



Australian Government

Department of Education, Employment and Workplace Relations

BSBOHS506B Monitor and facilitate the management of hazards associated with plant

Release: 1

BSBOHS506B Monitor and facilitate the management of hazards associated with plant

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes, skills and knowledge required to effectively identify hazards, and to assess and control risks associated with plant and equipment, including mobile plant, machinery, electrical equipment, pressure vessels and plant affecting public safety.</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.</p>
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Application of the Unit

Application of the unit	<p>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 practicable, minimising risks to health and safety arising from plant.</p> <p>The unit examines regulatory requirements for design, manufacture, testing, installation, commissioning, use, repair, alteration, dismantling, storage and disposal of plant. Identification and elimination of occupational health and safety (OHS) hazards at the design stage guides the selection and implementation of appropriate OHS risk controls throughout the life cycle of plant or equipment.</p> <p>BSBOHS504B Apply principles of OHS risk management, covers a generic approach to risk management and should be used as underpinning knowledge for this unit.</p> <p>While hazards associated with plant may include noise, chemicals and ergonomic hazards, these are specifically addressed under unit BSBOHS505C Manage hazards in the work environment.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>1. Identify hazards arising from the use of plant and associated systems of work</p>	<p>1.1. Access <i>sources of information, data and advice on plant and equipment hazards</i> to assist in identifying hazards associated with <i>plant</i></p> <p>1.2. Identify <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></p> <p>1.3. Identify and analyse work environment, tasks and circumstances that may lead to hazardous situations or exacerbate risk associated with use of plant and equipment</p> <p>1.4. In the process of hazard identification, identify and consult appropriate <i>specialist advisors, stakeholders, relevant key personnel</i> and other parties</p> <p>1.5. Establish, report and review appropriate procedures for <i>recording and reporting</i> on hazards associated with plant as part of the systematic approach to managing OHS</p>
<p>2. Analyse OHS risk associated with plant</p>	<p>2.1. Determine the method of <i>risk assessment</i> in consultation with operators and stakeholders and, if required, specialist advisors</p> <p>2.2. Identify and assess risks associated with hazards arising from plant in consultation with operators and stakeholders, taking into account the effectiveness of existing controls</p> <p>2.3. Develop and regularly update <i>risk registers</i> for items of plant and associated equipment</p> <p>2.4. Identify risks requiring further control action</p>
<p>3. Control risks associated with plant hazards</p>	<p>3.1. Source information, data and advice on risk control options for plant and machinery hazards</p> <p>3.2. Involve operators, stakeholders and key personnel in the development of controls</p> <p>3.3. Adopt control measures for ensuring the health and safety of persons accessing, using and/or maintaining plant by applying the <i>hierarchy of control</i></p> <p>3.4. Apply <i>controls for access, egress, dangerous parts, guarding, operational controls, emergency stops and warning devices, registrations and design of plant, and operator certification risks</i> associated with plant</p> <p>3.5. Use and maintain workplace monitoring processes to eliminate or control risks properly</p>

ELEMENT	PERFORMANCE CRITERIA
	3.6. Report regularly and appropriately to stakeholders

ELEMENT	PERFORMANCE CRITERIA
<p>4. Identify and recommend controls for hazards associated with maintenance activities and continued safe use of plant and equipment</p>	<p>4.1. Involve stakeholders and key personnel in the development of controls</p> <p>4.2. Identify circumstances where <i>permit to work procedures or certification</i> are required to assist in ensuring a safe working environment</p> <p>4.3. Respond to and monitor, permit to work procedures or certification in liaison with relevant key personnel, ensuring a safe working environment</p> <p>4.4. Implement and monitor <i>isolation procedures</i> in liaison with relevant key personnel, to ensure continued safety of maintenance and <i>other personnel</i></p> <p>4.5. Ensure purchasing procedures include actions to address OHS implications of plant and equipment</p> <p>4.6. Develop, document and communicate maintenance procedures to ensure plant and equipment are safe for use</p> <p>4.7. Take action to ensure that any <i>modifications to plant or equipment</i> are safe and suitable for the task, and appropriately document and modify work practices as required for safe operation</p> <p>4.8. Monitor and evaluate maintenance systems for effectiveness, suitability and accuracy to ensure safe operation of plant and equipment, and take action as appropriate</p>
<p>5. Identify and advise on licensing and certification issues associated with plant and equipment</p>	<p>5.1. Identify types of plant (including plant design) requiring <i>registration</i> and tasks requiring <i>operator licensing and/or certification</i> in accordance with legislative requirements</p> <p>5.2. Document and communicate to managers and relevant key personnel, <i>OHS requirements</i> to meet plant registration, operator licensing and certification, and other legal requirements</p> <p>5.3. Document and communicate to managers and key personnel, <i>training requirements</i> to meet <i>licensing, certification, registration</i> and <i>other legal requirements</i></p> <p>5.4. Analyse training needs to ensure information, instruction and training prior to commencement of work on new plant and equipment and new operating methods</p> <p>5.5. Monitor and report compliance with regulatory requirements for operator licensing, registration and certification in the workplace</p> <p>5.6. Identify, document and maintain appropriate records for statutory and specialist plant and associated</p>

ELEMENT	PERFORMANCE CRITERIA
	operator competencies
6. Review and evaluate risk control measures for plant	<p>6.1. Review effectiveness of control measures and conduct risk assessments as appropriate</p> <p>6.2. Compare outcomes of OHS risk assessments with criteria to identify risks requiring further risk control and risks deemed <i>as low as reasonably achievable (ALARA)</i></p> <p>6.3. Involve stakeholders, key personnel, operators and appropriate specialist advisors, in developing relevant risk control plans for plant</p> <p>6.4. Maintain <i>appropriate records</i> for the operating of the plant</p> <p>6.5. Recommend or implement improvements arising from the review process with appropriate key personnel including manufacturers</p> <p>6.6. Review the system of managing OHS to ensure plant safety</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to:
 - identify areas for hazard control
 - analyse relevant workplace information and data and to make observations of workplace tasks and interactions between people, their activities, equipment, environment and systems
 - contribute to the assessment of resources needed to systematically manage OHS and, where appropriate, access resources
- attention to detail when making observations and recording outcomes
- research skills to access relevant OHS information and data
- numeracy skills to carry out simple arithmetical calculations (e.g. % change), and to produce graphs of workplace information and data to identify trends and recognise limitations
- technological skills to use basic measuring equipment including reading scales and dials applicable to selected hazards
- communication skills to:
 - conduct effective formal and informal meetings and to communicate effectively with personnel at all levels of the organisation, OHS specialists and, as required, emergency services personnel
 - prepare reports for a range of target groups including OHS committee, OHS representatives, managers and supervisors
 - use language and literacy skills appropriate to the workgroup and the task
- consultation and negotiation skills to develop plans and to implement and monitor designated actions
- project management skills to achieve change in OHS matters
- organisational skills to manage own tasks within a timeframe
- information technology skills to access and enter internal and external information and data on OHS and to use a range of communication media.

Required knowledge

- basic principles of incident causation and injury processes
- concept of common law duty of care
- difference between hazard and risk
- ethics related to professional practice
- hierarchy of control and considerations for choosing between different control measures, such as possible inadequacies of particular control measure
- how the characteristics and composition of the workforce impact on risk and the systematic approach to managing OHS, for example:

REQUIRED SKILLS AND KNOWLEDGE

- communication skills
- cultural background/workplace diversity
- gender
- labour market changes
- language, literacy and numeracy
- structure and organisation of workforce e.g. part-time, casual and contract workers, shift rosters, geographical location
- workers with specific needs
- internal and external sources of OHS information and data
- organisational OHS policies and procedures
- language, literacy and cultural profile of the workgroup
- legislative requirements for OHS information and data, and consultation
- methods of providing evidence of compliance with OHS legislation
- nature of workplace processes (including work flow, planning and control) and hazards relevant to the particular workplace
- other functional areas that impact on the management of OHS
- organisational behaviour and culture as it impacts on OHS and on change
- organisational culture as it impacts on the workgroup
- plant specific knowledge:
 - basic physics of fluids under pressure and pressure vessels, and the behaviour of pressurised fluid when pressure is released
 - concepts of hazards arising from plant and systems of work associated with plant
 - hazards associated with mobile/fixed plant equipment and risk control strategies
 - industry practices related to permit to work, and isolation and tag out systems
 - registration requirements of plant, licensing and certification competencies
 - roles and responsibilities of employers, employees, supervisors, contractors, designers under OHS legislation
- specific requirements under Australian Safety and Compensation Council guidance material
- strategies for guarding moving parts in machinery, human factors related to machine guarding, safe design principles, features and limitations
- principles and practices of systematic approaches to managing OHS
- professional liability in relation to providing advice
- requirements for record keeping that addresses OHS, privacy and other legislation
- risk as a measure of uncertainty and the factors that affect risk
- roles and responsibilities under OHS legislation of employees, including supervisors and contractors
- state/territory and 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

REQUIRED SKILLS AND KNOWLEDGE

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| relations, equal employment opportunity, workers compensation, rehabilitation |
| <ul style="list-style-type: none">• structure and forms of legislation including regulations, codes of practice, associated standards and guidance material. |

Evidence Guide

EVIDENCE GUIDE	
<p>The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> • monitoring and facilitating effective identification and control of hazards associated with plant and equipment • knowledge of relevant OHS legislation (acts, regulations, codes of practice, associated standards and guidance material).
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • access to manufacturers' manuals including specifications and operational information and data • access to relevant legislation, standards and guidelines • access to resources outlining a range of hazards and work situations (e.g. video, interactive CD, internet and other computer--based resources) • access to workplace equipment and resources • access to workplace or simulated workplace.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • analysis of responses to case studies and scenarios • assessment of written reports on the effectiveness of hazard identification, risk assessment, control and management actions taken • demonstration of techniques used to identify hazards; assess associated risks; control, monitor and evaluate risks • direct questioning combined with review of portfolios of evidence and third party reports of on-the-job performance by the candidate • observation of performance in role plays • observation of presentations • oral or written questioning to assess knowledge of strategies for guarding moving parts in machinery,

EVIDENCE GUIDE	
	<p>human factors related to machine guarding, safe design principles, features and limitations</p> <ul style="list-style-type: none"> • review of recording and reporting on hazards associated with plant • updating of risk registers for items of plant and associated equipment • review of the system for managing OHS.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> • BSBOHS504C Apply principles of OHS risk management • BSBOHS505C Manage hazards in the work environment • other OHS units.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><i>Sources of information, data and advice on plant and equipment hazards</i> may include:</p>	<ul style="list-style-type: none"> • audits • Australian Standards • employees and operators • employer groups, unions and industry bodies • hazard, incident and investigation reports • manufacturers' manuals and specifications • minutes of meetings • Australian Safety and Compensation Council • OHS professionals including those working in safety engineering, occupational hygiene, occupational health, injury management, toxicology, ergonomics and epidemiology • professional associations • questionnaires and surveys • relevant state/territory and commonwealth, OHS legislation, regulations, associated standards and codes of practice • reports • state and territory OHS regulatory bodies • workplace inspections
<p><i>Plant</i> may include:</p>	<ul style="list-style-type: none"> • any machinery, equipment (including scaffolding), appliance, implement or tool and any other component, fitting or accessory • electrical installation and plant such as wiring, accessories, fittings, consuming devices, control and protective gear, converters and generators • fixed and or specified plant as related to state/territory and commonwealth OHS legislation • mobile plant and load shifting equipment • pressure equipment such as boilers, pressure vessels and pressure piping

RANGE STATEMENT	
<i>Hazards</i> may include:	<ul style="list-style-type: none"> • source or a situation with a potential for harm in terms of: <ul style="list-style-type: none"> • human injury or ill health • damage to property • damage to the environment • a combination of the above
<i>Systems of work associated with plant</i> may include:	<ul style="list-style-type: none"> • documents describing how tasks, projects, inspections, jobs and processes are to be undertaken • management systems, such as fleet management, procurement, design and quality assurance • manufacturers' operations manuals • organisation policies and procedures addressing areas, such as operations, maintenance, purchasing • standard operating procedures
<i>Specialist advisors</i> may include:	<ul style="list-style-type: none"> • designers • engineers (such as design, acoustic, safety, mechanical, maintenance) • ergonomists • injury management personnel • manufacturers • occupational hygienists • suppliers and distributors
<i>Stakeholders</i> may include:	<ul style="list-style-type: none"> • employees • health and safety, and other employee representatives • managers • OHS committees • supervisors
<i>Key personnel</i> may include:	<ul style="list-style-type: none"> • maintenance and trades persons • managers • OHS representatives • supervisors • users/operators • workplace trainers and assessors
<i>Recording and reporting</i> may include:	<ul style="list-style-type: none"> • documents describing how tasks, projects, inspections, jobs and processes are to be undertaken

RANGE STATEMENT	
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| | <ul style="list-style-type: none">• job and task statements• job safety analysis worksheets• maintenance and service logs, sheets, cards, diaries• plant and equipment registers• policies and procedures underpinning systems of management, particularly OHS• purchasing and contracting procedures• quality system documentation• risk assessments• standard operating procedures |
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RANGE STATEMENT	
<i>Risk assessment</i> may include:	<ul style="list-style-type: none"> • any discrepancy between current controls and required standard and quality of control • current controls and their adequacy • identification and analysis of factors contributing to risk • prioritisation or ranking of risk where appropriate
<i>Risk registers</i> may include:	<ul style="list-style-type: none"> • list of hazards, their location and people exposed • possible control measures and proposed dates for implementation • range of possible scenarios or circumstances under which the hazards may cause injury or damage • results of risk assessments
<i>Hierarchy of control</i> may include:	<ul style="list-style-type: none"> • eliminating hazards • and where this is not practicable, minimising risk by: <ul style="list-style-type: none"> • substitution • isolating the hazard from personnel • using engineering controls • using administrative controls (e.g. procedures, training) • using personal protective equipment (PPE)
<i>Controls for access and egress risks</i> may include:	<ul style="list-style-type: none"> • accessing parts of plant which require cleaning and maintenance • access/egress to operator's workstation for normal and emergency conditions • systems to enable safe access and egress such as: <ul style="list-style-type: none"> • emergency lighting • safety doors • alarm systems
<i>Controls for dangerous parts risks</i> may include:	<ul style="list-style-type: none"> • potential contact or entrapment points to which the operator may be exposed during: <ul style="list-style-type: none"> • adjustment • examination • lubrication • maintenance • operation

RANGE STATEMENT	
<i>Controls for guarding risk</i> may include:	<ul style="list-style-type: none"> • 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
<i>Controls for operational controls plant risks</i> may include:	<ul style="list-style-type: none"> • being capable of locking in 'off' position to enable disconnection of all motive power and forces • being guarded to prevent unintentional activation • being of 'fail safe' type • being readily and conveniently located • being suitability identified • having nature and function clearly indicated
<i>Controls for emergency stops and warning devices risks</i> may include:	<ul style="list-style-type: none"> • being able to avoid electrical or electronic circuit malfunction • colouring push buttons, bars or handles red • prominent, clear and durable markings
<i>Controls for registrations and design of plant risks</i> may include:	<ul style="list-style-type: none"> • relevant state and territory jurisdictional requirements
<i>Controls for operator certification risks</i> may include:	<ul style="list-style-type: none"> • processes by which a certificate to use or operate industrial equipment is issued by a certifying authority
<i>Permit to work procedures or certification</i> may include:	<ul style="list-style-type: none"> • being authorised by a responsible or designated person directly in control of the work • certifications that appropriate precautions and controls are followed • checklists • conditions and actions such as frequency and duration of the work and atmospheric tests • documents containing approval to undertake work and activities including tests, measurements monitoring such as: <ul style="list-style-type: none"> • hot work permits for welding and cutting in hazardous environments • confined space entry
<i>Isolation procedures</i> may include:	<ul style="list-style-type: none"> • devices such as: <ul style="list-style-type: none"> • isolating switches

RANGE STATEMENT

- 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
- devices used in conjunction with a danger tag system that promotes greater safety consciousness among the workforce for all situations in which danger to persons could arise from:
 - operation of machinery, plant or equipment
 - flow of steam, electricity, gases or liquids
 - use of faulty or unsafe plant and equipment
- devices characterised by multiple locking systems that involve written authorisation by a competent person

RANGE STATEMENT	
<i>Other personnel</i> may include:	<ul style="list-style-type: none"> • general community • other employees and contractors • public • visitors
<i>Modifications to plant and equipment</i> may include:	<ul style="list-style-type: none"> • changes in specification of raw material or plant operating materials, such as lubricants • changes to physical specification of plant, parts or associated tools • changes to work processes and systems • introduction of contractual arrangements • introduction of new and emerging technology
<i>Registration</i> may include:	<ul style="list-style-type: none"> • administrative process by which a certifying authority requires an organisation or industry to register plant, machinery and equipment
<i>Operator licensing and/or certification</i> may include:	<ul style="list-style-type: none"> • 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, including: <ul style="list-style-type: none"> • any physical or implied licence • registration • certification • approval • permit that is required by a person in order to gain employment/self employment
<i>OHS requirements</i> may include:	<ul style="list-style-type: none"> • compliance, licensing and certification competencies for operators applicable to state/territory and commonwealth legislation • documentation requirements relating to plant • emergency preparedness • incident investigation • OHS consultation and participation • OHS obligations and responsibilities to provide safe equipment • OHS policies and procedures • OHS training and information • purchasing/procurement policy and procedures • safe behaviour and defensive driving practices • safe work procedures • systematic hazard identification, risk analysis and evaluation, and risk control • task observation

RANGE STATEMENT	
<i>Training requirements</i> may include:	<ul style="list-style-type: none"> • supervised and/or accredited training towards assessment for a particular certificate • training for safe use of plant or equipment
<i>Licensing, certification and registration requirements</i> may include:	<ul style="list-style-type: none"> • requirements of: <ul style="list-style-type: none"> • relevant national and Australian Standards • state and territory OHS legislation and codes of practice • licensing and certification requirements applicable to state/territory and commonwealth legislation including OHS, dangerous goods, hazardous substances, mining and petrochemical
<i>Other legal requirements</i> may include:	<ul style="list-style-type: none"> • relevant state or territory transport regulations
<i>As low as reasonably achievable (ALARA)</i> is:	<ul style="list-style-type: none"> • a basic concept where risks are kept as low as is reasonably achievable
<i>Appropriate records</i> may include:	<ul style="list-style-type: none"> • compliance with legislative requirements • maintenance and modification records • noise and vibration analysis • risk assessments

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Regulation, Licensing and Risk - Occupational Health and Safety
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Co-requisite units

Co-requisite units	

Co-requisite units		