



Australian Government

PSPRAD007 Monitor radiation

Release: 1

PSPRAD007 Monitor radiation

Modification History

Release	Comments
1	This unit was released in PSP Public Sector Training Package release 1.0 and meets the Standards for Training Packages. This unit supersedes and is equivalent to PSPRAD401 Monitor radiation. • Unit code updated • Content and formatting updated to comply with the new standards • All PC transitioned from passive to active voice

Application

This unit describes the skills required to safely monitor radiation and the exposure of people and environment during radiation-related work activities. This involves identifying information about the work activities to be monitored, using the specified monitoring equipment, and applying safe working rules and monitoring procedures to obtain reliable results.

This unit applies to those working in radiation-related work activities, including:

- extracting, milling, processing and packing radioactive ores
- operating, installing, servicing and calibrating fixed radiation gauges, bore hole logging or industrial radiography equipment, and moisture and density gauges
- decontaminating and servicing equipment that has been in contact with radioactive material
- XRF and XRD analysis
- collecting, preparing and testing samples containing radioactive materials
- using radionuclides in a laboratory

The activities may take place:

- at a mine or plant that processes radioactive ore and minerals
- with instruments that emit ionising radiation at geotechnical, construction, mining and manufacturing sites, or analytical and research facilities
- in a laboratory or licensed facility that handles radioactive materials
- in a nuclear facility.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would be authorised by the responsible person to perform routine tasks in familiar contexts.

No licensing, legislative or certification requirements apply to unit at the time of publication.

Competency Field

Radiation Safety

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Prepare for assigned monitoring tasks	1.1 Apply radiation management plans concerning hazards, monitoring equipment and safe working rules. 1.2 Liaise with relevant site personnel to arrange access and confirm the nature and likely duration of assigned monitoring tasks. 1.3 Perform and record pre-use checks of radiation instruments and tag or replace faulty items as necessary. 1.4 Check that personal protective equipment (PPE) and other task-related equipment is fit for purpose. 1.5 Stow all radiation instruments and monitoring equipment to ensure safe transport to the site and within the site.
2. Obtain reliable monitoring data or samples	2.1 Apply safe working rules to minimise personal ionising radiation exposure. 2.2 Conduct regular instrument checks and minor maintenance if required. 2.3 Conduct repeat measurements for quality control purposes and identify and report atypical equipment response. 2.4 Collect and label environmental samples using specified equipment and procedures to preserve their integrity. 2.5 Record atypical radiation conditions. 2.6 Seek advice to deal with any situation beyond own technical competence.
3. Complete assigned monitoring tasks	3.1 Check for contamination of equipment. 3.2 Re-stow all radiation instruments and monitoring equipment to ensure safe transport from the site and within the site. 3.3 Record use of PPE and radiation instruments in accordance with

	radiation management plans. 3.4 Check condition of PPE, radiation instruments and monitoring equipment before storing. 3.5 Store any samples to preserve their integrity, security and traceability in accordance with sampling procedures. 3.6 Manage waste.
4. Analyse monitoring data and report results	4.1 Record results. 4.2 Check that recorded outcomes are consistent with expectations. 4.3 Compare results with relevant radiation limits and identify and record any significant differences or atypical results. 4.4 Identify potential or actual radiation protection issues revealed by the site monitoring tasks. 4.5 Identify potential improvements that could be made to monitoring at site. 4.6 Maintain required records that are complete, accurate, legible and secure. 4.7 Provide site and personal radiation data to authorised personnel.
5. Respond to potential or actual radiation incidents	5.1 Recognise unusual situations, unexpected hazards, and potential or actual emergency radiation incidents. 5.2 Inform the responsible person or delegate about the situation, hazard or incident and seek their advice. 5.3 Initiate appropriate workplace emergency first response.

Foundation Skills

Foundation skills are embedded within the elements and performance criteria of this unit.

Unit Mapping Information

This unit supersedes and is equivalent to PSPRAD401 Monitor radiation.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>

Assessment Requirements for PSPRAD007 Monitor radiation

Modification History

Release	Comments
1	These Assessment Requirements were released in PSP Public Sector Training Package release 1.0 and meet the Standards for Training Packages. Assessment Requirements created drawing upon specified assessment information from superseded unit

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- recognising different types of monitoring equipment and their limitations, restrictions and applicability, including at least one of:
 - air proportional
 - gas proportional
 - gas ionisation
 - Geiger-Muller
 - Scintillation
 - neutron monitors
 - solid state
 - personal dosimeters (badge and electronic)
- using relevant information sources to locate and interpret information about radiation sources and equipment encountered in job role or duties
- conducting pre-use checks for radiation instruments and monitoring equipment used in job role or duties
- interpreting manuals for radiation monitoring equipment used in job role or duties
- collecting, labelling and preserving occupational and environmental processing and analysing radiation monitoring data
- assessing and reassessing risks and hazards regularly and taking appropriate protective measures
- safely operating radiation instruments and monitoring equipment to obtain reliable data
- seeking advice and further directions when faced with unforeseen circumstances or situations that may require decisions or response actions beyond technical competence
- using and caring for PPE

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- ionising radiation, radioactivity, radioactive material, activity, dose, contamination, contamination controls, shielding, half-life, and radionuclide
- types and properties of ionising radiation, sources and shielding methods
- definitions of radiation quantities, including exposure, dose, effective dose, dose rate, dose equivalent, and dose limits
- international system (SI) of units for radiation quantities, multiples and sub-multiples
- function of key components and operating principles of radiation instruments and monitoring equipment used in job role
- guidelines and safety procedures for working with radiation sources, based on principles of:
 - reducing exposure time
 - maintaining greatest distance
 - using as much shielding as possible
- health, safety and workplace emergency response procedures relevant to job role or duties
- techniques and procedures for collecting potentially radioactive samples
- techniques for assessing radiation hazards likely to be encountered in job role or duties
- techniques for conducting monitoring surveys used in job role or duties

Assessment Conditions

This unit contains no specific industry-mandated assessment conditions. Guidance on suggested and recommended conditions and methods can be found in the Implementation Guide.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bebbece7-ff48-4d2c-8876-405679019623>