



Incident Reporting Framework

This document outlines the requirements and importance of reporting incidents and near misses to the Radiological Council. Reporting of all incidents is encouraged; even minor incidents can provide useful information for the identification of faults and the prevention of future incidents. All incidents are anonymised and reported to the Australian Radiation Incident Register (ARIR), which allows for reporting on national trends and the identification of opportunities for improvement in the safe use of radiation. Unless specified, there is no dose limit below which incidents are to be reported.

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What is Holistic Safety

The International Atomic Energy Agency (IAEA) promotes the concept of holistic safety, which is expressed through an integrated and systemic approach that brings together all aspects of safety management, leadership, and organisational culture within organisations that manage radiation risks. The concept recognises that safety, health, environment, security, quality, and human factors are interdependent and should be considered collectively to support the protection of people and the environment, with safety viewed as a shared responsibility across all levels of an organisation.

Why is this Important

Safety depends on the whole system, not just individual parts. Holistic safety recognises that accidents and safety failures usually arise from a combination of technical, human, and organisational factors and not a single cause. By managing these factors together, organisations can anticipate and prevent problems before they escalate and ensure safety is never compromised by other priorities. When safety, quality, security, environment, and economic goals are managed separately, trade-offs can occur; a holistic system integrates them all, ensuring that safety remains the overriding priority in every decision. The holistic approach strengthens safety culture and accountability; builds a culture where everyone from leaders to front-line staff feel responsible for safety, promotes open communication, learn from mistakes and trust across the organisation. The shared accountability reduces complacency and improves awareness of radiation and operational risks. By viewing safety systemically, organisations are better prepared to adapt to change, respond to new risks and recover from incidents. Continuous measurement, feedback, and improvement ensure the organisation learns and evolves safely over time. The overall goal of holistic safety is to protect human health, the environment, and future generations from the harmful effects of ionising radiation.

What is an Incident

An unplanned event or situation that has the potential to cause injury, damage, or exposure to people, property, the environment, or safety systems, whether that harm occurs. Radiation incidents can involve unintended exposure, contamination, equipment failure, human error, loss of control, or security breaches. They can range from minor near misses to serious accidents, but all require prompt reporting, investigation, and corrective actions to protect people and the environment.

What is a Near Miss

An unplanned event that did not result in injury, damage, or exposure, but had the potential to do so if conditions had been slightly different.

Incident Reporting

Radiation incidents that are reportable to the Radiological Council are specified under Regulation 19A of the *Radiation Safety (General) Regulations*, together with any incidents required to be reported under the conditions, restrictions and limitations attached to a registration, or events that are inconsistent with the procedures outlined in an approved Radiation Management Plan. In the event of an incident, the Radiation Safety Officer should be notified in the first instance.

The Radiological Council encourages the reporting of all radiation incidents, including minor events and near misses, as these can provide valuable information for identifying system weaknesses, improving safety practices, and preventing future occurrences. All prescribed incidents must be reported in writing to the Radiological Council within the required timeframe (Annex A).

Incidents involving lost or stolen radiation sources, irradiating apparatus, or electronic products must be reported to Council immediately upon becoming aware of the loss or theft.



<https://www.magnific.com/psd/6-step-infographic-semi-circle/2>

What does the Radiological Council do with your report

Council meetings are held on the second Tuesday of each month. Once your incident report is received, it will be reviewed by a Council officer prior to the meeting. Council officers may contact you to request additional information or clarification regarding matters contained within the incident report.

Enquiries into an incident are not undertaken to place blame on any individual or facility, but rather to determine how and why the incident occurred and to identify the actions, controls, or procedures that have been implemented to prevent or minimise the likelihood of a similar incident occurring in the future. It is important that Council officers receive comprehensive information to enable a thorough assessment and presentation to the Council, thereby minimising delays in the review process.

The Council will consider the incident and any associated findings. Where the Council determines that further action is required, the matter may be referred for additional investigation, further information may be requested from the reporting facility, or recommendations and regulatory actions may be issued to address identified safety concerns and prevent recurrence. If no further action is required, the incident will be anonymised and reported to the Australian Radiation Incident Register (ARIR).

A summary of radiation incidents reported throughout the year is also provided to the Minister through the Radiological Council's Annual Report, which is available on the Council's website

Expectations When Submitting an Incident Report

When completing an incident report, your primary focus should be on accuracy, objectivity, and completeness. Provide a clear, factual account of what occurred without assigning blame or including personal opinions. Ensure all information is detailed, chronological, and verifiable. If abbreviations are used, write out the full term first, followed by the abbreviation in parentheses. For information on what needs to be included in the incident report please refer to the incident report requirements summary table below and the incident reporting information in Annex A.

All incident reports must be clearly written and provide sufficient detail to enable an independent reader to understand the nature of the incident, the individuals involved, the cause of the incident, the actions taken in response, and the measures implemented to prevent recurrence.

The Radiological Council Incident Reporting Form is available on the Council's website at www.radiologicalcouncil.wa.gov.au.

Incident Report Requirements – Summary Table

Category	Details to Include
Basic Incident Details	• Date and time of incident • Exact location including address • Main contact number
Licence Holders / Supervising Licensee	• Name and details of licence holders or supervising licensees involved
Other People Involved	• Names and roles of all involved individuals • Patient details (if applicable) • Details of anyone injured • Witness names • People who took immediate action
Detailed Description	• Chronological account of events before, during, and after the incident
Root Cause Analysis	• Identify underlying causes • Use tools such as the 5 Whys or Fishbone Diagram
Witness Information	• Names and contact details of all witnesses
Equipment Involved	• Details of irradiating apparatus, electronic product, or radioactive substance • Model, serial number, status, maintenance history (if relevant)
Dose Received	• Any unintended radiation dose received by staff, patients, or others
Injuries and Damage	• Description of injuries • Equipment, facility, or material damage
Actions Taken	• Immediate response actions • Notifications made (e.g. patient, radiation safety officer, Radiological Council) • Isolation of equipment or area
Supporting Evidence	• Photographs • Statements • Reports • Video evidence • Logs or dose records
Corrective Actions – Prevention	• Measures to prevent recurrence • Protocol updates • Equipment or engineering changes
Corrective Actions – Feedback & Training	• Training required for staff to implement new safety measures e.g. what is the training/ how has it been implemented

Annex A

Reporting Incidents

Incidents involving radiation that are to be reported to the Radiological Council are specified under regulation 19A of the Radiation Safety (General) Regulations in addition to those required under the conditions, restrictions and limitations attached to a registration or any event that goes against your working procedures outlined in your radiation management plan. In the event of an incident, contact your Radiation Safety Officer in the first instance. Reporting of all incidents is encouraged even minor incidents can provide useful information for the identification of faults and the prevention of future incidents. All incidents specified must be reported in writing to the Radiological Council as detailed below.

Loss or Theft

Council must be notified immediately where there has been a loss or theft of a source of radiation

A person who is the registrant or licensee in possession or control of, any radioactive substance, irradiating apparatus or electronic product shall report any loss or theft to the Council immediately after learning of the loss or theft.

Abnormal or Unplanned Exposure or Medical Radiation Incidents

Incidents considered as abnormal or unplanned radiation exposures

- Medical radiation incidents as specified in the conditions attached to a registration (Annex A.1), including any procedure other than as prescribed, inadvertent exposures, observable radiation injuries and near-miss situations
- An unintended emission of radiation as a result of damage to, or the malfunction of, radiation producing apparatus or devices containing radioactive substances (or controlling their use)
- Contamination by a radioactive substance resulting from the spillage of more than 10 times the exempt quantity specified in Schedule V
- A release to the environment of a radioactive substance in excess of the limits specified in Schedule VIII
- Any other incidents that warrant reporting or that are specified in the conditions attached to a registration

Actions that need to be taken following an exposure incident

Medical radiation incidents are required to be reported as soon as practicable and within 30 days from the date of the incident. For all other incidents, as soon as practicable after becoming aware of an incident, the registrant must –

- ascertain the cause of the exposure
- if the cause of the exposure was damage to or malfunction of radiation producing equipment or devices, immediately take action to ensure there is no ongoing exposure risk
- inform any person who may have been exposed of the occurrence of the exposure
- Notify the Radiological Council in writing of the exposure

Schedule 15 of the Radiation Safety (General) Regulations 1983 describes actions registrants

and licensees must take in regard to the release of excessive concentrations of radioactive substances.

Concentrations of Radioactive Substances Released

Concentration of radioactive substances greater than those outlined in Schedule VIII but less than 10 times this concentration

immediately investigate the circumstances of the release and take corrective actions
report to the Radiological Council on the investigation and corrective actions taken within 14 days of taking the corrective actions

Concentration of radioactive substances 10 times greater than those outlined in Schedule VIII but less than 1000 times this concentration

immediately investigate the circumstances of the release and take corrective actions
report to the Radiological Council within 7 days of the discovery of the radioactive substances released

Concentration of radioactive substances exceeding 1000 times greater than those outlined in Schedule VIII

immediately report the incident to the Radiological Council and ascertain the cause of the possible release and take corrective action as directed by the Council

Dose

The Radiological Council prescribes the monitoring requirements for persons occupationally exposed to ionising radiation in Western Australia (not including patients). Regulation 15 of the Radiation Safety (General) Regulations 1983 describes actions registrants and licensees must take regarding radiation doses received or releases of radioactive substances. In all scenarios the individual/s who receive an actionable dose shall be immediately informed upon discovery. For prescribed monitoring periods (refer to the *radiation monitoring* section of the [common requirements](#) for registrations) differing from 1 month, multiply the 1 month values below in accordance with the monitoring period.

Effective dose in 1 month between 0.5 - 1.65 mSv

- investigate the circumstances of the excessive dose and place a report within their personal file
- if the person receiving the dose is/was not a radiation worker, immediately forward a report on the circumstances to the Radiological Council

Effective dose in 1 month between 1.65 - 8.3 mSv

- investigate the circumstances of the excessive dose and report this to the Radiological Council within 7 days of becoming aware of the excessive dose

Effective dose in 1 month greater than 8.3 mSv

- immediately report the excessive dose to the Radiological Council and circumstances of the radiation exposure and take corrective action as directed by the Council

RADIATION SAFETY ACT 1975 CONDITIONS, RESTRICTIONS AND LIMITATIONS (SECTION 36)

MEDICAL INCIDENT REPORTING

1. This condition details the reporting requirements for medical incidents in addition to those specified under Section 19A of the Radiation Safety (General) Regulations 1983.
2. The registrant must ensure that the following incidents are reported in writing to the Radiological Council as soon as practicable and within 30 days from the date of the incident:
 - 2.1 any procedure other than as prescribed, including any diagnostic procedure or therapeutic treatment delivered:
 - 2.1.1 to the wrong patient;
 - 2.1.2 to the wrong site on the patient;
 - 2.1.3 using the wrong modality, beam type or beam quality;
 - 2.1.4 using the wrong radionuclide.
 - 2.2 any diagnostic procedure resulting in an observable acute radiation effect.
 - 2.3 when during the administration of a radioactive substance for therapeutic purposes, the activity administered differs from that prescribed by 15% or more.
 - 2.4 when during the administration of a therapeutic dose of radiation from irradiating apparatus or a sealed radioactive source, the dose delivered differs from the total prescribed treatment dose by more than 10%^a.
 - 2.5 inadvertent or unjustified radiation exposure of a pregnant patient that has or is likely to result in a radiation dose to the embryo or foetus of more than 1 mSv.
 - 2.6 inadvertent or unjustified administration of a radioactive substance to a lactating patient where the radiation dose to the nursing child is likely in excess of 1 mSv.
 - 2.7 where a patient dies with radioactive substances above the relevant exemption level in situ and the situation has not been dealt with according to approved procedures.
 - 2.8 any procedure involving the use of a class 3B or 4 laser where there is actual injury, or the potential for injury, as a result of operator error, damage or malfunction of equipment, or failure of management systems.
 - 2.9 other incidents warranting reporting, for example near-miss situations where there is a potential benefit for other users to be alerted.
3. The registrant must comply with Section 19A (2) and 19A (3) of the Radiation Safety (General) Regulations 1983, which outline the follow up actions and reporting requirements for incidents captured under point 2 above.

CONDITION NO: 195