescribed to date are facilities proposed to house or store high consequence radioactive material. These licences do not authorise the possession of a radiation source and are more akin to an 'approval in principle' of a project.
- '**Management licences'** which authorise the conduct of a radiation practice. For example:
  - Possession of radiation sources (for example, X-ray units; CT scanners; radiopharmaceuticals as used in nuclear medicine; and radioactive sources used in industrial practices such as radiography of pipes or welds);
  - Transport of radioactive materials;
  - Sale of radiation sources;
  - Research involving the exposure of persons to ionising radiation;
  - Disposal of radiation sources;
  - Mining or processing of radioactive material;
- '**Use licences'** which authorise individuals to use a radiation source;
- '**Approved testers'** which authorise individuals to test medical diagnostic X-ray units against radiation safety standards. This authorisation enables the person to test the units and, where appropriate, to issue a certificate of compliance.
- 'Approved assessors' of security plans and transport security plans for high consequence radioactive material. This authorisation enables the person to assess the plans and, where appropriate, to issue a certificate of compliance.

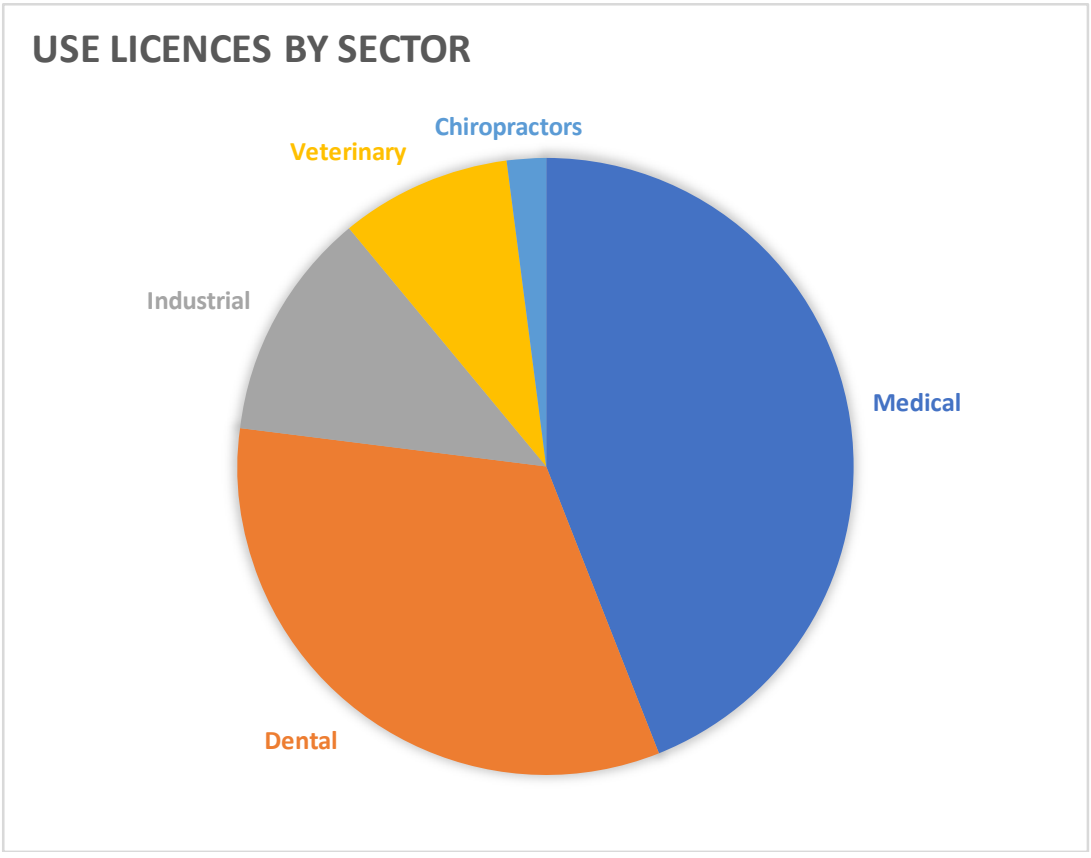
All licences issued by the department are issued subject to compliance with conditions of licence. Almost all conditions applied to either radiation management licences or radiation use licences relate to mandatory compliance with a national Code of Practice.

Radiation management licences are also issued with two general conditions. The first condition relates to mandatory reporting of incidents relating to the radiation practice. The second condition relates to the acquisition and disposal of radiation sources.

What sectors use radiation in Victoria?

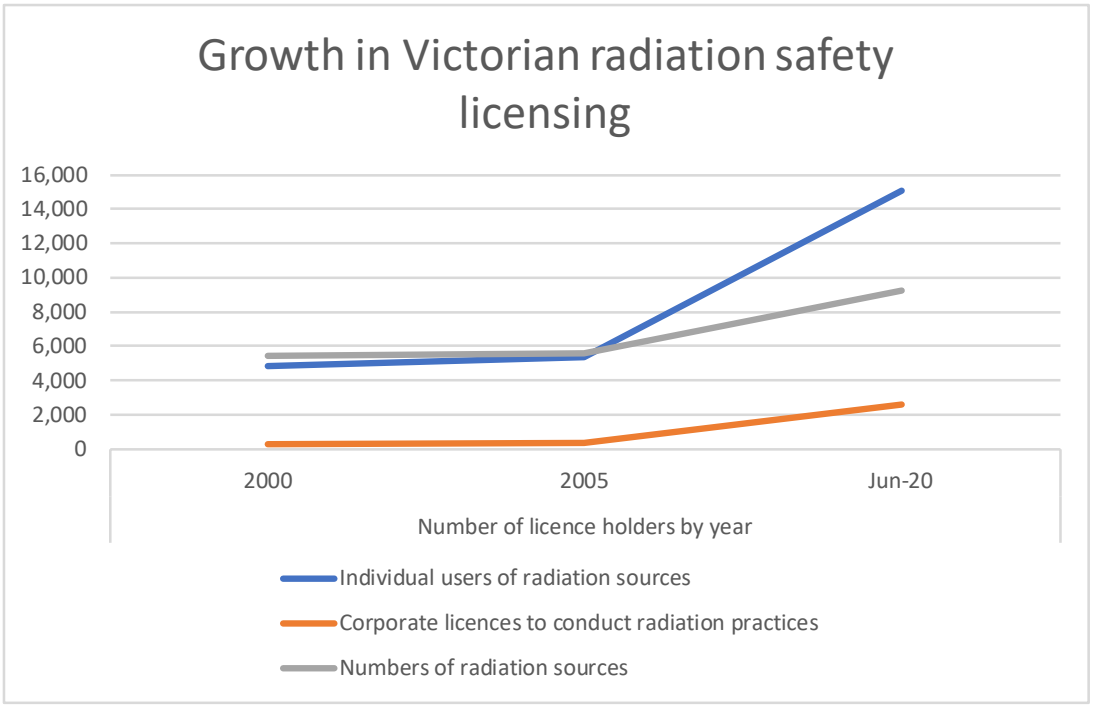
Graph 1





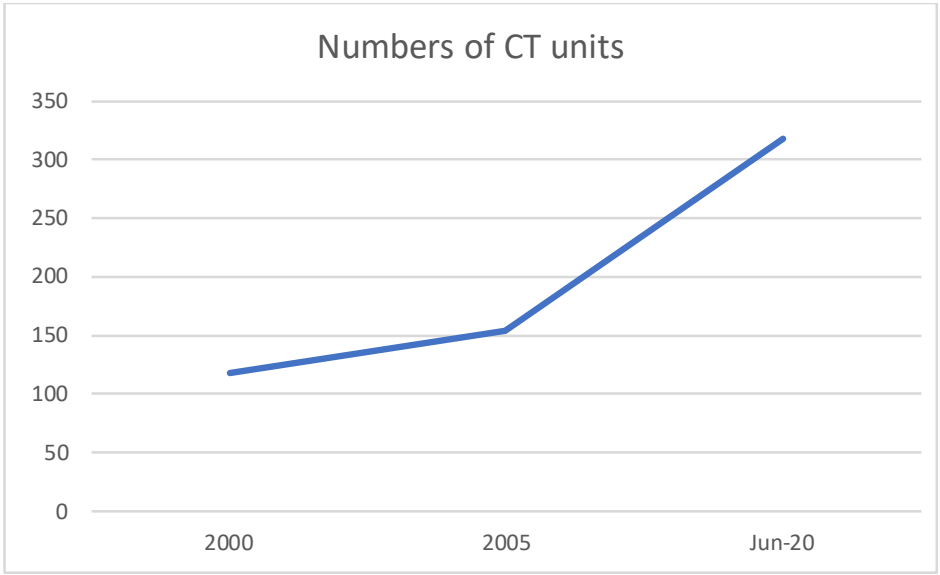
Growth in the use of radiation in Victoria

The numbers of radiation practices and users of radiation sources in Victoria has grown significantly over the last 20 years as illustrated by the following charts (Graph3 2 and 3).



Graph 2

Another indicator of the expansion in the use of radiation in Victoria is the growth in the number of medical diagnostic CT units used in health facilities across the state.



Graph 3

Licensing statistics

The numbers of licences at the end of the **2019/20** year the department had issued are shown in Table 1.

Measure	Numbers at 30 June 2019/20
Number of facility construction licences	1
Number of management licences authorising a body corporate or natural person to conduct a specifically described radiation practice	2,659
Number of management licences authorising possession of high consequence sealed sources	40
Sites where radiation practices are conducted (e.g. possession of a radiation source such as an X-ray unit or radioactive material)	3,988
Number of licensed users of radiation sources ('use licences')	15,082
Number of approved testers of medical diagnostic X-ray units authorised to issue certificates of compliance	44
Number of approved assessors of security plans and transport security plans authorised to issue certificates of compliance	9

Table 1: Licensing statistics 2019-20.

What is regulated?

The prime focus of the Radiation Act 2005 is **'ionising' radiation**. Ionising radiation is the energy produced from natural or artificial radiation sources and has enough energy to cause chemical changes by breaking chemical bonds (such as those found in DNA). This effect can cause damage to living tissue. In practice, we regulate the conduct of all types of radiation practices that involve the possession and use of ionising radiation sources (such as X-ray units and radioactive material).

Non-ionising radiation is found at the long wavelength end of the electromagnetic radiation spectrum and may have enough energy to excite molecules and atoms causing then to vibrate faster. This energy is very obvious in a microwave oven where the radiation causes water molecules to vibrate faster creating heat.

Non ionising radiation ranges from extremely low frequency radiation, the radiofrequency, microwave, and visible portions of the spectrum into the ultraviolet range.

Extremely low-frequency radiation has very long wavelengths (in the order of a thousand kilometres or more) and frequencies in the range of 100 hertz[1] or less. Radio frequencies have wavelengths of between 1 and 100 metres and frequencies in the range of 1 million to 100 million hertz. Microwaves that we use to heat food have wavelengths that are about 1 hundredth of a metre long and have frequencies of about 10 billion hertz.

The Act provides an authorising environment for the regulation of non-ionising radiation if prescribed by the Regulations. To date, the only non-ionising radiation source that has been regulated is the conduct of commercial tanning practices (often known as solariums) which was banned in Victoria in 2015.

[1] The hertz is the derived unit of frequency in the International System of Units and is defined as one cycle per second.

What is radioactive material?

The Act defines radioactive material to be –

‘*(a) any material that spontaneously emits ionising radiation that—*

(i) has an activity concentration equal to, or greater than, the amount prescribed by the regulations; and

(ii) consists of, or contains, an activity equal to, or greater than, the amount prescribed by the regulations; or

(b) any material that spontaneously emits ionising radiation that—

(i) has an activity concentration, or consists of, or contains, an activity, less than the amount prescribed by the regulations; and

(ii) occurs in prescribed circumstances—

but does not include—

(c) raw material with unmodified concentrations of radionuclides unless that material is prescribed by the regulations to be radioactive material;

(d) material that is—

(i) prescribed by the regulations not to be radioactive material; or

(ii) declared not to be radioactive material under section 4.’

Radioactive substances are atoms that decay naturally. They can give off alpha particles, beta particles, and gamma radiation. Unlike X-ray sources they cannot be turned off.

Alpha particles, because they are highly ionising, are unable to penetrate very far through matter and are brought to rest by a few centimetres of air or less than a tenth of a millimetre of biological tissue.

Beta particles are much less ionising than alpha particles and generally do less damage for a given amount of energy deposition. They typically have ranges of tens of centimetres in air (energy dependent) and a few millimetres in materials.

A gamma ray (g) is a packet of electromagnetic energy emitted by the nucleus of some radionuclides following radioactive decay. Gamma photons are the most energetic.

In practice, there are two main sources of radioactive material in use in Victoria. Most of the radioactive material used in Victoria has been created or enhanced in some way by technology e.g. the nuclear medicine used commonly in our hospitals. The other type is naturally occurring radioactive material. This material is commonly present in very low concentrations in the Earth's crust, and is brought to the surface through human activities including oil and gas exploration or mining.

Not all radioactive substances are actively regulated. An example of radioactive material that is declared not to be a radiation source is the radioactive material found in the commonly used domestic smoke detector. Domestic smoke detectors usually contain less than 40,000 Becquerels (Bq) of the isotope americium-241 and does not require regulation.

A becquerel is the international standard derived unit of radioactivity. One becquerel is defined as the activity of a quantity of radioactive material in which one nucleus decays per second. For applications relating to human health a becquerel is a small quantity, and international standard multiples of the unit are commonly used. For example, here are some of the commonly used units used in describing the radioactivity of radioactive material:

- ‘Kilo' (symbol 'k') stands for a factor of 1000

- ‘Mega’ (symbol ‘M’) stands for a factor of 1,000,000
- ‘Giga’ (symbol ‘G’) stands for a factor of 1,000,000,000
- ‘Tera’ (symbol ‘T’) stands for a factor of 1,000,000,000,000
- ‘Peta’ (symbol ‘P’) stands for a factor of 1, 000,000,000,000,000.

The activity concentration and activity of a material referred to in the Regulations that prescribes the material to be radioactive is for the purposes of Victorian law taken from the NDRP. A copy of the Radiation Regulations 2017 can be located at http://www.legislation.vic.gov.au

The levels in the NDRP are consistent with the levels specified by the International Atomic Energy Agency.

The radioactivity of a radioactive source can vary significantly. For example:

- A radioactive source used to sterilise items like surgical instruments typically has a radioactivity in excess of 50,000,000,000,000,000 Bq (50 PBq).
- A radioactive source used in industrial radiography for such things as looking at the integrity of welds in steel pipes or for checking for cracks in the panels of aircraft typically has a radioactivity of approximately 2,000,000,000,000 Bq (2 TBq).
- A radioactive source used to treat certain types of cancer typically has a radioactivity of 500,000,000,000 Bq (500 GBq).
- A radioactive source used to calibrate nuclear medicine imaging apparatus typically has a radioactivity ranging from 10,000,000 Bq to 740,000,000 Bq (10 MBq to 740 MBq).
- The heavy mineral concentrate that comes from the processing of an ore containing mineral sands typically has a radioactivity of approximately 10 Bq/gram.

Radiation Dose Limits

One of the key aspects of the way in which ionising radiation is regulated is that there are regulatory limits for the exposure of those who work with ionising radiation (‘occupational exposure limits’) and the public (‘public dose limits’).

Radiation dose limits are agreed internationally by the International Commission on Radiological Protection (ICRP). Australia generally moves to adopt those limits in national standards soon after and then they are included in jurisdictions’ laws.

In Victoria, the Act makes it an offence for a person when conducting a radiation practice to *‘…knowingly, recklessly or negligently cause another person to receive a radiation dose that is greater than the dose limit that is prescribed’* in the regulations.

The international unit for dose limits is the Sievert (Sv).

The occupational exposure limit is an effective dose of 20 milli Sievert (mSv) per year averaged over the five-year period. There are also higher limits which apply to the skin, hands and feet and the lens of an eye.

The public exposure limit is 1mSV per year. There are also higher limits which apply to skin and the lens of an eye.

What are the typical radiation doses that Australians receive?

Table 2 provides a comparison of the radiation doses that arise from some different types of radiation exposure.

Human's Exposure to Ionising Radiation	
Source of exposure	**Radiation dose**
One CT (computed tomography) scan to the chest	5 mSv
Cosmic radiation exposure of domestic airline pilot	2 mSv/year
Total natural radiation in Australia	**1.5 mSv/year**
Australian uranium mining workers	1 mSv/year
One return flight from Melbourne to London	0.11 mSv
One chest X-ray (2 views)	0.06 mSv
Nuclear fallout (from atmospheric tests in the 1950s and 1960s)	0.02 mSv/year

Table 2: Comparison of radiation doses.

Protection of the environment

Although the radiation dose limits referred to above specify limits in relation to occupational exposure and public exposure, these dose limits also create an environmental standard that defines the limits of human actions with respect to radiation exposure of the environment.

The dose limits do not either define an abrupt change in the nature or magnitude of the biological response to radiation or represent divisions between safe and unsafe.

Until recently, the two parameters that determine risk to a critical group of humans, radiation exposure and radiation effect, were the same parameters that determined risk to the environment. Therefore, the environment was considered to be protected if the radiation dose received by a critical group of humans in the particular environment does not exceed the radiation dose limits prescribed in the Regulations.

With regard to the transfer of radionuclides through the environment in planned exposure situations, the International Commission on Radiological Protection (ICRP) maintained the position that the standards of environmental control needed to protect the general public would ensure that other species were not placed at risk.

In 2015 ARPANSA published the Guide on Radiation Protection of the Environment. This guide was the direct result of changes to the ways in which the ICRP wanted to approach the question of radiation exposure to the environment.

Protection of the environment from the harmful effects of ionising radiation is an area that has evolved considerably over the last couple of decades. Increased awareness of the potential impact of human activities on the environment has grown and society has come to expect a better understanding of such effects, including possible harm to the environment caused by radiation. These expectations have led to the consideration that radiation protection of the environment has to be clearly demonstrated, while applying a graded approach which is commensurate with the radiation risks.

The approach relies upon the selection of representative flora and fauna and ensuring that they are not subject to significant radiation doses. As the worldwide database of radiation effects on flora and fauna is evolving, the methodological approach has been to mathematically represent flora and fauna to permit estimates of radiation doses to them various radiation exposure scenarios.

Transport of radioactive material

The transport of radioactive material must be authorised by a management licence. Licence holders are required to comply with the Transport Code which is itself closely based on an international regulation. The Code covers such things as placarding and the safe packaging of the material.

Disposal of radioactive material

All management licences issued by the department, permitting the disposal of radioactive material, include a condition that requires a management licence holder to meet specific requirements. Disposal in this context includes the transfer of ownership of the material or the relocation of the material out of Victoria.

The currently available methods of disposal of radioactive material are:

- the 'delay and decay' method (for short-lived unsealed radionuclides)
- disposal via export (for long-lived sealed sources)
- disposal to sewer (for short-lived unsealed radionuclides)
- disposal by release to air (for short-lived radionuclides)
- via transfer of ownership (for any radioactive material)
- via relocation outside Victoria (for any radioactive material).

Commercial tanning practices

Victoria first regulated commercial tanning (often known as a solarium) in 2008 through a management licensing system but in 2015 Victoria moved to ban the practice. Victoria has actively enforced the ban using the available enforcement tools which have included execution of search warrants, seizure of the tanning units and other evidence of contraventions and ultimately prosecution in the Magistrates Court.

How is radiation safety regulated in Victoria?

The department takes a comprehensive approach to the regulation of radiation safety in Victoria. This includes the authorisation of radiation practices and uses of radiation through a licensing system underpinned by a department-wide approach to regulation; regulator plans and a compliance and enforcement policy.

Authorisation of radiation practices and uses

As discussed earlier, the principal tool to regulate is via the legal requirement for companies and individuals to be authorised via a licence or other type of approval prior to undertaking activities involving radiation practices or uses of radiation sources.

Authorisations can only be obtained by lodging applications for the specific type of authorisation being sought e.g. to obtain a management licence to enable possession of a radiation source.

These applications are assessed by specialist staff within the department and then finally by a delegate of the Secretary of the department. Where appropriate, a licence or other type of approval is then issued to the applicant. All authorisations are issued subject to conditions. These conditions usually include the need to comply with at least one nationally agreed Code.

Some management licence conditions require regular reports to be lodged with the department whilst others require monitoring programs to be implemented. Radiation safety incidents are required to be reported to the department.

The applicant has review and appeal rights in relation to the decisions of the delegate to issue an authorisation with conditions, or where an application for an authorisation is refused by the delegate.

There are also specific requirements for certain types of radiation sources. For example:

- Most types of medical diagnostic X-ray units are required to be tested by an approved tester for compliance with radiation safety standards prior to use and then at regular intervals.
- The regulation of high consequence radioactive sources includes a security overlay which requires an approved assessor of security plans to assess the proposed security arrangements.

Specialist staff also undertake inspections to assess radiation safety standards and compliance with the conditions of the authorisation.

Better Regulatory Practice Framework

The department has developed a Better Regulatory Practice Framework. The purpose of the framework is to provide a clear focus on regulatory outcomes, demonstrate a risk-based approach to regulation, inform organisational improvement and improve engagement with stakeholders. This framework draws on better regulatory practice approaches from international, national, and state regulatory guidelines. The framework is available at:

https://www.dhhs.vic.gov.au/publications/better-regulatory-practice-framework

Regulator Plan

The department has also published a Regulator Plan for the regulation of radiation safety. This plan is available at:

<https://www.dhhs.vic.gov.au/publications/better-regulatory-practice-framework>

Compliance and Enforcement Policy

A Compliance and Enforcement Policy has been developed and will be published during 2021.

Offences

The Act establishes a number of significant offences. The Act establishes the maximum penalties, often with one set for a body corporate (e.g. a company) and a lower penalty for an individual. The penalties are automatically adjusted each year by a Treasurer's direction. The penalties shown reflect those set in the 2020/2021 year. Some of the key offences and corresponding penalties are:

- Section 12: Conducting a radiation practice without being appropriately licensed.
  The maximum penalty for a body corporate is 9000 penalty units (approximately $1,486,980) whilst the maximum penalty for an individual is 1800 penalty units (approximately $297,396).
- Section 13: Using a radiation source without being appropriately licensed.
  The maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 14: Constructing a radiation facility without an appropriate facility construction licence.
  The maximum penalty for a body corporate is 3000 penalty units (approximately $495,660) whilst the maximum penalty for an individual is 600 penalty units (approximately $99,132).

- Section 15(1): Non-compliance with the condition of a management licence.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 15(2): Non-compliance with the condition of a use licence
  The maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 15(3): Non-compliance with the condition of a facility construction licence.
  The maximum penalty for a body corporate is 3000 penalty units (approximately $495,660) whilst the maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 17: Persons must not falsely represent that they are licence holders.
  The maximum penalty for a body corporate is 300 penalty units (approximately $49,566) whilst the maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 18: Allowing persons who do not hold a use licence to use a radiation source.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 19: Allowing a use licence holder to use a radiation source in a manner not permitted by the licence.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 20: Failing to notify the Secretary of the loss or theft of a radiation source.
  The maximum penalty for a body corporate is 3000 penalty units (approximately $495,660) whilst the maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 21: Abandoning a radiation source.
  The maximum penalty for a body corporate is 9000 penalty units (approximately $1,486,980) whilst the maximum penalty for an individual is 1800 penalty units (approximately $).
- Section 22(1): In the course of conducting a radiation practice to cause another person to receive a higher radiation dose than is prescribed in regulations.
  The maximum penalty for a body corporate is 3000 penalty units (approximately $495,660) whilst the maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 22(2): In the course of using a radiation source to cause another person to receive a higher radiation dose than is prescribed in regulations.
  The maximum penalty for an individual is 240 penalty units (approximately $39,653).
- Section 23(1): In the course of conducting a radiation practice to cause serious harm to the environment.
  The maximum penalty for a body corporate is 9000 penalty units (approximately $1,486,980) whilst the maximum penalty for an individual is 1800 penalty units (approximately $297,396).
- Section 23(2): In the course of using a radiation source to cause serious harm to the environment.
  The maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 23A: Permitting the use of high consequence sealed sources by an unverified person.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 23B: Permitting the transport of high consequence sealed sources by an unverified person.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 23C: Permitting access to high consequence sealed sources by an unverified person.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).

- Section 23D: Conduct of a commercial tanning practice.
  The maximum penalty for a body corporate is 300 penalty units (approximately $49,566) whilst the maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 26: Approved testers must comply with conditions of tester's approval.
  The maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 27: Only approved testers who hold current testers' approvals may issue certificates of compliance.
  The maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 28: Offence to impersonate approved tester.
  The maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 35: Approved tester must not knowingly issue a certificate of compliance that is false.
  The maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 36: Allowing the use of a prescribed radiation source unless there is a current certificate of compliance for that source.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 36B: Approved assessor must comply with conditions of assessor's approval>
  The maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 36C: Only approved assessors who hold assessor's approvals that are in force may issue security compliance certificates.
  The maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 36D: Offence to impersonate approved assessor.
  The maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 36E: Approved assessor must not knowingly issue a security compliance certificate that is false.
  The maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 67D: Management licence holders who possess high consequence sealed sources must have approved security plans.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 67E: Approved security plan to be provided to Secretary.
  The maximum penalty for a body corporate is 300 penalty units (approximately $49,566) whilst the maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 67F: Review of approved security plans.
  The maximum penalty for a body corporate is 300 penalty units (approximately $49,566) whilst the maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 67I: Review of transport security plan.
  The maximum penalty for a body corporate is 300 penalty units (approximately $49,566) whilst the maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 67J: Transporting high consequence sealed sources without an approved transport security plan (Section 67J).
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 67M: Offence to fail to comply with security plan or transport security plan.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).

- Section 90B (1): Person must comply with improvement notice or prohibition notice.
  The maximum penalty for a body corporate is 600 penalty units (approximately $99,132) whilst the maximum penalty for an individual is 120 penalty units (approximately $19,826).
- Section 91: Offence to impersonate an authorised officer.
  The maximum penalty for an individual is 60 penalty units (approximately $9,913).
- Section 115: Tampering with radiation sources sealed by authorised officers.
  The maximum penalty for a body corporate is 3000 penalty units (approximately $495,660) whilst the maximum penalty for an individual is 600 penalty units (approximately $99,132).
- Section 116: False and misleading information.
  The maximum penalty for a body corporate is 6000 penalty units (approximately $991,320) whilst the maximum penalty for an individual is 1200 penalty units (approximately $198,264).
- Section 117: Offence to hinder or obstruct an authorised officer.
  The maximum penalty for an individual is 60 penalty units (approximately $9,913).

Our website

The Department maintains a comprehensive website about eh regulation of radiation safety in Victoria. It is located at: https://www2.health.vic.gov.au/public-health/radiation

Our staff

As at January 2021, the department has ten specialist radiation staff with training in areas such as physics, medical physics, health physics, radiography, and nuclear medicine. Staff have diverse backgrounds in hospital-based radiography and nuclear medicine, radiation safety consultancy, and radiation safety regulation.

These staff are supported by teams providing services such as licensee liaison, customer service, information technology, investigation and enforcement.

Emergency response

The department provides a 24/7 emergency response capability to respond to significant radiation incidents and is the Control Agency under Victoria's emergency management arrangements for radiation accidents, incidents and emergencies within Victoria.

Annual Report

The Department publishes an annual report of its activities. These are located at:

https://www2.health.vic.gov.au/public-health/radiation/radiation-regulatory-framework/radiation-act-annual-reports

Ministerial Radiation Advisory Committee

The Act establishes a Ministerial Advisory Committee with powers to consider items relating to radiation safety. The Team provides a Secretariat function to the Committee. The Committee meets every two months. This Secretariat function includes publishing an Annual Report. For more information see:

https://www2.health.vic.gov.au/public-health/radiation/radiation-regulatory-framework/radiation-laws/radiation-advisory-committee