1. PURPOSE

The University of Melbourne Radiation Management Plan (Plan):

- supports the Health & Safety: Ionising radiation requirements;
- outlines the University systems and processes for establishing an effective dose limit for all ionising radiation practices and use of radiation sources to a total whole body exposure 1 mSv annually; and
- establishes the University systems and processes to comply with regulatory requirements.

2. SCOPE

The Plan applies to all staff, students and others that may be exposed to a radiation source and subsequent exposure as a result of the University’s:

- radiation practices; and
- use of radiation sources.

3. DEFINITIONS

Definitions are outlined in the Health & Safety: Ionising radiation requirements.

4. DOSE LIMITS

The University “dose limits” requirements are outlined in the Health & Safety: Ionising radiation requirements.

University dose limits have been set at a total whole body exposure to an effective dose of 1 mSv annually.

The nature of some radiation activities, such as diagnostic nuclear medicine, will expose staff to greater than 1 mSv annually. In these cases, the total whole body exposure must not exceed an effective dose of 50 mSv in a year and 100 mSv in 5 years.

5. RADIATION WEB SITE

The University “radiation web site” requirements are outlined in the Health & Safety: Ionising radiation requirements.

The content of the University Ionising Radiation web page includes:

- requirements processes and guidance materials
- committees and groups
- radiation safety certification program
- training
6. RADIATION SAFETY CONTACTS

The University “radiation safety contacts” requirements are outlined in the Health & Safety: Ionising radiation requirements.

The Associate Director, Health & Safety appointed radiation safety advisor (RSA) is determined by their training, skills and experience with regards to radiation.

<table>
<thead>
<tr>
<th>University of Melbourne Radiation Safety Advisor</th>
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<tr>
<td>Steve Guggenheimer</td>
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For initial ionising radiation enquiries contact radiation-info@unimelb.edu.au.

Each Head of School/Division, with the assistance of the RSA, shall appoint a departmental radiation safety officer (DRSO) determined by their training, skills and experience with regards to radiation.

Departmental Radiation Safety Officers

7. LICENSING

The University “licensing” requirements are outlined in the Health & Safety: Ionising radiation requirements.

7.1. Commonwealth Reporting

University “Commonwealth reporting” requirements are outlined in the Health & Safety: Ionising radiation requirements.

7.2. State Licensing

University “State Licensing” requirements are outlined in the Health & Safety: Ionising radiation requirements.

7.2.1. Management Licence

University “Management Licence” requirements are outlined in the Health & Safety: Ionising radiation requirements.

The Management Licence is divided into schedules that categorise radiation practices. The conditions for each radiation practice are determined in these schedules. The conditions include:

- publications issued by the Department of Health and Human Services (DHHS);
- publications issued by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) – Radiation Protection Series (RPS); and
- publications originally issued by the National Health and Research Council (NHRC) and under review by ARPANSA – Radiation Health Series (RHS).

The schedules and conditions are outlined in Health & Safety: Management licence schedules.
The conditions of the University Management Licence may alter from time to time based on:

- changes to radiation practices and use of radiation sources that require varying the licence;
- changes to legislation; or
- changes to instructions/conditions from the DHHS.

### 7.2.2. Use Licence

The University “Use Licence” requirements are outlined in the Health & Safety: Ionising radiation requirements. A School/Division Use Licence register must be maintained and include:

- the name of the Use Licence holder(s);
- the allowed radiation use; and
- the expiry date of the Use Licence.

Requirements for Use Licenses, including exemptions to hold a Use Licence are published by the DHHS at:


A radiation Use Licence public register is available on the DHHS web site at:

http://122.252.13.117/environment/use_licences.asp

### 8. RISK ASSESSMENT AND CONTROL

The University “risk assessment and control” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Hazard identification and risk analysis for ionising radiation activities must take into account the:

- ionising radiation properties of the radiation source including:
  - the type, energy and activity of the ionising radiation;
  - the dose rate of the ionising radiation; and
  - the route of exposure of the ionising radiation; and
- other hazards associated with the ionising radiation activity such as:
  - plant;
  - chemical;
  - manual handling; and
  - biological.

Risk assessment methodology for ionising radiation activities must include the requirements of the Health & Safety: Ionising radiation requirements.

9. STANDARD OPERATING PROCEDURE

The University “standard operating procedure” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Standard operating procedures (SOPs) for ionising radiation activities must take into account the:

- ionising radiation properties of the radiation source including:
  - the type, energy and activity of the ionising radiation;
  - the dose rate of the ionising radiation; and
  - the route of exposure of the ionising radiation; and
- other hazards associated with the ionising radiation activity such as:
  - plant;
  - chemical;
  - manual handling; and
  - biological.

The University Standard operating procedure form can be used to develop and record ionising radiation SOPs.

10. SHIELDING

The University “shielding” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Radiation shielding must be re-assessed when:

- the frequency of use of the radiation source changes; or
- the radiation source is upgraded; or
- the surrounding room occupancy is altered.

11. MONITORING

The University “monitoring” requirements are outlined in the Health & Safety: Ionising radiation requirements.

11.1. Personal Monitoring

The University “personal monitoring” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Staff and students who require personal monitoring will be provided with a personal monitor (normally optically stimulated luminescence [OSL]). The frequency for analyzing the OSL monitor will be determined by the ionising radiation activity but will not exceed every three months.

Personal monitoring results are analysed by a NATA accredited laboratory and forwarded to the relevant DRSO and RSA for review and retention in accordance with the Health & Safety: Management system documentation requirements.

11.2. Area Monitoring

The University “area monitoring” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Types of area monitoring include:
• **contamination monitoring:**
  completed by staff or students prior to, during and following activities that use radioactive materials, in particular open sources

• **area survey:**
  completed by the DRSO or RSA for radiation activities that use x-ray emitting apparatus

• **compliance testing:**
  completed by an authorised tester registered by the DHHS for radiation activities that use x-ray emitting apparatus on humans

Monitoring results for area surveys and compliance testing must be retained in accordance with the Health & Safety: Management system documentation requirements.

### 12. LABELLING, SIGNAGE AND STORAGE

The University “labelling, signage and storage” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Radioactive material must be clearly labelled with the following information:

- the radionuclide;
- the activity of the radioactive material;
- the date the activity was measured; and
- where applicable, the requirements of the Health & Safety: Chemical requirements.

Rooms containing radioactive material must be clearly signed at access points to the room and clearly display:

- the ionising radiation hazard symbol;
- the words, Caution Radioactive Material;
- the letters and symbol in black on a yellow background; and
- the requirements of the Health & Safety: Signage requirements.

Radiation apparatus must be clearly labelled with the following information:

- the ionising radiation hazard symbol; and
- the symbol in black on yellow background.

Rooms containing radiation apparatus must be clearly signed at access points to the room and clearly display:

- the ionising radiation hazard symbol and the written warning (x-ray unit in this area);
- the letters and symbol in black on yellow background; and
- the requirements of the Health & Safety: Signage requirements.
Storage of radiation sources must;

- display the ionising radiation hazard symbol (the symbol in black on yellow background); and
- restrict access to authorised staff and students.

13. **PURCHASING**

The University “purchasing” requirements are outlined in the Health & Safety: Purchasing requirements.

The University Management Licence number is held by the Associate Director, Health & Safety.

A Manager/supervisor who requires the University Management Licence number to purchase radiation sources must contact the Associate Director, Health & Safety or delegate. The Associate Director, Health & Safety or delegate will contact the manufacturer/supplier with regards to the University Management Licence number.

14. **INVENTORY**

The University “inventory” requirements are outlined in the Health & Safety: Ionising radiation requirements.

A radiation inventory records all radiation sources:

- radioactive material;
- radiation apparatus; or
- sealed source apparatus.

15. **TRAINING**

The University “training” requirements are outlined in the Health & Safety: Training requirements.

The purpose of the ionising radiation training is to ensure that all staff and students working with radiation sources:

- understand the radiation principles and radiation controls that will reduce personal radiation exposure; and
- understand the requirements of University relevant procedures.
- booking on-line through Themis.

Refer to Health & Safety Training web page for more details.

The Associate Director, Health & Safety shall ensure that the University of Melbourne Radiation Safety Advisor receives Advanced Radiation Safety Officer Training through the Australia Nuclear Science and Technology Organisation (ANTSO) or the equivalent.

16. **DISPOSAL AND WASTE MANAGEMENT**

The University “disposal and waste management” requirements are outlined in the Health & Safety: Ionising radiation requirements.

Radioactive material activity that falls below the limits defined in the Radiation Regulations 2017 (Vic) can be disposed of through the University hazardous waste collection service.
Where radioactive waste falls below the limits defined in the *Radiation Regulations 2017* (Vic) the waste is deemed to no longer be radioactive.

Staff and students disposing of waste, as described above, through on the [Hazard Waste](#) web site must:

- comply with [Health & Safety: Waste requirements](#);
- submit details of the waste including:
  - quantity (in kilos or litres);
  - number of containers; and
  - type of waste;
- clearly label the waste; and
- remove all radiation labels.

### 17. TRANSPORT

The University “transport” requirements are outlined in the [Health & Safety: Ionising radiation requirements](#).

**Labelling**

An excepted package must not be labelled with a radioactive transport label. An excepted package label must:

- include the words “radioactive material excepted package”; and
- include the United Nations dangerous goods number (UN) of the radioactive material.

**Packaging**

The packaging of the radioactive material must be:

- sturdy enough to be transported – the original packaging, where available, must be used;
- packed with absorbent material for open sources;
- sealed; and
- labelled with an excepted package label.

### 18. INCIDENTS REQUIRING NOTIFICATION

Radiological incidents that require notification to the DHHS are outlined on the DHHS web site:

- [Mandatory reporting of radiation incidents](#)

The University incidents requiring notification to the DHHS requirements are outlined in the [Health & Safety: Ionising radiation requirements](#).

### 19. EMERGENCY MANAGEMENT

The University “emergency management” requirements are outlined in the [Health & Safety: Ionising radiation requirements](#).

All ionising radiation emergency procedures must include the relevant emergency contact number(s) for the location where the emergency occurred.
20. LABORATORY CERTIFICATION

The University “laboratory certification” requirements are outlined in the Health & Safety: Ionising radiation requirements.

With regards to ionising radiation, laboratory certification is normally scheduled biennially and comprises of five categories:

- management;
- laboratory practices;
- training;
- incident reporting and emergency procedures; and
- details of the radiation source(s) in use.