MSAPMPER205B Enter confined space

Unit Descriptor

This competency covers the control of entry to confined spaces, for maintenance, servicing of vessels or other necessary reasons. Work in/entry to confined spaces shall conform to relevant legislation and AS2865/2001, or its authorised update or replacement.

Employability Skills This unit contains employability skills.

Prerequisite Unit(s) MSAPMPER200B Work in accordance with an issued permit

Application of the Unit

This competency applies to persons who are required to enter confined space, for maintenance purposes, for cleaning or simply inspection. It is required by all persons who are required to enter a confined space, as defined by the standard AS2865/2001, or its authorised update or replacement. It is expected that all standby persons will also be competent to enter confined space.

The issuing of confined space permits is covered by *MSAPMPER300B Issue work permits.*

This unit includes:

- preparing to enter the confined space
- checking the preparations against the permit conditions
- entering the confined space.

Unit Sector No sector assigned

ELEMENT	PERFORMANCE CRITERIA
1. Assess confined space for entry	1.1 Confirm and verify the purpose of the required entry. 1.2 Identify and assess hazards within/around the confined space. 1.3 Ensure a risk assessment associated with entry of the confined space is conducted and documented. 1.4 Identify and document relevant controls. 1.5 Make confined space ready for entry in compliance with procedures, relevant legislation and AS2865. 1.6 Confirm and verify that the conditions of the permit reflect the risk assessment.
2. Use safety equipment and PPE	2.1 Select and erect required protective equipment, apparatus and signs as defined in the confined space entry permit requirements. 2.2 Select, fit and wear designated personal protective clothing and equipment, including lifelines and harnesses as defined in the confined space entry permit requirements. 2.3 Select, test and use appropriate instruments and monitors for pre entry testing and continuous monitoring of the confined space atmosphere.

3. Control confined space entry	3.1 Ensure designated work complies with confined space permit requirements. 3.2 Arrange re authorisation/reissue of permit where there is any change to work undertaken. 3.3 Complete confined space entry logs, ensuring that all entry and re entry of persons working within the confined space are accurately recorded. 3.4 Maintain communications with all relevant personnel to ensure safety. 3.5 Raise the alarm if a rescue needs to be attempted.
4. Conclude confined space operations	4.1 Recover, clean, service and store equipment according to procedures and manufacturer guidelines. 4.2 Complete appropriate documentation, including withdrawal of permits and records related to use and servicing of equipment. 4.3 Report any issues, including signs and symptoms of operational stress, equipment malfunctions.

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Competence includes the ability to:

- access and interpret information relevant to specific tasks (eg labels, MSDSs hazchem signs)
- access and apply hazard controls
- identify changes to conditions which may lead to the permit being revoked before the job is completed
- describe and/or explain hazards associated with tasks covered by the permit, types of tests required for the issue of work permits - the types of tests to include, atmospheric/oxygen/breathability, flammability/explosivity, toxicity/TWA, temperature, humidity
- identify new hazards and so the required hazard controls and obtain revalidation of permit
- the impact of the regulatory framework and organisation procedures under which the permit operates upon the particular job(s) requiring the permit.

Demonstration of competence in this unit must include knowledge of the following:

- definition of confined space/ability to recognise a confined space and the identification of confined spaces in their workplace
- hazards associated with confined space entry
- hazard identification and risk assessment processes relevant to confined space work
- the site/organisation specific incident response and rescue requirements
- the permit to work system and the limitations and conditions of the issued permit and authorisation requirements.

Language, literacy and numeracy requirements

This unit requires the ability to:

- read and correctly interpret complex P&IDs as relevant to the entry
- speak clearly and unambiguously in English
- explain, describe and verify sometimes complex needs and issues
- understand the permit requirements.

Writing is required to the level of completing workplace forms and producing reports.

Numeracy is required to the level of being able to correctly differentiate between high and low pressures and temperatures, voltages or masses.

Required knowledge

Knowledge and understanding of the relevant OHS and environmental requirements, in particular those relating to various situations requiring work permits, with an ability to implement the requirements in a manner that is relevant to the job. Knowledge of the organisation standard procedures and work instructions and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and in a manner relevant to the job.

Sufficient knowledge of all types of permits is required to ensure work is not carried out without the correct permit. This includes recognizing hot work and confined spaces.

Knowledge of regulatory frameworks should include:

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OHS
- EPA
- OHS authorities and ASCC/NOHSC
- licence requirements
- company policy and permit control systems
- other relevant standards.

Knowledge of and the application to the job of relevant legislation and AS2865/2001, or its authorised update or replacement, is essential. Australian Standard HB 213-2003 Guidelines for Safe Working in Confined Spaces is also a useful reference.

Knowledge of the organisation's confined space procedures is required.

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.

Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

The Australian standard (AS2865) definition given for confined space entry is used in this Training Package, i.e.:

an enclosed or partially enclosed space which -

a. is at atmospheric pressure during occupancy

b. is not intended or designed primarily as a place of work

c. may have restricted means for entry and exit, and

d. may -

(i) have an atmosphere which contains potentially harmful levels of contaminant

(ii) not have a safe oxygen level or

(iii) cause engulfment.

A confined space is determined in part by the hazards associated with a defined set of circumstances (restricted entry or hazardous atmosphere, risk of engulfment) and not just with work performed in a restricted space. In this Training Package work in a 'tight spot' which is not a confined space as defined has been referred to as a 'restricted space'.

Examples of confined space include (but are not restricted to):

- storage tanks, tank cars, process vessels, boilers, pressure vessels, silos and other tank-like compartments
- open-topped spaces such as pits or degreasers
- pipes, sewers, shafts, ducts and similar structures
- shipboard spaces entered through a small hatchway or access point, cargo tanks, cellular double bottom tanks, duct keels, ballast and oil tanks and void spaces (but not including dry cargo holds).

A person is deemed to have entered a confined space when their head (i.e. the breathing zone) or upper part of the body is within the boundary of the confined space. (Note that inserting an arm for atmospheric testing is not considered an entry to a confined space).

Risk assessment is required prior to entry to a confined space. The risk assessment checklists may be derived from a standard or code of practice developed by the organisation to meet relevant legislation and standards. The outcomes of the risk assessment should be documented and retained.

Preparation for entry to a confined space will be in accordance with AS2865, or its authorised update or replacement, and local procedures and may include as appropriate:

- draining
- blanking/blinding of lines
- double block and bleed of lines
- removal of spool piece
- immobilisation of any moving devices
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depressuring
- venting/purging (to a safe area)
- atmospheric testing and monitoring
- other requirements as determined by risk assessment and appropriate to the confined space as required by legislation or AS2865.

Safety equipment may include:

- respiratory protective devices
- self contained breathing apparatus (SCBA)
- long distance breathers
- lifting and lowering devices, safety belts, harnesses and lines
- safety footwear
- gloves
- coveralls
- intrinsically safe torches
- hearing protection
- eye protection
- head protection
- portable gas detectors and monitors
- intrinsically safe communication equipment
- incident response equipment including rescue, First Aid, and fire suppression
- spill kits.

Confined space permit should include details of:

- location, description and duration of work to be done
- hazards that may be encountered
- atmospheric test and monitoring requirements and results
- authorisation
- isolation, lock out, tag out processes
- personal protective equipment and clothing
- other precautions (e.g. signs, barricades)
- size of work crew
- stand-by personnel and emergency response and rescue arrangements
- other requirements as determined by risk assessment and in accordance with legislative requirements and relevant Australian Standard including Appendix H of AS 2865

A 'competent person' is a person who has, through a combination of training, education and experience, acquired and skills enabling that person to correctly perform a specified task.

Checks to ensure a workplace is safe include:

- mechanical and electrical isolations in place
- atmospheric testing complete and atmosphere safe
- process isolations complete
- relevant personnel informed of work and agree that it is

safe and appropriate to proceed

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. These may include:

- legislation/codes
- OHS legislation, codes of practice and guidance material
- EPA
- National and Australian standards
- licence and certification requirements
- internal permit control system.
- process isolations complete
- mechanical and electrical isolations in place
- atmospheric testing complete and atmosphere safe or if not safe and cannot be made safe then appropriate measures are implemented as per SOPs
- relevant personnel informed of work and agree that it is safe and appropriate to proceed.

Tools and equipment

This competency includes use of safety equipment and tools such as:

- eye protection (e.g. goggles)
- ear protection
- gloves
- clothing
- respirators and masks - breathing apparatus
- helmets
- safety footwear
- lines and harnesses
- gas test meters.

Hazards

Typical hazards include:

- heat, smoke, dust or other atmospheric hazards
- sharp edges, protrusions or obstructions
- limited head spaces or overhangs
- equipment or product mass
- slippery surfaces, spills or leaks
- noise, rotational equipment or vibration
- high/low oxygen content
- hazardous atmospheres
- entrapment/engulfment.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'. Typical problems may include:

- provision of the wrong permit/need for additional permits
- incorrect information being supplied with the permit
- errors being made in the understanding of permit data
- failure to correctly correspond to the requirements of the permit
- failure to seek clarification when anomalies occur
- variation in job scope from that specified in the permit.

Variables

Key variables to be monitored include:

- sites under which permit activities must be applied
- type of permit to be executed
- types of tools and equipment to be employed
- size of work team
- scope and urgency of work
- persons in the confined space/rotation of people in confined space.

Health, safety and environment (HSE)

All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

EVIDENCE GUIDE

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.

Overview of assessment

Assessment of this unit should demonstrate competence on actual plant and equipment in a work environment. A holistic approach should be taken to the assessment.

Simulation may be required to allow for assessment of parts of this unit. Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Assessment will ensure that the confined space entry procedures and documentation are known and able to be applied to a confined space entry.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Competence must be demonstrated in the ability to distinguish between situations requiring the major types of permit and to list the major requirements of each type of permit. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

As working in a confined space is inherently hazardous it is essential that the worker be able to demonstrate:

- the ability work within a confined space
- compliance with the permit conditions
- the testing and use of the approved breathing apparatus supplied by the organisation
- identification of problems as they arise
- the ability to take appropriate action to resolve faults/problems or report faults/ problems to appropriate personnel
- ability to apply knowledge of the legislation, relevant standards and site/organisation risk assessment guidelines for confined spaces
- selection, use and maintenance of appropriate PPE
- use of communication equipment and processes applicable to confined space work
- completion of documents and records relevant to confined space work.

Consistent performance should be demonstrated. For example, look to see that:

- communications are timely and effective
- deviations from permit conditions are recognised, reported and corrected and the permit is re-authorised or re-issued by competent person
- actions specified in the permit/standard procedures are carried out
- all safety procedures are followed.

Context of and specific resources for assessment

Competence in this unit may be assessed:

- by using a suitable simulation based on an actual plant and including walk throughs of the relevant competency components and/or a range of case studies/scenarios and role plays
- by questioning and using 'what if' scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant
- through a combination of these techniques.

These aspects may be best assessed using a range of simulations/scenarios/case studies and 'what ifs' as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new or unusual situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions which will be used to probe the reasoning behind the observable actions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Method of assessment

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Guidance information for assessment

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.