



Australian Government

Department of Education, Employment and Workplace Relations

PSPSOHS506A Monitor and facilitate the management of hazards associated with plant

Release 3

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Modification History

Release	TP Version	Comments
3	PSP12V1	Unit descriptor edited.
2	PSP04V4.2	Layout adjusted. No changes to content.
1	PSP04V4.1	Primary release.

Unit Descriptor

This unit covers the outcomes required to effectively identify hazards, and assess and control risks associated with plant and equipment, including mobile plant, machinery, electrical equipment, pressure vessels and plant affecting public safety. It has been designed to be consistent with the National Standard for Plant [NOHSC: 1010 (1994)].

In practice, monitoring and facilitating the management of hazards associated with plant may overlap with other generalist or specialist public sector work activities such as promoting ethical practice, using complex communication strategies, undertaking research and analysis, coordinating resource usage, promoting compliance with legislation.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

This unit applies to individuals with managerial responsibility for applying a systematic approach to monitoring the identification of hazards and assessing risk arising from the use of plant, and systems of work associated with plant. The focus is on eliminating the hazard or, where this is not possible, minimising risks to health and safety arising from plant.

The unit includes regulatory requirements for design, manufacture, testing, installation, commissioning, use, repair, alteration, dismantling, storage and disposal of plant.

Identification and elimination of OHS hazards at the design stage guides the selection and implementation of appropriate OHS risk controls throughout the life cycle of plant or equipment.

Unit PSPSOHS504A Apply principles of OHS risk management, covers a generic approach to risk management and should be utilised as underpinning knowledge for this unit.

While hazards associated with plant may include noise, chemicals and ergonomic hazards, these are specifically addressed under unit PSPSOHS505A Manage hazards in the work environment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify hazards arising from the use of plant and associated systems of work	<p>1.1 <i>Sources of information, data and advice on plant and equipment hazards</i> are accessed to assist in identifying hazards associated with plant.</p> <p>1.2 <i>Hazards</i> in the design, manufacture, registration, supply, installation, commissioning, use, maintenance, testing, dismantling, storage and disposal of plant and <i>systems of work associated with plant</i> are identified.</p> <p>1.3 Work environment, tasks and circumstances that may lead to hazardous situations or exacerbate risk associated with use of plant and equipment are identified and analysed.</p> <p>1.4 Appropriate <i>specialist advisors, stakeholders</i>, relevant <i>key personnel</i> and other parties are identified and consulted in the process of hazard identification.</p> <p>1.5 Appropriate procedures for <i>recording and reporting</i> on hazards associated with plant are established, reported and reviewed as part of the systematic approach to managing OHS.</p>
2 Analyse OHS risk associated with plant	<p>2.1 The method of <i>risk assessment</i> is determined in consultation with operators and stakeholders and, if required, specialist advisors.</p> <p>2.2 Risks associated with identified hazards arising from plant are assessed in consultation with operators and stakeholders, taking into account the effectiveness of existing controls.</p> <p>2.3 <i>Risk registers</i> are developed and regularly updated for items of plant and associated equipment.</p> <p>2.4 Risks requiring further control action are identified.</p>
3 Control risks associated with plant hazards	<p>3.1 Information, data and advice on risk control options for plant and machinery hazards are sourced.</p> <p>3.2 Operators and stakeholders and key personnel are involved in the development of controls.</p> <p>3.3 Measures for ensuring the health and safety of persons accessing, using and/or maintaining plant are adopted and controlled by applying the <i>hierarchy of control</i>.</p> <p>3.4 Controls for risks associated with plant, including <i>access, egress, dangerous parts, guarding, operational controls, emergency stops and warning devices, registration and design of plant, and certification of operators</i> are applied.</p> <p>3.5 Workplace monitoring processes to eliminate or control risks are properly used and maintained.</p> <p>3.6 Regular and appropriate reporting to stakeholders is undertaken.</p>
4 Identify and recommend controls for	<p>4.1 Stakeholders and key personnel are involved in the development of controls.</p>

ELEMENT	PERFORMANCE CRITERIA
<p>hazards associated with maintenance activities and continued safe use of plant and equipment</p>	<p>4.2 Circumstances are identified where <i>permit to work procedures or certification</i> are required to assist in ensuring a safe working environment.</p> <p>4.3 Permit to work procedures or certification are responded to and monitored in liaison with relevant key personnel to assist in ensuring a safe working environment.</p> <p>4.4 <i>Isolation procedures</i> are implemented and monitored in liaison with relevant key personnel to ensure continued safety of maintenance and <i>other personnel</i>.</p> <p>4.5 Purchasing procedures include actions to address OHS implications of plant and equipment purchase.</p> <p>4.6 Maintenance procedures are developed, documented and communicated to ensure plant and equipment are in a safe condition for use.</p> <p>4.7 Action is taken to ensure that any <i>modifications to plant or equipment</i> are safe and suitable for the task, appropriately documented and work practices modified as required for safe operation.</p> <p>4.8 Maintenance systems are monitored and evaluated for effectiveness, suitability and accuracy in ensuring safe operation of plant and equipment, and action taken as appropriate.</p>
<p>5 Identify and advise on licensing and certification issues associated with plant and equipment</p>	<p>5.1 Types of plant (including plant design) requiring <i>registration</i> and tasks requiring <i>operator licensing and/or certification</i> are identified in accordance with legislative requirements.</p> <p>5.2 <i>OHS requirements</i> to meet plant registration, operator licensing and certification, and other legal requirements are documented and communicated to managers and relevant key personnel.</p> <p>5.3 <i>Training requirements</i> to meet <i>licensing, certification, registration</i> and <i>other legal requirements</i> are documented and communicated to managers and key personnel.</p> <p>5.4 Training needs are analysed to ensure information, instruction and training prior to commencement of work on new plant and equipment and new operating methods.</p> <p>5.5 Compliance with regulatory requirements for operator licensing, registration and certification in the workplace is monitored and reported.</p> <p>5.6 Appropriate records for statutory and specialist plant and associated operator competencies are identified, documented and maintained.</p>
<p>6 Review and evaluate risk control measures for plant</p>	<p>6.1 Effectiveness of control measures are reviewed and risk assessments conducted as appropriate.</p> <p>6.2 Outcomes of OHS risk assessments are compared with criteria to identify risks requiring further risk control and</p>

ELEMENT

PERFORMANCE CRITERIA

- risks deemed *as low as reasonably achievable (ALARA)*.
- 6.3 Stakeholders, key personnel, operators and appropriate specialist advisors, are involved in developing relevant risk control plans for plant.
- 6.4 *Appropriate records* are maintained for the operating life of the plant.
- 6.5 Improvements arising from the review process are recommended or implemented with appropriate key personnel including manufacturers.
- 6.6 The system of managing OHS is reviewed to ensure plant safety.

Required Skills and Knowledge

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

Look for evidence that confirms skills in:

- relating to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- communicating effectively with personnel at all levels of organisation and OHS specialists and, as required, emergency service personnel
- preparing more detailed reports for a range of target groups including OHS committee, OHS representatives, managers and supervisors
- employing project management skills to achieve change
- managing own tasks within time frame
- using consultation and negotiation skills, particularly in relation to developing plans and implementing and monitoring designated actions
- contributing to the assessment of the resources needed to systematically manage OHS and, where appropriate, access resources
- analysing relevant workplace information and data, and make observations including of workplace tasks and interactions between people, their activities, equipment, environment and systems
- carrying out simple arithmetical calculations (e.g. % change), and produce graphs of workplace information and data to identify trends and recognise limitations
- interpreting information and data to identify areas for improvement
- using language and literacy skills appropriate to the workgroup and the task
- using basic computer and information technology skills to access internal and external information and data on OHS
- paying attention to detail when making observations and recording outcomes

Required knowledge:

Look for evidence that confirms knowledge and understanding of:

- roles and responsibilities under OHS legislation of employees, including supervisors and contractors
- legislative requirements for OHS information and data, and consultation
- requirements for record keeping that addresses OHS, privacy and other legislation
- state/territory/Commonwealth OHS legislation (Acts, regulations, codes of practice, associated standards and guidance material) including prescriptive and performance approaches and links to other relevant legislation such as industrial relations, equal employment opportunity, workers compensation, rehabilitation etc
- structure and forms of legislation including regulations, codes of practice, associated standards and guidance material
- concept of common law duty of care
- methods of providing evidence of compliance with OHS legislation

- difference between hazard and risk
- risk as a measure of uncertainty and the factors that affect risk
- basic principles of incident causation and injury processes
- hierarchy of control and considerations for choosing between different control measures, such as possible inadequacies of particular control measures
- principles and practices of systematic approaches to managing OHS
- other function areas that impact on the management of OHS
- internal and external sources of OHS information and data
- how the characteristics and composition of the workforce impact on risk and the systematic approach to managing OHS e.g.
 - labour market changes
 - structure and organisation of workforce e.g. part-time, casual and contract workers, shift rosters, geographical location
 - language, literacy and numeracy
 - communication skills
 - cultural background/workplace diversity
 - gender
 - workers with special needs
- Plant specific knowledge:
 - roles and responsibilities of employers, employees, supervisors, contractors, designers, etc under OHS legislation
 - specific requirements under National Plant and Certification Standards and associated guidance material (such as [NOHSC: 1010])
 - concepts of hazards arising from plant and systems of work associated with plant
 - hazards associated with mobile/fixed plant equipment and risk control strategies
 - basic physics of fluids under pressure and pressure vessels, and the behaviour of pressurised fluid when pressure is released
 - strategies for guarding moving parts in machinery, human factors related to machine guarding, safe design principles, features and limitations
 - knowledge of industry practices related to permit to work and isolation and tag out systems
 - registration requirements of plant, licensing and certification competencies
- basic knowledge of organisational behaviour and culture as it impacts on OHS and on change
- ethics related to professional practice
- professional liability in relation to providing advice
- knowledge of organisational OHS policies and procedures
- nature of workplace processes (including work flow, planning and control) and hazards relevant to the particular workplace
- language, literacy and cultural profile of the workgroup
- organisational culture as it impacts on the workgroup

Evidence Guide

The Evidence Guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the unit descriptor, performance criteria, The range statement and the Assessment Guidelines for the Public Sector Training Package.

Units to be assessed together	<p>Co-assessed units that may be assessed with this unit to increase the efficiency and realism of the assessment process include:</p> <ul style="list-style-type: none">• PSPETHC501B Promote the values and ethos of public service• PSPGOV512A Use complex workplace communication strategies• PSPLEGN501B Promote compliance with legislation in the public sector• PSPSOHS504A Apply principles of OHS risk management• PSPSOHS505A Manage hazards in the work environment.
Overview of evidence requirements	<p>In addition to integrated demonstration of the elements and their related performance criteria, look for evidence that confirms:</p> <ul style="list-style-type: none">• knowledge requirements of this unit• skill requirements of this unit• application of employability skills as they relate to this unit.
Resources required to carry out assessment	<p>Resources essential for assessment include:</p> <ul style="list-style-type: none">• legislation, policy, procedures and protocols relating to the management of hazards associated with plant• workplace documentation, case studies and workplace scenarios to capture the range of situations likely to be encountered when monitoring and facilitating the management of hazards associated with plant.
Where and how to assess evidence	<p>Valid assessment of this unit requires:</p> <ul style="list-style-type: none">• a workplace environment or one that closely resembles normal work practice and replicates the range of conditions likely to be encountered when monitoring and facilitating the management of hazards associated with plant, including coping with difficulties, irregularities and breakdowns in routine• monitoring and facilitation of hazard management associated with plant in a range of 3 or more contexts or occasions, over time. <p>Assessment methods should reflect but not exceed workplace demands, such as literacy, and the needs of individuals who might be disadvantaged.</p>

Assessment methods suitable for valid and reliable assessment of this unit must use authenticated evidence from the workplace and/or training courses and may include a combination of two or more of:

- workplace projects
- simulation or role plays
- case studies and scenarios
- observation.
- portfolios.

The assessment environment should not disadvantage the candidate and where the person has a disability the principle of reasonable adjustment should be applied during assessment.

For consistency of assessment

Evidence must be gathered over time in a range of contexts to ensure the person can achieve the unit outcome and apply the competency in different situations or environments.

Range Statement

The range statement provides information about the context in which the unit of competency is carried out. The variables cater for differences between States and Territories and the Commonwealth, and between organisations and workplaces. They allow for different work requirements, work practices and knowledge. The range statement also provides a focus for assessment. It relates to the unit as a whole. Text in ***bold italics*** in the Performance criteria is explained here.

Plant (as defined in National Standard for Plant) may include:

- any machinery, equipment (including scaffolding), appliance, implement or tool and any other component, fitting or accessory
- fixed and or specified plant as related to Commonwealth, state and territory OHS legislation
- mobile plant and load shifting equipment
- pressure equipment such as boilers, pressure vessels and pressure piping
- electrical installation and plant such as wiring, accessories, fittings, consuming devices, control and protective gear, converters and generators

Sources of information, data and advice on plant and equipment hazards may include:

- relevant Commonwealth, state or territory OHS legislation, regulations, associated standards and codes of practice
- Australian standards
- National Plant and Certification Standards and associated guidance material
- National Occupational Health and Safety Commission (NOHSC)
- state and territory OHS regulatory bodies
- professional associations such as Institute of Engineers Australia, Design Institute of Australia, Building Design Professionals
- employer groups, unions and industry bodies
- OHS professionals including those working in safety engineering, occupational hygiene, occupational health, injury management, toxicology, ergonomics and epidemiology
- manufacturers' manuals and specifications
- employees and operators
- hazard, incident and investigation reports
- workplace inspections
- minutes of meetings
- reports
- audits
- questionnaires and surveys

A **hazard** is defined as:

- a source or a situation with a potential for harm in terms of human injury or ill health, damage to property, damage to the environment, or a combination of these

Systems of work associated with plant may be described in:

- organisation policies and procedures addressing areas, such as operations, maintenance, purchasing
- management systems, such as fleet management, procurement, design and quality assurance
- manufacturers' operations manuals
- standard operating procedures
- documents describing how tasks, projects, inspections, jobs and processes are to be undertaken

Specialist advisors may be internal or external and include:

- ergonomists
- occupational hygienists
- engineers (such as design, acoustic, safety, mechanical, maintenance)
- injury management personnel
- manufacturers
- designers
- suppliers and distributors

Stakeholders may include:

- managers
- employees
- supervisors
- health and safety and other employee representatives
- OHS committees

Key personnel may include:

- maintenance and trade persons
- workplace trainers and assessors
- managers
- supervisors
- users/operators
- OHS representatives

Recording and reporting procedures may include:

- policies and procedures underpinning systems of management, particularly OHS
- purchasing and contracting procedures
- standard operating procedures
- job and task statements
- documents describing how tasks, projects, inspections, jobs and processes are to be undertaken
- job safety analysis worksheets
- risk assessments
- plant and equipment registers

- maintenance and service logs, sheets, cards, diaries
- quality system documentation

- Risk is:**
- the chance of something happening that will result in injury or damage
 - measured in terms of consequences (injury or damage) and likelihood of the consequence
- Risk assessment includes identification of:**
- factors contributing to risk
 - current controls and their adequacy
 - any discrepancy between current controls and required standard and quality of control
 - prioritisation or ranking of risk where appropriate
- A risk register may be an internal or external document** customised for the workplace and include:
- a list of hazards, their location and people exposed
 - a range of possible scenarios or circumstances under which the hazards may cause injury or damage
 - the results of risk assessments
 - and may include possible control measures and proposed dates for implementation
- Hierarchy of control means developing risk controls** within the following priority order:
- eliminate hazards
 - and where this is not practicable, minimise risk by:
 - substitution
 - isolating the hazard from personnel
 - using engineering controls
 - using administrative controls (e.g. procedures, training)
 - using personal protective equipment (PPE)
- Access and egress to plant** must allow for:
- access to parts of plant which require cleaning and maintenance
 - access/egress to operator's workstation for normal and emergency conditions
 - may include systems to enable safe access and egress such as:
 - emergency lighting
 - safety doors
 - alarm systems
- Dangerous parts:**
- are potential contact or entrapment points to which the operator may be exposed during:
 - operation
 - examination
 - lubrication
 - adjustment
 - maintenance
- Guarding** may include:
- permanently fixed physical barriers where no access of any part of a person is required

- interlocking physical barriers where access to dangerous areas is required during operation
- physical barriers securely fixed by means of fasteners or devices
- presence-sensing safeguarding systems

Operational controls

must:

- be suitability identified
- have nature and function clearly indicated
- be readily and conveniently located
- be guarded to prevented unintentional activation
- be capable of locking in 'off' position to enable disconnection of all motive power and forces
- be of 'fail safe' type

Emergency stops and warning devices must be:

- prominently, clearly and durably marked
- coloured red (push buttons, bars or handles)
- unable to be affected by electrical or electronic circuit malfunction
- fitted where risk assessment identifies a need
- relevant state and territory jurisdictional requirements

Registration and design of plant may include:

Operator certification is:

- the process by which a certificate to use or operate industrial equipment is issued by a certifying authority

Permit to work procedures or certification are defined as written authority documents that may:

- include approval to undertake work and activities including tests, measurements and monitoring such as hot work permits for welding and cutting in hazardous environments, and confined space entry
- be authorised by a responsible or designated person directly in control of the work
- certify appropriate precautions and controls to be followed
- incorporate checklists, conditions and actions such as the frequency and duration of the work and atmospheric tests
- follow recognised industry standard recording practices

Isolation procedures, known also as lock-out and tag-out, is a safety device system and may:

- include devices such as isolating switches, locks, safety bars, shields, full pressure blanks, spectacle blanks to lock controls - especially moving parts, equipment, systems or devices with stored energy - to an 'off' position while a worker is in a vulnerable position such as:
 - performing maintenance on rotating equipment, and electrical and hydraulic systems
 - locking switches with keys needed to open the lock
- be used in conjunction with a danger tag system that promotes greater safety consciousness amongst the workforce for all situations in which danger to persons could arise from:
 - the operation of machinery, plant or equipment
 - the flow of steam, electricity, gases or liquids
 - the use of faulty or unsafe plant and equipment

- include multiple locking systems and involve written authorisation by a competent person

Other personnel may include:

- visitors
- public
- general community
- other employees and contractors

Modifications to plant and equipment may include:

- changes to physical specification of plant, parts or associated tools
- changes in specification of raw material or plant operating materials, such as lubricants
- changes to work processes and systems
- introduction of contractual arrangements
- introduction of new and emerging technology

Registration means:

- the administrative process by which a certifying authority requires an organisation or industry to register plant, machinery and equipment

Operator licensing and/or certification means:

- any form of regulation that restricts entry to an occupation or a profession to those who meet competency related requirements stipulated by a regulatory authority. (This includes any physical or implied licence, registration, certification, approval or permit that is required by a person in order to gain employment/self employment)

OHS requirements related to plant may include:

- OHS obligations and responsibilities to provide safe equipment
- OHS consultation and participation
- systematic hazard identification, risk analysis and evaluation, and risk control
- compliance licensing and certification competencies for operators applicable to state and/or territory legislation
- documentation requirements relating to plant
- OHS training and information
- purchasing/procurement policy and procedures
- OHS policies and procedures
- safe work procedures
- task observation
- safe behaviour and defensive driving practices
- emergency preparedness
- incident investigation

Training requirements should be defined for:

- person(s) undertaking supervised and/or accredited training towards assessment for a particular certificate
- persons requiring training for safe use of plant or equipment

Licensing, certification and registration

- relevant national and Australian standards
- state and territory OHS legislation and codes of practice

requirements may be defined in:

- licensing and certification requirements applicable to state and/or territory legislation including OHS, dangerous goods, hazardous substances, mining and petrochemical

Other legal requirements include:

- relevant state or territory transport regulations

As low as reasonably achievable (ALARA) means:

- a basic concept where risks are kept as low as is reasonably achievable

Appropriate records include:

- compliance with legislative requirements
- risk assessments
- noise and vibration analysis
- maintenance and modification records

Unit Sector(s)

Not applicable.

Competency field

Specialist Occupational Health & Safety.