Charles Sturt University

Radiation Management Plan

Booklet 3 - Legislation requirements

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1. Overview of the act and regulation

To maintain a Radiation Management Licence (RML) the University must comply with various regulatory requirements that govern the possession, use, and exposure of individuals and the environment to ionising radiation. As part of this, the University must ensure that all staff, students, and visitors at Charles Sturt University involved in the use of ionising radiation are aware and comply with the statutory and institutional requirements.

Legislation and Codes of Practice

In NSW all uses of radiation are governed by the Protection from Harmful Radiation Act 1990 No 13 (2023) and the Protection from Harmful Radiation Regulation 2013 (2023).

These are administered by the NSW Environment Protection Authority (EPA).

The Act allows for the adoption of documents forming part of the National Directory for Radiation Protection (via ARPANSA under the Federal ARPANS Act 1998). The following documents have been gazetted in NSW for such adoption and are relevant to this Radiation Management Plan:

- RPS 1 Recommendations for Limiting Exposure to Ionising Radiation
- RPS 5 Portable Density/Moisture Gauges containing Radioactive Sources
- RPS 6 National Directory of Radiation Protection
- RPS 8 Code of Practice for Exposure of Humans to Ionising Radiation for Research Purposes
- RPS 10 Radiation Protection in Dentistry
- RPS 11 Code of Practice for the Security of Radioactive Sources
- RPS 14 Code of Practice for Radiation Protection in the Medical Applications of Ionising Radiation
- RPS 17 Radiation Protection in Veterinary Medicine (not gazetted but being listed as condition of licence)
- In addition, the following three Safety Guides are available to assist in meeting the requirements of RPS 14
- RPS 14.1 Safety Guide for Radiation Protection in Diagnostic and Interventional Radiology

- RPS 14.2 Safety Guide for Radiation Protection in Nuclear Medicine
- RPS 14.3 Safety Guide for Radiation Protection in Radiotherapy

Additionally, federal legislation administered by the Australian Safeguards and Non-Proliferation Office (ASNO) has precedence over some items, e.g. uranyl products.

The Work Health and Safety Regulation, 2017 also contains a prohibition in relation to Radiation in **Schedule 10 Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals listed in Table 10.3 Restricted hazardous chemicals, as follows:**

Radioactive substance of any kind where the level of **radiation** exceeds 1 BBQ/g for abrasive blasting, so far as is reasonably practicable.

WHS Regulation 223 Lasers

(1) This clause applies to the person with management or control, at a workplace, of laser equipment that may create a risk to health and safety.
(2) The person must ensure that laser equipment intended for use on plant is designed, constructed and installed so as to prevent accidental irradiation of any person.
(3) The person must ensure that laser equipment on plant is protected so that any operator of the plant or other person is not exposed to direct **radiation**, **radiation** produced by reflection or diffusion or secondary **radiation**.
(4) The person must ensure that the visual equipment used for the observation or adjustment of laser equipment on plant does not create a risk to health or safety from laser rays.
(5) The person must ensure that the workers operating the laser equipment are trained in the proper operation of the equipment.
(6) The person must ensure that Class 3B and Class 4 lasers (within the meaning of AS 2397 2015 – *Safe use of lasers in the building and construction industry*) are not used in construction work.

2. Overview of Legislative Requirements and Guidelines Pertinent to Approval of a Radiation Safety Application

Charles Sturt University and the Radiation Safety Committee are committed to protect staff, students, visitors, general public and the environment from exposure to ionising and harmful non-ionising radiation exposure, while enabling the beneficial healthcare, research, and commercial use of radiation. Charles Sturt University holds a Radiation Management Licence (RML) with the Regulator in accordance with the requirements of the Protection from Harmful Radiation Act 1990 No. 13 (2023). The RML allows the university to possess, store, use, transfer or dispose of regulated materials. All activity involving ionising or harmful non-ionising radiation will require prior approval by the RSC to ensure we meet and comply with relevant legislative requirements and guidelines.

3. Overview of radiation management licence conditions

Any person carrying out work involving radiation apparatus or radioactive substances must hold a current user licence with the appropriate conditions, or has been issued with a general exemption approval in writing and is working under the direction and supervision of a person holding a current user licence with the appropriate conditions. The EPA issues such licences to suitably qualified persons and has the power to withdraw or withhold licences. A separate user licence condition is required for radiation apparatus and for radioactive substances. For NSW only a user who hold a General Approval to Exempt from Licensing Conditions (GE1) on their user licence are able to give approvals to specific categories of user to be exempt from requiring a radiation user licence.

Possession of a user licence implies responsibility of the licensee to ensure that the conditions of the user licence are met, that persons working under his/her supervision carry out their work in a safe manner in accordance with written conditions contained in the general exemption approval, and that the licensee complies with any local requirements so listed or detailed in the Radiation Management Plan, or imposed by the University RSC.

Failure to comply with the requirements of the Protection from Harmful Radiation Act 1990 No. 13 (2023) and its associated subordinate legislative documents such as the Protection from Harmful Radiation Regulation 2013 (2023) and licence conditions, can result in penalties in the form of fines, imprisonment, or both. These penalties are applicable to both individuals and the University.

Licence application forms can be downloaded or obtained from the NSW EPA website http://www.epa.nsw.gov.au/.

The Radiation Management Licence (RML) holder (the Vice Chancellor, delegated to the RSC) has the sole responsibility for the storage and disposal of all radioactive substances, uranyl salts, sealed source devices, and ionising equipment.

No holder of a user license can:

- Purchase, acquire by borrowing or trading or changing ownership of radiation (radioactive substance, sealed source devices, and ionising equipment).
- Organise, form, or control any storage facility for radiation
- Dispose of radiation (radioactive substance, sealed source devices, and ionising equipment).

4. Relevant codes of practice and standards

In NSW all uses of radiation are governed by the Protection from Radiation Act 1990 No. 13 (2023) and the Protection from Harmful Radiation Regulation 2013 (2023). These are administered by the NSW EPA.

The Act allows for the adoption of documents forming part of the National Directory for Radiation Protection (via ARPANSA under the Federal ARPANS Act 1998). The following documents have been gazetted in NSW for such adoption and are relevant to this Radiation Management Plan:

- RPS 1 Recommendations for Limiting Exposure to Ionising Radiation
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In addition, the following three Safety Guides are available to assist in meeting the requirements of RPS 14:

- RPS 14.1 Safety Guide for Radiation Protection in Diagnostic and Interventional Radiology
- RPS 14.2 Safety Guide for Radiation Protection in Nuclear Medicine
- RPS 14.3 Safety Guide for Radiation Protection in Radiotherapy

Additionally, federal legislation administered by the Australian Safeguards and Non-Proliferation Office (ASNO) has precedence on some items e.g. uranyl products.

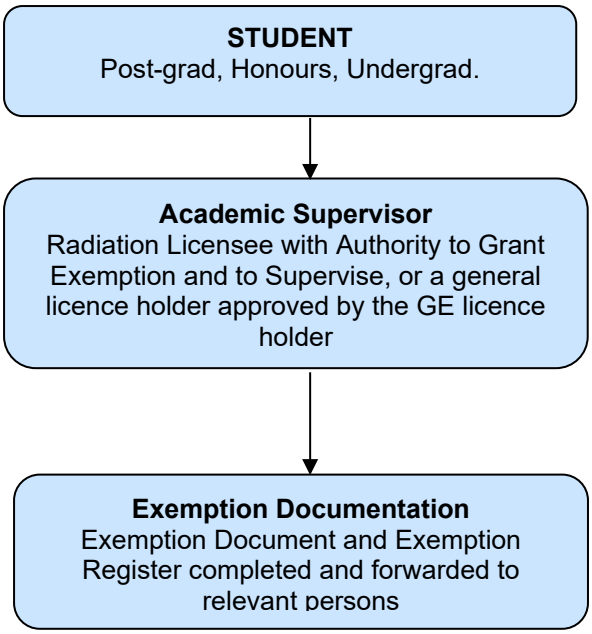
5. User licence requirements

Radiation user licences are renewable on either an annual or 3-yearly basis, and a copy of the renewed licence must be provided to the Radiation Monitoring Unit ,who maintain the University's records. Email a scanned copy of the user licence to radmon@csu.edu.au .

You may obtain details of licence conditions, general exemptions, and supervision requirements from the EPA, or contact the RSC by emailing radiationsafety@csu.edu.au if you need further details.

A radiation licence is not required for staff who are present when radiation apparatus or radioactive substances are used, but do not control the radiation exposure in any way. However, a staff member who holds a current user licence in the required discipline must be present, and supervising all activities.

5.1 Licence Exemption Procedures – Students Only



Note that a post grad student may holds a user licence, and not require an exemption

Requires exemption due to course or student research project requirements

Assesses requirement for exemption, ensures adequate radiation supervision by licensee with authority to supervise, and completes required documentation

For an Exemption to be granted the following needs to be ensured:

- ONLY STUDENTS, as deemed under Part 2, Clause 9 of the Protection from Harmful Radiation Act 1990 No. 13 (2023), may be granted an exemption by an appropriate licensee.
- The exemption must be in writing using the General Exemption template, which can be downloaded from the Forms and Resources page of the RSC Website: https://research.csu.edu.au/integrity-ethics-compliance/radiation/forms-templates-proformas
- The exemption document must specify the radioactive substances or irradiating apparatus.
- The exemption must set out the conditions to which the exemption is subject (i.e., the class or course, the designated radiation area (DRA) or laboratory in which the work must be done, the times during which the work is allowed, etc.)
- The exemption must identify each student, or class of students, to whom it relates.
- The exemption must identify the appropriately licensed person or persons who are to supervise each student, or class of students, to whom it relates.
- The exempting licensee must ensure that a copy of the exemption:
  - is supplied with any relevant radiation safety applications made to the RSC;
  - is given to each student to whom it relates, or is conspicuously displayed at each place in which the radioactive substances or irradiating apparatus to which the exemption relates are proposed to be used; and
  - is kept for the local records (School/Centre level).
- Exemptions must be reviewed and renewed annually.

Clarification and guidance regarding general exemption and user licencing can be sought by contacting the EPA, or contact the RSC by emailing radiationsafety@csu.edu.au. It should be noted that the guidance within the RMP pertains to NSW and that each state or territory have different requirements for radiation user licencing although there are some reciprocal recognitions between some states. Disciplines organising interstate work integrated learning (WIL) should consult the relevant EPA legislation for that state or territory and seek additional advice with the RSC where required.

6. Dose limits and dose constraints

6.1 Occupational Dose Limits

All staff, students and visitors at Charles Sturt University who are exposed to ionising radiation as part of their employment or studies are deemed to be occupationally exposed, and therefore are subject to radiation dose limits as defined in Schedule 5 of the Protection from Harmful Radiation Regulation 2013. Note that these limits apply to occupational and public exposure only, and not to exposures received as part of medical diagnosis or treatment.

6.2 Pregnancy and Age

If an occupationally exposed person declares a pregnancy, the embryo or foetus should be afforded the same level of protection as required for members of the public. This may be achieved by controlling the exposure of an employee who declares a pregnancy in a manner which ensures that doses received by the foetus during the remainder of the pregnancy while the employee is at work are no more than the public effective dose limit of 1 mSv per year (Schedule 5 of the Protection from Harmful Radiation Regulation 2013).

All occupationally exposed individuals are **strongly encouraged** to disclose their pregnancy at the earliest opportunity to assist in mitigating the known risks radiation may pose during pregnancy by controlling exposure and to ensure appropriate radiation dose monitoring is in place. All disclosures of pregnancy will be treated privately and confidentially.

Persons under the age of 16 should not be exposed to radiation occupationally and should be treated as members of the public for radiation protection purposes.

6.3 Dose Constraints

A dose constraint is usually set at a value lower than the corresponding dose limit and is used for planning purposes to ensure that the dose limit is not exceeded.

The EPA has specified the following design dose constraints when radiation shielding is being designed, assessed, or verified in Radiation Guideline 7:

- 100 µSvi (0.1 mSv) per week for occupationally exposed persons from all sources of radiation, and
- 20 µSvi (0.02 mSv) per week for members of the general public.