Radiation Safety Procedure

Section 1 - Purpose

(1) Charles Sturt University (the University) recognises its duty of care to all persons in its workplaces, including staff, students, contractors, volunteers and other visitors. This document sets out the University's procedures for the management of radiation and radiation safety and intends to ensure compliance with the University's obligations under the Protection from Harmful Radiation Act (the Act), the Protection from Harmful Radiation Regulation 2013 (the Regulation) and relevant codes of practice.

(2) The objectives of this procedure are:

a. to secure the protection of persons and the environment from exposure to ionising and harmful non-ionising radiation to the maximum extent that is reasonably practicable
b. to protect security enhanced sources from misuse that may result in harm to people or the environment
c. to promote the radiation protection principles, and
d. to reference all procedures and other instruments used by the University to manage and oversee the safe use of radioactive materials, irradiating apparatus and radiation facilities used in teaching, research or clinics.

Scope

(3) This procedure includes regulatory compliance requirements and is overseen by the Radiation Safety Committee (RSC). Specific procedures and information relating to activities involving radiation can be found as associated information to this procedure and on the Radiation Safety website.

(4) This procedure applies to any persons associated with the University who use or support the use of:

a. radioactive materials
b. irradiating apparatus
c. high powered laser devices (class 3b or class 4), or
d. radiation facilities.

(5) These persons may include:

a. staff
b. students
c. clients or patients of clinics or enterprises
d. research participants
e. contractors and maintenance persons
f. anyone who may be subjected to radiation exposure while involved with university-approved activities, and
g. other visitors to the University.

Section 2 - Policy

(6) This procedure supports the Research Policy.

Section 3 - Procedures

Part A - Radiation protection principles

(7) The University is obliged to follow these radiation protection principles:

a. Justification of a practice - by assessing that the benefits of the practice involving exposure to ionising radiation outweigh any detriment.
b. Optimisation of protection – by ensuring that each of the following is kept as low as reasonably achievable taking into account economic and social factors:
    i. the magnitude of individual doses of ionising radiation
    ii. the number of people exposed to ionising radiation, and
    iii. the likelihood of exposure to ionising radiation.
c. Dose and risk limitation — by setting dose limits or imposing other measures so that the health risks to any person exposed to ionising radiation is kept below levels that are generally considered to be unacceptable.

Part B - Radiation Safety Committee approval

(8) To justify exposure to ionising radiation all activities, research projects and teaching subjects involving radiation conducted at the University must have written approval from the Radiation Safety Committee (RSC) before work can commence if they involve:

a. radioactive substances
b. irradiating apparatus, or
c. high powered laser devices (class 3b or class 4).

(9) The Research Integrity Unit maintains a suite of guidance information and committee documentation to be used by all applicants to discharge a responsibility under this procedure. Refer to the Radiation Safety webpages for further information.

(10) Each application must be completed and submitted by the chief instructor or chief investigator who is responsible for ensuring the compliance of a research project, teaching subject, procurement activity or disposal process.

(11) The chief instructor/investigator is either:

a. the lead researcher who is a University staff member
b. principal or co-principal supervisor of a student researcher, or
c. the Subject Coordinator for teaching proposals.

(12) The chief instructor/investigator is not permitted to be a student.

(13) The chief instructor/investigator is responsible for:

a. making required reports to the RSC, including annual reports, incident reports and end-of-project reports, and
b. keeping the RSC project approval current, including applying for variations as required especially in relation to

personnel involved in the project and project methodology.

(14) For acquisition and disposal applications, the applicant must hold a radiation user licence holder and work in the relevant facility.

(15) Research or teaching involving radiation cannot commence without written approval from the RSC.

Research proposals

(16) Research proposals:

a. must include at least one radiation licence holder in the research team
b. are usually approved for the intended duration of the study but cannot be approved (or extended) for a period longer than five years, and
c. must include evidence of completion of elearning modules for research integrity and radiation safety for all research team members.

Teaching proposals

(17) Teaching proposals:

a. must include at least one radiation licence holder in the teaching team
b. can be approved for recurrent delivery for up to three years providing that, at the commencement of each teaching period, the chief instructor provides such documentation as necessary to ensure the currency of the teaching project approval, and
c. must include evidence of completion of elearning modules for radiation safety for all teaching team members.

Acquisition, disposal and relocation of substances and apparatus

(18) All acquisitions and disposals of irradiating apparatus, radioactive substances or high powered laser devices must have written approval from the RSC before procurement, disposal or relocation can commence. These requirements apply to the purchase, loan, or any other means of acquisition for relevant materials that will be used or stored at the University.

(19) Receipt of a substance or apparatus must be reported to the RSC via an arrival notice.

(20) The relocation of a substance or apparatus must be notified to the RSC via a ‘Transfer of Irradiating Apparatus or Radioactive Substance’ form.

Permit to work (radiation facilities)

(21) Maintenance of irradiating apparatus or radiation facilities must be performed by suitably qualified and trained persons.

(22) Maintenance staff and contractors must be inducted to the radiation facility as per the Faculty of Science and Health induction local procedures, and adhere to the University's Contractor and Visitor Safety Management Procedure before entering the facility to undertake any form of work on or in the facility.

(23) A member of the RSC must authorise any work required on irradiating apparatus or fittings and fixtures directly involved in radiation work (such as those that have direct contact with radioactive substances, e.g. sinks, plumbing or potentially contaminated surfaces). Before any work can commence, a member of the RSC must determine that:

a. irradiating apparatus is safe for the proposed work or locked off where applicable

b. substances are shielded, and
c. any radioactive contamination has been removed.

(24) Faculty staff must submit a ‘Clearance for Maintenance Work’ form to the RSC and receive authorisation prior to any maintenance work commencing.

(25) Facility staff must keep the approved clearance form in their facility records.

(26) Once work is complete, the signed clearance form is to be forwarded to the Research Integrity Unit for record retention.

Part C - Identifying radiation workers

Staff

(27) All staff who work with ionising radiation in any capacity will:

a. be identified as a radiation worker (with ‘radiation worker’ noted on the employee’s record within the human resource information system)
b. be enrolled in the relevant induction training
c. be issued a personal monitoring device that they must wear at any time there is the possibility of exposure to radiation
d. adhere to relevant legislative and institutional requirements regarding radiation safety and monitoring
e. have personal radiation exposure records kept, and
f. be provided with a copy of personal exposure records upon exit from the organisation on request or when exposure levels exceed set thresholds.

(28) At the commencement of employment, Heads of School (and equivalents), clinic directors and technical managers must:

a. identify radiation workers to ensure employment records are updated, personal monitoring devices issued and appropriate records kept
b. advise Division of People and Culture (DPC) via email (dpc@csu.edu.au) the names and staff numbers of persons identified as radiation workers to ensure a ‘radiation worker’ note is added to their personnel file
c. advise the FOSH Technical Support Unit of any commencing radiation workers via the Radiation Monitoring email (radmon@csu.edu.au), and
d. ensure radiation workers are enrolled in the required training program (see Part D).

(29) Heads of School (and equivalents), clinic directors and technical managers must advise DPC and the radiation monitoring team of any change in status of a radiation worker. This includes advice of a person ceasing to be a radiation worker.

(30) The FOSH Technical Support Unit will:

a. maintain a register of radiation workers, and
b. place quarterly posts on the University What’s New bulletin (and email Heads of School (and equivalents), centre directors and technical managers) with the information contained in the previous three clauses, and informing all staff that if they work with radiation they need to contact Radiation Monitoring (radmon@csu.edu.au) immediately to arrange a personal monitoring device if they have not already been issued with one for the current wear period.

(31) DPC will:

a. add an occupancy condition of ‘radiation worker’ on the personnel file of any staff member identified as a radiation worker. The condition will be based on the occupancy (person), not the position, unless the position description for the role specifically indicates designation as a radiation worker, and
b. enrol the staff member in the Radiation General Induction ELMO module (staff will be notified by automatic email that they must complete the module).

Students

(32) All students involved in work with ionising radiation or enrolled in a radiation subject will:

a. be identified as a radiation worker (student)
b. be enrolled in the relevant training (refer to Part D)
c. complete radiation induction training before commencing any work with radiation
d. be issued a personal monitoring device that they must wear at any time there is the possibility of exposure to radiation
e. adhere to relevant legislative and institutional requirements regarding radiation safety and monitoring
f. have personal radiation exposure records kept, and
g. be provided with a copy of personal exposure records on request or when exposure levels exceed set thresholds.

Students – coursework

(33) The FOSH Subjects team will identify subjects where radiation exposure may occur as part of the education activities (including work-integrated learning subjects). The RSC will maintain a list of these subjects and audit them to ensure all coursework or placements involving radiation work have RSC approval. Approved subjects will be referred to as ‘radiation subjects’.

(34) The FOSH Technical Support Unit will generate (or request from the Division of Student Experience) an up-to-date listing of all students currently enrolled in one or more radiation subjects using the Radiation Monitoring email (radmon@csu.edu.au). This listing is to be provided regularly and at minimum:

a. at the commencement of the teaching period
b. after census and include names of students who have withdrawn from the subject, and
c. at the end of the teaching period and detail all students who have graduated or withdrawn from the course after census.

(35) The FOSH Technical Support Unit will ensure all students enrolled in radiation subjects are provided with a personal monitoring device prior to any activity involving potential radiation exposure.

(36) Subject Coordinators of subjects involving the use of ionising radiation will advise the FOSH Technical Support Unit of any students who withdraw from the subject or take a leave of absence following the census date, using the Radiation Monitoring email (radmon@csu.edu.au).

(37) The FOSH Technical Support Unit will deactivate personal monitoring devices for students who have withdrawn, been excluded or taken a leave of absence and will request the return of the devices.

(38) If a device is not returned on request, the student may be invoiced for the cost of the device.

Students - research

(39) Students involved in research projects who do not already have a personal monitoring device must apply for and be issued a device (via radmon@csu.edu.au) before commencing any work involving radiation.

Visitors

(40) All visitors to the University who are planning to work with radiation must seek the approval of the RSC, and then bring and wear their own personal monitoring device before commencing any radiation work. Visitors who cannot supply their own personal monitoring device must contact the Radiation Monitoring team (radmon@csu.edu.au) at least 30 days before commencing radiation work to arrange a personal monitoring device for use.

(41) Enquiries about the required permissions should be directed to the Radiation Safety Committee (email RadiationSafety@csu.edu.au).

Part D - Training and induction

(42) Radiation safety training must be completed before undertaking any radiation-related work and must be recompleted at least every three years.

(43) Training must be completed by:

a. staff members identified as radiation workers
b. all teaching staff listed on teaching proposals for radiation subjects
c. all research team members (staff or student) listed on research proposals
d. staff working in radiation areas, including those who work with radiation who aren't defined as radiation workers under the Regulation (e.g. dentistry staff only conducting intraoral x-rays, or technical staff supporting radiation work), and
e. students enrolled in radiation subjects (including work-integrated learning placement subjects) immediately after census date of each session.

(44) Radiation general induction training is delivered for staff via an elearning module through the University's ELMO training platform.

(45) DPC are responsible for advising the learning and development team of new radiation workers so they can be enrolled in training at the system level.

(46) Other staff members can request enrolment via elmo@csu.edu.au, or self-enrol through the ELMO dashboard.

(47) Staff members should download and retain a copy of their completion certificate to include with any project applications to the RSC.

(48) Student training is delivered via an elearning module through the student learning management system. Students can access the radiation general induction module via the Work Safety and Health Student Online Training page.

(49) Students should download and retain a copy of their proof of training to include with any radiation safety related research project application they are named on.

(50) The RSC will review staff completion of the radiation general induction at each meeting and will identify mechanisms and corrective actions to promote completion of the training module.

(51) Student completion of radiation general induction will be reviewed annually during faculty audits.

Part E - Personal monitoring devices

(52) The University must monitor and record cumulative doses of ionising radiation received by all radiation workers in their employ.

(53) Personal monitoring devices that detect and measure exposure to ionising radiation are issued to those who are involved in any one or more of the following purposes:

a. radiation therapy
b. industrial radiography
c. nuclear medicine
d. veterinary radiography
e. scientific research in laboratories classified as medium level laboratories or high level laboratories where radioactive substances that are not contained in sealed sources are used
f. diagnostic or interventional radiology (other than dentistry, veterinary and chiropractic applications),
g. neutron based detection, analysis and gauging (only when used in bore-hole logging)
h. servicing of ionising radiation apparatus or devices containing radioactive substances, and
i. any other purposes where the RSC determines the wearing of a personal monitoring device is appropriate, including:
    i. dentistry staff who operate any apparatus that requires a Radiation User Licence, including Cone Beam Computed Tomography (Cone Beam CT) and Orthopantomogram (OPG).

(54) A radiation worker must wear their provided personal monitoring device during any activities involving ionising radiation and in any area where a radiation warning sign is displayed.

Management of personal monitoring devices

(55) The FOSH Technical Support Unit will administer the provision of personal monitoring devices for the University, with oversight of approved processes by the Radiation Safety Committee (RSC) to ensure compliance with current legislation.

(56) The Technical Support Unit will assign a technical officer who will be responsible for the day to day management of the personal monitoring devices. The technical officer will:

a. collect and collate all staff and student information relating to the management of the personal monitoring devices
b. provide collated data and order requirements to the University's personal monitoring device service provider using the web portal or supplied software to ensure the receipt of the personal monitoring devices in required timeframes
c. arrange the distribution of the personal monitoring devices to radiation workers
d. arrange the collection of the personal monitoring devices from radiation workers and forward to the service provider for analysis, including all control devices as applicable
e. maintain the personal radiation monitoring devices database, and
f. maintain the Radiation Monitoring email address (radmon@csu.edu.au) and process enquiries received.

Issuing of personal monitoring devices

(57) The ‘PMD issue and return schedule’ can be viewed on the Radiation Safety website.

(58) When issuing a personal monitoring device, the Technical Support Unit will advise staff and students of the issue and return schedule, arrangements for collection and return of the device, and contact details for support.

Lost, non-returned or damaged personal monitoring devices

(59) The radiation worker or student must return the personal monitoring device in good condition and within the required timeframes.

(60) Wearers must report a lost personal monitoring device as soon as practicable to the Radiation Monitoring email (radmon@csu.edu.au) and lodge an incident report via the online incident reporting system. Subsequent investigation may be undertaken.

(61) The radiation worker or student must not participate in any activities involving radiation until a new personal monitoring device has been issued and received. This prohibition also applies to students on work-integrated learning placement.

(62) A fee will be charged for the loss, non-return or damage of the personal monitoring device.

Return of personal monitoring devices prior to graduation

(63) Students must return all personal monitoring devices or report them as missing before the end of their final teaching period or a fee may be charged. Fees must be paid in full or the personal monitoring device returned before the student is eligible to graduate.

(64) The Radiation Monitoring team will:

a. approximately one month before on-campus classes end, confirm potential graduands with relevant Course Director, placement coordinator or discipline lead
b. three weeks before on-campus classes end, email students with instructions for returning their personal monitoring device(s) by the required dates or reporting any lost devices (including associated fees)
c. during exam period, collect and record returned personal monitoring devices
d. at the beginning of the second week of exam period, follow up on any outstanding devices, and
e. at the beginning of the week after examinations end, charge student accounts for devices:
    i. not returned
    ii. reported as lost
    iii. where no tracking information has been provided, or
    iv. where no other contact has been made by the student regarding the return of their device(s).

(65) Students who have completed their course requirements and finished their final placement must return all personal monitoring devices on the first business day after their placement or other practical course work ends. This can be done in one of the following ways:

a. Return the device to a Charles Sturt University campus in person:
    i. Hand it to the designated staff member listed on the PMD issue and return schedule.
    ii. Place in the designated personal monitoring device return box.
b. Return via express post or courier advising the consignment number and carrier information to radmon@csu.edu.au.

(66) Students with outstanding debts to the University cannot receive their grades or graduate.

(67) Students must contact radmon@csu.edu.au as soon as possible if they become aware of any delays or issues with

the return of their personal monitoring device.

Multiple devices

(68) A personal monitoring device issued by the University will be considered a primary device and must be worn for all university radiation-related activities.

(69) A University issued personal monitoring device must not be used for non-University purposes. The radiation worker must arrange their own personal monitoring for outside activities.

(70) A staff member may be issued with a personal monitoring device by another organisation for use with approved University consultancies. It is the responsibility of the wearer to track collated doses for multiple devices.

(71) Where a person is issued with multiple personal monitoring devices (e.g. for convenient access at multiple sites/campuses), collated doses received by multiple devices will be tracked by the University.

Part F - Personal radiation exposure records

(72) The University is required to keep a personal radiation exposure record for each radiation worker issued with a personal monitoring device. The radiation exposure record must detail:

a. the amount of radiation to which the person has been exposed as measured by the device, and
b. the results of any tests the University has carried out to determine the amount of radiation the person has been exposed to.

(73) When a radiation worker or student is set up in the system and issued with a personal monitoring device, all details listed under clause 30 of the Protection from Harmful Radiation Regulation 2013 are required. The FOSH Technical Support Unit will collect and enter these details. Personal information will be dealt with in accordance with the University's Privacy Management Plan. The exposure record must contain the following particulars:

a. the full name, gender, date of birth, staff/student ID number, position title and email address of the occupationally exposed person
b. the current home address of the occupationally exposed person or, if the person is no longer employed by the employer, the person’s last known home address
c. the date of commencement of employment (and if applicable the date of cessation of employment) as an occupationally exposed person
d. the kind of work performed by the occupationally exposed person
e. details of the types of ionising radiation to which the occupationally exposed person may have been exposed in the course of employment with the employer, including information about radioactive substances in unsealed form (if any) to which the occupationally exposed person may have been exposed
f. details of any radiation accidents in which the person has been involved or by which the person may have been affected
g. details of the personal monitoring device worn by the occupationally exposed person, and
h. the results of monitoring levels of radiation exposure of the occupationally exposed person.

(74) The University must:

a. keep all records relating to exposure of the workforce (including personal exposure records for radiation workers issued with personal monitoring devices) until at least five years after the cessation of the radiation worker’s employment with the University
b. provide a copy of personal exposure records to radiation workers on request or when exposure levels exceed

set thresholds, and

c. provide a copy of personal exposure records to staff radiation workers upon exit from the organisation.

(75) The University will issue a radiation worker with a copy of their radiation exposure records on request to Radiation Monitoring (radmon@csu.edu.au).

Exit of radiation workers from the University

(76) When an occupationally exposed staff member leaves the University, the University must:

a. provide a copy of the personal radiation exposure record of the occupationally exposed person to that person following notification of termination of employment, and
b. supply a copy of an employee's personal radiation exposure record to other employer/s when requested by the employee who is taking up employment as an occupationally exposed person with another employer.

(77) All reports should be issued in a standard format and must carry the following warning:

> THESE RECORDS SHOULD BE KEPT SAFELY AND PERMANENTLY AND BE GIVEN TO ANY FUTURE EMPLOYER EMPLOYING YOU AS A RADIATION WORKER.

(78) The Division of People and Culture (DPC) maintains a record of all identified radiation workers. DPC will check the personnel file of all exiting employees and, if they have been identified as a radiation worker, the following procedure will be followed:

a. The staff member must return any personal monitoring devices issued to them by the University.
b. DPC will:
    i. email Radiation Monitoring (radmon@csu.edu.au) and RSC to advise that the employee is exiting the University (this is an automated process set up for radiation workers' personnel files)
    ii. advise the exiting employee that they must:
        - return all personal monitoring devices on their last day of work, and
        - provide a forwarding email or address as a final personal exposure report will be provided once all personal monitoring devices have been returned and reported on (which may be some months after exit from the University).
    iii. maintain a forwarding email or address for the exiting employee until the final exposure report is provided.
c. After all personal monitoring devices are returned, analysed and the reports become available, Radiation Monitoring will:
    i. export the personal exposure record for the exited staff member from the database and provide a copy to DPC and RSC. The report must include the following disclaimer as specified in clause 30 of the Regulation:

        > ii. THESE RECORDS SHOULD BE KEPT SAFELY AND PERMANENTLY AND BE GIVEN TO ANY FUTURE EMPLOYER EMPLOYING YOU AS A RADIATION WORKER.

d. DPC will:
    i. email or post the personal radiation exposure record to the exiting employee, with a copy to the RSC, and
    ii. maintain a copy in the individual's personnel file.

e. The Research Integrity Unit will include the personal radiation exposure record and email/letter on the agenda of the next RSC meeting to allow the committee to ensure an exposure report has been sent for every radiation worker exit notification received.

Part G - Exceeded radiation dose threshold notifications

(79) The Radiation Safety Committee (RSC) has, in the Radiation Management Plan, set radiation dose notification threshold levels for monitoring personal radiation and ensuring individual exposure is within safe limits. These thresholds are based on:

a. the industry standard 30% notification threshold, and
b. NSW Environment Protection Authority (EPA) advice that recommends organisations set their action and investigation levels below the levels to ensure the health and safety of employees and other persons for which they have a duty of care. For further advice or information, refer to International Commission on Radiological Protection (ICRP) Publication 103 and the International Atomic Energy Agency (IAEA) General Safety Requirements Part 3; or contact the EPA.

(80) For the purposes of this procedure, the following terms are used for the various dose thresholds and associated notifications:

a. Dose limit – 20mSv per year, averaged over a period of five consecutive calendar years. This is the maximum dose limit allowed for an occupationally exposed person under Schedule 5 of the Regulation.
b. Exceeded dose limit – A dose exceeding the dose limit for the wear period:
    i. Six month wear period – >9.6mSv
    ii. Three month wear period – >4.8mSv
    iii. One month wear period – >1.5mSv
c. Warning dose – A dose exceeding 30% of the dose limit for the wear period:
    i. Six month wear period – 3mSv to 9.6mSv
    ii. Three month wear period – 1.5 mSv to 4.8 mSv
    iii. One month wear period – 0.5 mSv to 1.5 mSv
d. Low dose – A dose registered by a personal monitoring device that exceeds 0.5mSv, but is less than 30% of the dose limit for the wear period:
    i. Six month wear period – 0.5mSv to 3mSv
    ii. Three month wear period – 0.5mSv to 1.5mSv

(81) The FOSH Technical Support Unit receives a notification from the personal monitoring device service provider when a device has exceeded the low dose threshold. The service provider highlights doses of 0.5 mSv or higher, regardless of wear period.

(82) Dose notifications exceeding 0.5mSv are always passed on to the relevant radiation worker or student and investigated by the Subject Coordinator or supervisor where required.

Low dose notification

(83) A low dose notification is sent to a radiation worker or student when their personal monitoring device reading exceeds 0.5 mSv but is less than 30% of the dose limit for their relevant wear period.

(84) The FOSH Technical Support Unit will:

a. notify the radiation worker or student within 10 business days of advice from the service provider

b. advise the radiation worker or student by email using the ‘low dose notification’ script approved by the RSC, providing instructions on who to contact if the radiation worker has any concerns and a copy of the dose report
c. provide a copy of the notification and dose report to Health, Safety and Wellbeing (HSW), RSC, Radiation Monitoring and:
    i. for staff, their supervisor and DPC for inclusion in the staff member’s records, or
    ii. for students, their supervisor or Subject Coordinator.

Second low dose notification within a year

(85) When a second low dose notification is sent to a radiation worker or student within a year, the radiation worker is instructed to lodge an incident report providing an explanation of possible causes of the dose received.

(86) The FOSH Technical Support Unit will:

a. notify the radiation worker or student within 10 business days of advice from the service provider
b. advise the radiation worker or student by email using the ‘second low dose notification within a year’ script approved by the RSC, providing instructions on who to contact if the radiation worker has any concerns and a copy of the dose report
c. provide a copy of the notification and dose report to HSW, RSC, Radiation Monitoring and:
    i. for staff, their supervisor and DPC for inclusion in the staff member’s records, or
    ii. for students, their supervisor or Subject Coordinator.

Warning dose notification

(87) A warning dose notification is sent to a radiation worker or student when their personal monitoring device reading exceeds 30% of the dose limit for their relevant wear period.

(88) The FOSH Technical Support Unit will:

a. notify the radiation worker or student within five business days of advice from the service provider
b. advise the radiation worker or student by email using the ‘warning dose notification’ script approved by the RSC. This notification will include instructions on who to contact if the radiation worker has any concerns, and how to lodge an incident report on the online incident reporting system within five business days. The dose report provided by the personal monitoring device service provider will be attached to the email.
c. provide a copy of the notification and dose report to HSW, RSC, Radiation Monitoring and:
    i. for staff, their supervisor and DPC for inclusion in the staff member’s records, or
    ii. for students, their supervisor or Subject Coordinator.
d. once the radiation worker or student’s an incident report is assessed by the Subject Coordinator or supervisor, file a copy of the assessed incident report,
e. send a copy of the assessed incident report to the RSC.

Notice when dose limit is exceeded

(89) An exceeded dose limit notification is sent to a radiation worker or student when their personal monitoring device reading exceeds the dose limit for the relevant wear period.

(90) The personal monitoring device service provider is required to report these doses directly to the Radiation Control Section of the NSW EPA, and the University will be required to provide a report of the investigation conducted within seven working days after notice of result. Therefore, the timelines below are tighter than those for low and warning

dose notifications.

(91) Any report made to an external agency must be concurrently reported through the online incident reporting system and the relevant Executive Leadership Team members and Risk and Compliance Unit must be advised.

(92) The FOSH Technical Support Unit will:

a. immediately inform the RSC of the exceeded dose notification received from the personal monitoring device service provider
b. notify the radiation worker or student within one business day of advice from the service provider
c. advise the radiation worker or student by email using the 'exceeded dose limit notification' script approved by the RSC. This notification will include instructions on who to contact if the radiation worker or student has any concerns, and how to lodge an incident report on the online incident reporting system within three business days. The dose report provided by the personal monitoring device service provider will be attached to the email.
d. provide a copy of the notification and dose report to HSW, RSC, Radiation Monitoring and:
    i. for staff, their supervisor and DPC for inclusion in the staff member's records, or
    ii. for students, their supervisor or Subject Coordinator.

(93) The incident report is to be assessed and investigated by the Subject Coordinator or supervisor in consultation with Health, Safety and Wellbeing and subject matter experts from the Radiation Safety Committee.

(94) Completed investigation reports, including corrective actions to prevent recurrence will be tabled at the next available RSC meeting for endorsement.

(95) The RSC will advise the Audit and Risk Committee of the exceeded dose and incident summary and response in the next quarterly report.

(96) The University will be required to respond to the NSW EPA and provide a report of the investigation conducted into the exceeded dose.

(97) For more details of dose limits and notification requirements, please refer to the 'Radiation Monitoring' section of the Radiation Management Plan, available from the Radiation Safety Committee website.

Personal monitoring device wearers

(98) Personal monitoring device wearers will:

a. always wear the personal monitoring device using the holder supplied; the holder incorporates filters which allow an assessment of the radiation quality
b. wear the personal monitoring device correctly; it should be worn on the chest with the provider's logo facing away from the body
c. always wear the personal monitoring device under a lead apron, if used; as the device is used to measure radiation exposure to the body, it should not be worn outside of protective clothing, However, care should be taken not to shield the badge by pens, buckles, name tags, etc.
d. take care not to damage the personal monitoring device; pin holes, water, pressure, chemicals and heat can damage the device and prevent evaluation of the dose
e. never store personal monitoring devices near radiation sources when not being worn
f. return the personal monitoring device promptly, in accordance with the schedule set out on the Radiation Safety website; devices must be returned to the dosimetry service provider by the University upon receipt of a new batch, and extended delay increases the chances of accidental exposure to the device and may also result

in fees being incurred by the wearer, and

g. return the personal monitoring device for assessment immediately and lodge an incident report if it is suspected that a wearer has received a significant radiation dose.

Section 4 - Guidelines

(99) None.

Section 5 - Glossary

(100) For the purpose of this procedure:

a. Harmful non-ionising radiation – see 'High powered laser devices'.
b. High powered laser devices – means lasers classified as either Class 3B lasers producing visible or invisible light that is hazardous under direct viewing conditions or may cause skin burns, and Class 4 lasers which are high power devices capable of causing both eye and skin burns, their diffuse reflections may also be hazardous and the beam may constitute a fire hazard. More information is available under the Work Health and Safety Regulation 2017.
c. Ionising radiation – means, in addition to the meaning in the Act, radiation from a variety of natural (background radiation) and artificial sources that is capable of producing ions directly or indirectly in passage through matter. In the context of the University, ionising radiation is usually in the form of x-ray sources or ionising radiation emitted from radioactive sources (sealed and unsealed).
d. Irradiating apparatus – means, in addition to the meaning in the Act, a medical, industrial, or scientific device that generates ionising radiation. At the University this apparatus most commonly includes x-ray apparatus including general x-ray and computed tomography.
e. Non-ionising radiation – means, in addition to the meaning in the Act, electromagnetic waves that do not damage DNA directly when it passes through tissues of the body, but exposure can cause burns, cancers or blindness in extreme cases. Examples of non-ionising radiation sources include ultraviolet radiation, light, infrared radiation and lasers.
f. Occupationally exposed person – see 'Radiation worker'.
g. University consultancy - means professional activity with a third party outside the University which generates financial or in-kind benefits, as per the Employment Conditions Procedure - Additional Employment and University Consultancies.
h. Personal monitoring device – means a device for monitoring exposure to ionising radiation.
i. Personal radiation exposure report – means a detailed summary of the radiation exposure received by a radiation worker during their period of employment or tertiary education at the University.
j. Radiation facility – means a room, area or laboratory where radiation-producing apparatus or radioactive materials can deliver doses of regulatory concern to radiation workers or the public.
k. Radiation management licence – means the licence issued by the NSW Environment Protection Authority (EPA) to regulate, restrict or prohibit the possession, sale, storage, giving away, and disposal of regulated material to protect the community and the environment from exposure to radiation. A person responsible for regulated material must hold a radiation management licence in respect of the regulated material and must comply with any conditions to which the licence is subject.
l. Radiation Monitoring (radmon) – refers to a function of the Faculty of Science and Health (FOSH) Technical Support Unit, which is responsible for administering the provision of personal monitoring devices for the University.
m. Radiation subject – means a teaching subject that involves the use of radiation in educational activities.

n. Radioactive substance – means, in addition to the meaning in the Act, any natural or artificial substance that emits ionising radiation as a result of the spontaneous decay of unstable atomic nuclei. This process, known as radioactive decay, releases energy in the form of ionising radiation, which can include alpha particles, beta particles, and/or gamma rays. In the context of the University, radioactive substances are most commonly found in sealed sources used for neutron soil moisture meters or unsealed radioactive sources used in laboratory based research.

o. Radiation worker - has the same meaning as 'occupationally exposed person' in the relevant legislation and means a staff member or student who is exposed to radiation directly arising out of, or in the course of, their employment or tertiary education activities.

p. Security enhanced source – means, in addition to the meaning in the Act, high activity radioactive sources which have the potential to cause serious harm to people and the environment and are subject to stringent security requirements.

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