1. Purpose and Objectives

This procedure defines University’s requirements for all radiation licensing, responsibilities, training and documentation, as applicable. Compliance with this procedure, specific radiation safety and protection plan, and safe operating procedures will assist in assuring radiation safety and also compliance with the Radiation Safety Act 1999.

It also states requirements for OHS risk management of radiation practices at UQ.

2. Definitions, Terms, Acronyms

**Act** – Radiation Safety Act 1999

**OHS** – Occupational Health and Safety

**Possession Licence Nominee** – The University has appointed the Chief Operating Officer as the accountable person for the radiation possession licence.

**Regulation** – Radiation Safety Regulation 2010

**RSO** - Radiation Safety Officer, for a radiation practice, means a person who holds a relevant certificate issued under the Act and who the possession licensee nominee has appointed as the radiation safety officer for the particular practice.

**RSPP** - Radiation Safety and Protection Plan is the risk management plan for a particular type of radiation practice. The relevant RSPP must be complied with by all users and other persons involved in the practice.

**URPA** - University Radiation Protection Adviser
3. Procedure Scope/Coverage

The Radiation Safety Act 1999 applies to all University work activities involving radiation apparatus, sealed sources and unsealed sources. While it covers Class 4 lasers that are designed for use on humans, it does not cover any other lasers; safe work activities for all other laser classes is governed by The Queensland Work Place Health and Safety Legislation (2011).

This Procedure outlines the legislative licensing requirements for the University’s teaching, research and operational activities that use radiation equipment, sealed sources and unsealed sources.

The responsibilities in the Procedure are relevant to the University’s range of Radiation Safety Protection Plans and will be referenced in the RSPPs.

The University’s UQ PPL 2.30.01 Occupational Health and Safety Risk Management Procedures must be applied to all radiation work practices.

4. Procedures Statement

Radiation protection and safety compliance at UQ is done in context of legislative compliance and OHS risk management.

The University OHS Division’s Radiation Protection Adviser and the local Radiation Safety Officer oversee application of the University’s UQ PPL 2.30.01 Occupational Health and Safety Risk Management Procedures.
5. Duties and Responsibilities of University Personnel

5.1 Possession Licence Nominee

The University is granted a Possession Licence under the Radiation Safety Act 1999. The University’s Possession Licence Nominee is responsible for ensuring compliance with both the legislation and specific licence conditions.

As Nominee, the Chief Operating Officer formally delegates Nominee responsibilities and relevant radiation work to Executive Deans, Directors of Institutes and Centres.

The delegation includes a stipulation that Heads of School are the signatory responsible for all radiation safety applications except for RSPP authorization. The Possession Licence Nominee is signatory for the RSPP authorization and requests for any changes to the possession licence.

The OHS Radiation Database is the tool used by the UQ radiation safety network to manage licensing compliance documents. The OHS Division oversees database use. It also specifies organisational arrangements that the University implements to further ensure safe radiation work.

The possession authority for radioactive sources (i.e. sealed and unsealed) and radiation apparatus (i.e. X-ray machines and class 4 lasers) has been granted to the University as a body corporate, with the administrative authority being the UQ Chief Operating Officer. Other possession licences may be granted for Schools, Centres or Institutes if necessary, where specific RSPPs for various practices need to be implemented by each School, Centre or Institute.

The UQ Possession Licence Nominee has responsibilities to set the conditions under which the radiation sources are used. The activities that enact the responsibilities are delegated to senior roles within the UQ management structure.

The Nominee responsibilities delegated to Executive Deans and Institute Directors are as follows:
• Implement a Radiation Safety and Protection Plan (RSPP) for the practice to be followed by all persons involved in carrying out the radiation practice.
• Appoint Radiation Safety Officers
• Apply for Approval to Acquire each radiation source or continuing to acquire unseal sources (if applicable)
• Ensure their radiation sources and the premises where they are used, or where radioactive substances are stored, comply with the relevant Radiation Safety Standards whenever the radiation practice is being carried out
• Apply for Approval to Relocate a radiation source to a place outside of Queensland’s jurisdiction
• Ensure the disposal of radioactive material in a manner consistent with their radiation safety and protection plan, and the concentration of radionuclides in the material is less than that prescribed in the Radiation Safety Regulation 2010
• Apply for an Approval to Dispose if the possession licensee wishes to dispose of radioactive material in excess of the disposal levels prescribed in the Regulation
• Ensure compliance with both the legislation and the licence conditions
• Oversee the Heads of School role as signatory for all radiation safety applications with the exception of RSPP authorization which would be done by the Nominee upon the advice of the Radiation Protection Adviser, or any proposed changes to the possession licence

5.2 Radiation Safety Officer

The Radiation Safety Act 1999 requires each possession licensee to appoint an appropriately qualified Radiation Safety Officer (RSO). The RSO advises the possession licensee about the radiation safety status of the practice and ways to remedy issues or improve safety. The RSO must hold a Radiation Safety Officer Certificate relevant to the radiation practice. Generally only one RSO is appointed for each particular practice or operating site, although an appropriate deputy should be available to act as RSO in the absence of the principal officer.

Be aware that “Practice” can also mean a particular procedure or class of work for which it might be desirable to have a specially appointed RSO.

The RSO is required to:
• Identify whether the licensee’s approved RSPP for the practice is being complied with and report to the possession licensee any contravention of the plan, recommending the activities to be taken to ensure compliance with the plan
• Identify and advise the possession licensee of ways of minimizing the radiation doses received by people from the radiation source
• Provide or arrange the provision of training
• Identify whether the applicable radiation safety standards for the radiation source and premises where the practice is being carried out are being complied with and report to the possession licensee any contravention of those standards and recommend the activities that need to be taken to ensure compliance with the standards
• Review the RSPP regularly to ensure its continued effectiveness and advise the possession licensee of the results of the review
• Keep the required records, e.g., radiation monitoring results, equipment maintenance, source shipments, waste management etc. Records should also be kept of the training given to workers in radiation safety
• Supervise the management of radioactive wastes and provide specialist advice and assistance where necessary to ensure safety, e.g. incident recovery and clean-up operations
• Report as needed to the Possession Licensee and the Director OHS Division (through University Radiation Protection Adviser) about any issues or changes that may affect the Possession Licence

The UQ OHS Radiation Protection Adviser (RPA) oversees the process for Radiation Safety Officer training, competencies and applications for RSO certification.

There may be additional duties of an RSO included in specific radiation safety and protection plans, such as:

• Users are appropriately licensed
• Assessment reports/compliance certificates in place
• All persons involved has completed training as indicated in the RSPPs
• All persons have access to the relevant RSPPs
5.3 Radiation Safety Officers’ Network

This is a formal network of UQ RSOs. The RPA consults, guides and informs the UQ Radiation Safety Officers’ network about regulatory, organisational and technical radiation matters at UQ.

The RSO network meets 2-4 times per year and is chaired by UQ RPA. RSOs are invited to contribute discussion items for the meeting. It also seeks supplementary presentations and input from RSOs and the OHS Senior Adviser. The RSO community provide secretariat duties as needed. And all the presentations, agenda and notes are retained on OHS Division shared drive.

5.4 Use Licensee

A Use Licence is required for any UQ staff member or student working with radioactive sources or equipment, unless a specific exemption is allowed for a particular radiation source (or practice) by the Regulation (Part 12 Exemptions). For example some sub-licensable sources, or those with significant engineering controls, may be used by unlicensed persons.

In general, only appropriately licensed persons, authorized by the possession licence, are permitted to use radiation sources. Staff with a use licence performing radiation work must comply with the RSPP for the practice in which they are working. They are also required to comply with any specific conditions attached to their licences.

Students learning to carry out a radiation practice may do so without a licence only while under the direct supervision and in the presence of a current licence holder. Where the practice involves irradiation of a human, a use licence must be obtained before beginning work.

The primary responsibilities of a use licensee are listed below:

- Ensure the radiation dose received by another person not higher than the limits prescribed in the Regulation and are as low are reasonably achievable
- Ensure health and safety of persons and the environment
- Abide by the conditions stated in their licences and in section 13 of the Regulation
- Ensure the therapeutic or diagnostic procedure prescribed by authorised persons, or under approved human ethics program
• Maintain accountability for radiation sources used under the possession licence authority and ensure the licensee is adequately informed of any issues that might affect radiation safety or of any actions needed to be taken to ensure compliance with the Plan or Regulation.

### 5.5 The UQ OHS Radiation Protection Adviser

The UQ OHS Radiation Protection Adviser (RPA) is the primary source of advice and expertise for radiation legislative, regulatory and scientific requirements, possession licence conditions, documentation and requirements, RSPPs, radiation project approvals, overall guidance for RSOs and theoretical and practical training for radiation users.

The RPA coordinates regulatory communications for licensing, authorities, certifications and reporting of regulatory issues such as incident notification.

The RPA provides overall guidance to various UQ managers and staff for enactment of tasks delegated by the Nominee.

The RPA reports quarterly to the Chief Operating Officer as the Nominee for the main UQ Possession Licence and to the nominees for any other Possession Licences about any issues or changes that may affect the Possession Licences.
6. Radiation Safety and Protection Plan

The Possession Licence Nominee is responsible for development and implementation of an RSPP for all radiation work under the licence. All aspects of legislative compliance, licensing and OHS risk management in this procedure must be applied and cross-referenced to RSPPs.

The RPA is responsible for both enacting and overseeing the enactment of the Nominee’s responsibilities for RSPPs.

RSPPs must demonstrate compliance, risk management and required safety measures of radiation practices through specification of:
- Access control arrangements
- Training program(s) to be undertaken
- How radiation sources are to be used
- How ancillary imaging equipment is to be used
- Quality control procedures to be undertaken
- Safety devices to be provided
- Personal protective equipment to be provided
- Personal monitoring devices to be provided
- Radiation monitoring equipment to be provided
- Register of procedures
- Information of radiographs/images
- Duration of procedure
- Review of safety measures to ensure effectiveness
- Procedures for emergencies and incidents including notifications, investigations and corrective actions.

7. Radiation Safety Training

UQ staff or students who intend to apply for a use licence must complete both theory and practical training in radiation safety relevant to the planned work. The OHS Division offers Radiation Safety with Unsealed Sources training both introductory and practical sessions. UQ also provides X-Ray Safety Training for analytical X-ray equipment. Complementary, work specific practical training is also provided by the local RSOs or appropriately experienced researchers who hold use licences. Upon completion of both theoretical and practical training, a competency letter should be provided by the trainer to support the use licence application.
All other radiation training (eg Laser, diagnostic X-ray equipment) must be outlined/referenced in the RSPP and must be specific to the practice being conducted.

8. Incident Reporting

A written incident report is to be produced by the Radiation Safety Officer and submitted through the University to the Radiation Health Unit, Queensland Health within 7 days of the occurrence of all incidents or events involving laser apparatus.

This report will include:

- incident description
- details of the laser apparatus involved, including the condition of the equipment immediately after the incident
- a list of equipment in use during the procedure with appropriate identification information
- the date, location and time of the incident
- the details of the experience of the injured person
- apparent contributing factors to the incident
- the obvious or suspected nature of any injury sustained by the person
- action taken; and
- proposals to prevent a recurrence

However, the following events are to be immediately reported to the Chief Executive of Queensland Health by the Director of UQ OHS Division:

- lost or stolen radiation sources
- injury
- incident not described in the RSPP (i.e. malfunction of radiation apparatus)