

## COC-1

# Code of Compliance for radiation management plans 2022

Issued February 2023

This code was approved for publication by the Chief Executive of the South Australian Environment Protection Authority on 15 February 2023.

This code provides the mandatory requirements for radiation management plans to be submitted and complied with by applicants for a radiation management licence.

It should be read in conjunction with the [Radiation Protection and Control Act 2021](#) and the [Radiation Protection and Control Regulations 2022](#).

### Citation

This code may be cited as the *Code of Compliance for Radiation Management Plans 2022*.

## Part 1 – Preliminary

### 1 Interpretation

In this code, unless the contrary intention appears—

Any terms used have the meanings given to them in the *Radiation Protection and Control Act 2021* (RPC Act) and in the *Radiation Protection and Control Regulations 2022* (RPC Regulations).

If a word or phrase is defined in this code, other parts of speech and grammatical forms of the word or phrase have corresponding meanings:

**ARPANSA** means Australian Radiation Protection and Nuclear Safety Agency

**IAEA** means the International Atomic Energy Agency

**Department** means the administrative unit of the Public Service that is responsible for assisting a Minister in the administration of the Act.

**Medical Exposure Code** means the *Code for Radiation Protection in Medical Exposure* (2019) published by ARPANSA, as amended from time to time.

**Mining Code** means the *Code of Practice and Safety Guide for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing* (2005) published by ARPANSA, as amended from time to time

**Planned Exposure Code** means the *Code for Radiation Protection in Planned Exposure Situations* (2020) published by ARPANSA, as amended from time to time

**Security Code** means the *Code of Practice for the Security of Radioactive Sources* (2019) published by ARPANSA, as amended from time to time

**Supervision – direct supervision** is when a person, licensed under the Act for that activity, is physically present and directing an individual undertaking an activity. The supervisor gives directions to the person prior to the activity and while undertaking the activity and ensures that radiation safety requirements are followed.

**Supervision – indirect supervision** is when a person, licensed under the Act for that activity and working in the same premises or for the organisation, has oversight and provides directions to a supervised person for the activity undertaken, but does not constantly observe the person. The supervisor gives directions to the person prior to the activity, sufficient to ensure safety, and sets in place measures to verify that radiation safety requirements are followed. The supervisor must be accessible to the supervised person.

**Transport Code** means the *Code for the Safe Transport of Radioactive Material* (2019) published by ARPANSA

**Under the directions of a person** means working with either direct or indirect supervision

## 2 Application of code

- (1) This code must be complied with by the person who applies for or holds a radiation management licence under Part 4 Division 1 of the RPC Act. A radiation management plan is required for the following five types of activities:
  - (a) Testing for developmental purposes in relation to mining and mineral processing.
  - (b) Mining or mineral processing.
  - (c) Construct, establish, control of a radiation facility.
  - (d) Transport of radioactive material.
  - (e) Possession of radiation source.

## 3 Interaction between the regulations and relevant codes

- (1) If a provision of this code is inconsistent with the regulations, the regulations prevail to the extent of the inconsistency.
- (2) If a provision of a code or other document, published by ARPANSA, is inconsistent with this code, the provisions of this code prevail to the extent of the inconsistency.
- (3) If a person is in possession of multiple types of radiation sources to which different codes or other documents published by ARPANSA apply and that are inconsistent, the Planned Exposure Code will prevail to the extent of the inconsistency.
- (4) If a provision of the Transport Code is inconsistent with the Planned Exposure Code, the Transport Code will prevail to the extent of the inconsistency.
- (5) If a provision of the Security Code is inconsistent with a provision of a code or other document, published by ARPANSA, the Security Code will prevail to the extent of the inconsistency.

## Part 2 – General requirements

The purpose of a radiation management plan is to provide information and establish procedures on the proper use and handling of radioactive materials and radiation sources. It details how a licensed person will fulfil the requirements of the Act, regulations and relevant codes or standards for the safe handling and use of radiation sources. It describes the premise and activities, the nature of radiation sources and risks, the controls to manage those risks, and the measures to achieve compliance with regulatory requirements.

## 4 Content of radiation management plan

- (1) The radiation management plan for dealing with<sup>1</sup> a radiation source, a premises or facility, must include as a minimum, the following items where relevant to the activities being undertaken:
  - (a) Details of the premises, radiation sources and radiation risks.
  - (b) Roles and responsibilities of relevant persons in discharging the radiation management plan and legal responsibilities.
  - (c) Contractual arrangements, such as with other companies and contractors, that are required in discharging responsibilities under 4(b).
  - (d) Organisational and worker competencies to meet radiation safety obligations including competency assessment, qualifications, induction, training, and continuing development and reassessment.
  - (e) Arrangements for supervision of workers.
  - (f) Details of quality assurance programs for radiation sources and controls.
  - (g) Measures to protect the security of radioactive sources including storage and transport.
  - (h) Measures for lifecycle management of radioactive material including radioactive waste management.
  - (i) Description of applicable regulations and codes and how they will be complied with.
- (2) The radiation management plan must include information about the following where relevant to the activities being undertaken, premises or facility and subject to section 5:
  - (a) Details of the procedures for radiation safety and the optimisation of protection.
  - (b) Details of how radiation exposures are identified, assessed recorded and reported.
  - (c) Details of monitoring and reporting programs for the environment
  - (d) Dose constraints where applicable.
  - (e) Details of safety devices, PPE and radiation monitoring equipment.
  - (f) Description of incident and accident identification, response, investigation and reporting.
  - (g) Process and frequency for review of the radiation management plan.

## 5 Graded approach

- (1) The protection and safety elements of the radiation management plan are to be commensurate with the complexity of and the radiation risks associated with the licensed activity in a graded manner.
- (2) For the purposes of section 4(2), the plan is expected to address adaptive and responsive measures to assess the performance and effectiveness of the procedures for radiation protection and the optimisation of protection, for the following circumstances—
  - (a) for planned exposures exceeding 1 mSv (millisievert) in a year; and
  - (b) for low probability scenarios that would be classified as a notifiable radiation incident under Schedule 3 of the Regulations.
- (3) For the purposes of section 4(2), the radiation management plan does not need to address activities and circumstances<sup>2</sup>—
  - (a) Where radiation risks arising from the practice or from a source within the practice are sufficiently low as not to warrant implementation of controls; or

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<sup>1</sup> Refer to meaning of *deal with* in section 3 of the RPC Act.

<sup>2</sup> Exemptions from regulatory requirements do not apply to activities that are not justified under the RPC Act.

- (b) Where controls of the activity would yield no net benefit, in that no reasonable measures of control would achieve a worthwhile return in terms of reduction of individual doses or of health risks.
- (4) For the purpose of 5(3)(a), risks will be considered sufficiently low—
- (a) where the effective dose expected to be incurred by any individual is demonstrated—
    - (i) under all reasonably foreseeable circumstances to not exceed 100  $\mu$ Sv (microsievert) in a year; and
    - (ii) for low probability scenarios<sup>3</sup> to not exceed 1 mSv in a year; and
    - (iii) for low probability scenarios that would not be classified as a notifiable radiation incident under Schedule 3 of the RPC Regulations; or
  - (b) for naturally occurring radioactive materials (NORM), where the effective dose expected to be incurred by any individual (as determined in a screening assessment) is demonstrated—
    - (i) under all reasonably foreseeable circumstances (including low probability scenarios and including long term implications of storage or disposal) to not exceed 1 mSv in a year; and
    - (ii) for low probability scenarios that would not be classified as a notifiable radiation incident under Schedule 3 of the RPC Regulations; or
  - (c) for activities and circumstances published by the Department as meeting this criterion.
- (5) For the purpose of 5(3)(b), controls of the activity would be considered to yield no net benefit—
- (a) for activities and circumstances published by the Department as meeting this criterion.

## **6 Standard requirements for radiation management plans**

- (1) The radiation management plan must meet the requirements of the Planned Exposure Code and Medical Exposure Code insofar it is relevant to the radiation management plan applied to and to the level of detail commensurate with the complexity and risk associated with the licenced activity.
- (2) The radiation management plan and records relating to the plan must be made available on request to the Department.
- (3) The Department may, by notice in writing given to the holder of a radiation management licence, direct that changes be made to the radiation management plan, having regard to the objects of the RPC Act. The licensee must comply with the notice given.
- (4) The radiation management plan need address only those aspects relevant to protection of people and the environment from radiation but may be integrated<sup>4</sup> with other worker safety management systems where this confers operational benefits.
- (5) For transport activities, the radiation management plan must meet the requirements of the Planned Exposure Code as so far as they are applicable to the transport activity except for where the Planned Exposure Code is inconsistent with the Transport Code.

## **7 Working under directions (supervision of workers)**

- (1) Regulations 17 and 18 of the RPC Regulations provide for persons to use or handle radioactive material, or to operate radiation apparatus, without holding a radiation use licence, when they are working under the directions of a person who holds a licence for that activity.

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<sup>3</sup> Unless otherwise specified, low probability scenarios are those where the probability of occurrence does not exceed 10<sup>-02</sup> per year

<sup>4</sup> It is recommended that an index be maintained that maps regulatory obligations to operational documents

- (2) The radiation management plan must set out the supervision arrangements including whether direct or indirect<sup>5</sup>.
- (3) Arrangements for the supervision of workers should include:
  - (a) Scope of work allowed under direct or indirect supervision.
  - (b) Details of supervisors (name or position, and radiation licence held).
  - (c) Competency and training requirements for persons working under direct supervision, and the method for assessing competency.
  - (d) Competency and training requirements for persons working under indirect supervision, and the method for assessing competency (including observation and practical assessment).
  - (e) Details of how directions will be conveyed to the unlicensed person to ensure radiation safety, and for indirect supervision how the supervisor will be available for reasonable access (either face to face, or by other means as appropriate to foreseeable circumstances).

## Part 3 – Specific requirements

### 8 Staged approvals

- (1) This section applies to the following types of operations:
  - (a) developmental testing operations in relation to mining and mineral processing.
  - (b) mining or mineral processing operations.
  - (c) radiation facility.
- (2) Unless otherwise notified by the Department, prior to commencing any of the following stages of all or part of the facility or mine, the licence-holder must obtain approval for the radiation management plan from the Department:
  - (a) construction
  - (b) operation
  - (c) decommissioning
  - (d) relinquishment of licence.

### 9 Notification of change to operation or amendment to a radiation management plan

- (1) The Department must be notified of any changes to an operation or approved radiation management plan, prior to making the change. The Department may then:
  - (a) Note the notification without any further requirement.
  - (b) Direct that the change or amendment must not be brought into operation without approval.

### 10 Multiple employers/premises

- (1) This section applies to licenced premises with workers who work for multiple employers, or in multiple premises during the year<sup>6</sup>.

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<sup>5</sup> For some activities, direct supervision is a stage towards indirect supervision, with milestone competency assessments, for example for persons in a training program. For some activities direct supervision will always be required, for example for persons undertaking specialist but limited scope of work. Where intrinsic or engineered controls mean that the radiation risk is low, indirect supervision may be appropriate.

<sup>6</sup> Dose limits apply to radiation exposures resulting from a facility or activity. For persons working for multiple employers or in multiple premises, it is in theory possible for an individual to receive a radiation dose over a year that would exceed the limit for a single employer and facility.

- (2) The radiation management plan must include dose constraints for workers who work for multiple employers or in multiple premises during the year, where combined effective dose exposures may approach or exceed 20 mSv in a year, with the objective that the individual's exposure in the course of all their planned exposures is less than the limits specified in the RPC Regulations.

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## Document history

### Publications

Title	Release	Commencement
Code of Compliance for radiation management plans 2022	Second release	11 February 2023

### Amendments

Provision	How changed	Commencement
Introductory text	Included link to regulations	16 February 2023
Interpretation	Included definition of 'Department'	16 February 2023
Content of radiation management plans	Updated scope and requirements regarding monitoring and reporting	16 February 2023
Standard requirements	Clarified application to transport activities	16 February 2023
Working under directions	Moved text re supervision to a footnote	16 February 2023
Notification	Included requirement for notification of changes to RMPs	16 February 2023

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## Further information

### Legislation

[Online legislation](#) is freely available.

### General information

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